South Dakota State Test of Educational Progress

Dakota STEP

Technical Report: 2008 Spring Administration

Pearson

San Antonio, TX

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CHAPTER 1: BACKGROUND

This technical report provides information on the development, administration, scoring, and reporting of the 2008 South Dakota State Test of Educational Progress (*Dakota STEP*) as well as psychometric data used to score the test and ensure its quality. It is intended for those responsible for reviewing the effectiveness of the *Dakota STEP* as well as anyone seeking a deeper understanding of the methods used to develop the test and its results.

The chapters in this report cover the major processes and methods used to develop, administer, score, and report the results of the *Dakota STEP*. Data from the test results and its items, including indicators used for quality control, are presented separately in the appendices. This report also includes a glossary of key terms.

1.1 Statewide Testing and Accountability

The *Dakota STEP* is South Dakota's annual statewide assessment of student progress administered to students in grades 3 through 8 and 11 each spring. The *Dakota STEP* fulfills the requirements for the statewide assessment contained in the federal *No Child Left Behind Act of 2001* (NCLB, 2002), the latest reauthorization of the *Elementary and Secondary Education Act of 1965* (ESEA). NCLB requires each state to adopt challenging academic content and student academic achievement standards for all public-school students and to implement a set of high-quality assessments to measure *adequate yearly progress* (AYP) toward meeting these standards. Moreover, the assessments must report student results using at least three *performance* or *achievement levels*: basic, proficient, and advanced (NCLB, §6311).

All South Dakota public-school students in grades 3 through 8 and 11 are required to take the *Dakota STEP* assessment. Private and alternative-site schools that are classified as accredited or approved by the South Dakota Department of Education (SD DOE) also administer the *Dakota STEP*. Students who are state placed or district placed must be included in the State of South Dakota's Accountability Plan for *No Child Left Behind*. Bureau of Indian Education (BIE) schools participate in the *Dakota STEP* and are expected to follow the same guidelines as public schools.

The annual administration of the *Dakota STEP* provides critical feedback to educators, students, and parents regarding students' academic achievement and mastery of South Dakota's Content Standards. The state is required to notify the public of the performance of its schools and school districts utilizing the NCLB Report Card which evaluates attendance, graduation rates, and student academic achievement. The NCLB Report Card reports the percentage of students scoring at each achievement level for each school, district, and state. Schools and districts that fail to meet AYP for a single year are put on the *alert status*. If schools and districts fail to meet AYP for two consecutive years, those schools and districts are identified for school improvement and sanctions required under NCLB are applied. The *Dakota STEP* is not "high stakes" for students in that the results are not used in making grade promotion decisions or high school graduation decisions.

1.2 South Dakota Content Standards

In 1997, the South Dakota State Legislature passed SB170 that amended South Dakota Codified Law 13-3-48 to address the issue of having challenging state content standards. The adopted amendment reads as follows: "The Secretary of the Department of Education and Cultural Affairs shall prepare and submit for approval of the South Dakota Board of Education academic content standards in Language Arts, Mathematics, Social Studies, and Science for kindergarten through grade twelve. Each school district shall adopt and implement clearly defined and measurable course guidelines so as to meet the state academic content standards."

The South Dakota Content Standards provide a common set of goals and expectations for all students in all schools and are designed to guide the planning of curriculum and to anchor the assessment of learning from kindergarten through twelfth grade. As students move from kindergarten through grade 12, levels of cognitive demand and complexity of content, skills, and processes increase. New skills emerge, and basic skills are subsumed within more advanced skills as students progress through the grades. Grade-level standards specify what students should know and have mastered at the proficient level by the time they are assessed for these skills at the end of each grade level.

Dakota STEP test content is specified by the South Dakota Academic Content Standards. The following content standards documents were used to develop items for the operational 2008 assessment and are available online at http://doe.sd.gov/contentstandards.

South Dakota Reading Content Standards, approved June 2004
South Dakota Mathematics Content Standards, approved June 2004
South Dakota Science Content Standards, approved June 2005

Content standards for each domain are hierarchically organized by content strands, indicators, and grade-specific standards, and achievement descriptors that define the standards-based objectives for South Dakota students. Specifically:

- **Goals, strands, and indicators** represent expected outcomes for all students graduating from South Dakota schools.
- **Grade-specific content standards** represent expected outcomes for students at each grade level.

Reading

The Reading Content Standards consist of grade-specific standards within each of the following indicators. The Reading Content Standards can be found at http://doe.sd.gov/contentstandards/languagearts/reading/old.asp.

Reading Goal: *Students are able read at increasing levels of complexity for a variety of reasons.*

Indicator 1: *Students are able to apply various reading strategies to comprehend and interpret text.*
Indicator 2: *Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.*
Indicator 3: *Students are able to interpret and respond to diverse works from various cultures and time periods.*

Indicator 4: *Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.*

Mathematics

The Mathematics Content Standards consist of grade-specific standards within Algebra, Geometry, Measurement, Number Sense, and Statistics and Probability that represent expected outcomes for all students preparing to graduate from South Dakota schools. The Mathematics Content Standards can be found at http://doe.sd.gov/contentstandards/math.

Algebra (Strand 1): *Students will use the language of algebra to explore, describe, represent, and analyze number expressions and relations that represent variable quantities*.

Indicator 1: *Use procedures to transform algebraic expressions.*
Indicator 2: *Use a variety of algebraic concepts and methods to solve equations and inequalities.*
Indicator 3: *Interpret and develop mathematical models.*
Indicator 4: *Describe and use properties and behaviors of relations, functions, and inverses.*

Geometry (Strand 2): *Students will use the language of geometry to discover, analyze, and communicate geometric concepts, properties, and relationships*.

Indicator 1: *Use deductive and inductive reasoning to recognize and apply properties of geometric figures.*
Indicator 2: *Use properties of geometric figures to solve problems from a variety of perspectives.*

Measurement (Strand 3): *Students will apply systems of measurement and use appropriate measurement tools to describe and analyze the world around them*.

Indicator 1: *Apply measurement concepts in practical applications.*

Number Sense (Strand 4): *Students will develop and use number sense to investigate the characteristics of numbers in a variety of forms and modes of operation*.

Indicator 1: *Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concepts of value, magnitude, and relative magnitude of real numbers.*
Indicator 2: *Apply number operations with real numbers and other number systems.*
Indicator 3: *Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.*

Statistics and Probability (Strand 5): *Students will apply statistical methods to analyze data and explore probability for making decisions and predictions*.

Indicator 1: *Use statistical models to gather, analyze, and display data to draw conclusions.*
Indicator 2: *Apply the concepts of probability to predict events/outcomes and solve problems.*

Science

The Science Content Standards consist of grade-specific standards within Nature of Science, Physical, Life, and Earth/Space Science, and Science, Technology, Environment, and Society that represent expected outcomes for all students preparing to graduate from South Dakota schools. The Science Content Standards can be found at http://doe.sd.gov/contentstandards/science.

Nature of Science (Strand 1): *Students will explore, evaluate, and communicate personal and scientific investigations to understand the nature of science* (grades 8 and 11)**.**

Indicator 1: *Understand the nature and origin of scientific knowledge.*
Indicator 2: *Apply the skills necessary to conduct scientific investigations.*

Physical Science (Strand 2): *Students will use appropriate scientific models to describe and quantify the nature and interactions of matter and energy* (grades 5, 8, and 11)**.**

Indicator 1: *Describe structures and properties of and changes in matter.*
Indicator 2: *Analyze forces, their forms, and their effects on motions.*
Indicator 3: *Analyze interactions of energy and matter.*

Life Science (Strand 3): *Students will describe structures and attributes of living things, processes of life, and interaction with each other and the environment* (grades 5 and 11)**.**

Indicator 1: *Understand the fundamental structures, functions, classifications, and mechanisms found in living things.*
Indicator 2: *Analyze various patterns and products of natural and induced biological change.*
Indicator 3: *Analyze how organisms are linked to one another and the environment.*

Earth/Space Science (Strand 4): *Students will analyze the composition, formative processes, and history of the universe, solar system, and Earth* (grades 5, 8, and 11)**.**

Indicator 1: *Analyze the various structures and processes of the Earth system.*
Indicator 2: *Analyze essential principles and ideas about the composition and structure of the universe.*

Science, Technology, Environment, and Society (Strand 5): *Students will identify and evaluate the relationships and ethical implications of science upon technology, environment, and society* (grades 5, 8, and 11)**.**

Indicator 1: *Analyze various implications/effects of scientific advancement within the environment and society*.
Indicator 2: *Analyze the relationships/interactions among science, technology, environment, and society*.

1.3 South Dakota Achievement Descriptors

Achievement (performance) descriptors provide information to all stakeholders regarding student progress toward mastery of the content standards. Achievement descriptors within the South Dakota Content Standards provide descriptions of three achievement levels: *Basic*, *Proficient*, and *Advanced*. The general achievement descriptors describe how a student at each achievement level would be expected to perform the grade-specific standards.

Advanced: *A student performing at the advanced level exceeds expectations for that grade level. The student is able to perform the content standards for the grade at a high level of difficulty, complexity, or fluency.*

Proficient: *A student performing at the proficient level meets expectations for that grade level. The student is able to perform the content standards for the grade at the level of difficulty, complexity, or fluency specified by the standards.*

Basic: *A student performing at the basic level performs below expectations for that grade level. The student is able to perform some of the content standards for the grade below the level of difficulty, complexity, or fluency specified by the grade-level standards.*

A student performing below the basic level is unable to perform the content standards, therefore; no description is provided for this achievement level. Grade-specific achievement descriptors are documented within the South Dakota Content Standards and are available online at http://doe.sd.gov/contentstandards.

1.4 Organizations and Groups Involved

The South Dakota Department of Education Office of Curriculum, Technology, and Assessment oversees the development, administration, and reporting of the *Dakota STEP* utilizing the experience, expertise, and capacity of the following external contractors.

Pearson supports the SD DOE by developing standards-based items for the *Dakota STEP*. In this capacity, Pearson conducts activities related to item development and convenes item bias and content review sessions with South Dakota teachers. It publishes and distributes the *Dakota STEP* integrated test materials and provides support in training school and district staff to administer the test. Pearson scores the tests and provides the state with results in the form of a scored data file.

The Buros Institute for Assessment Consultation and Outreach (BIACO) of the University of Nebraska conducts workshops to align the pool of items developed for the *Dakota STEP* with the South Dakota Content Standards for all content areas–Reading (grades 3–8 and 11), Mathematics (grades 3–8 and 11), and Science (grades 5, 8, and 11). BIACO also conducts standard setting workshops for the *Dakota STEP* following the operational administration of a new subtest assessing revised content standards.

Norman L. Webb conducts alignment studies of the *Dakota STEP* operational assessments (published forms) with the South Dakota Content Standards for all content areas–Reading (grades 3–8 and 11), Mathematics (grades 3–8 and 11), and Science (grades 5, 8, and 11).

South Dakota educators are involved throughout the item development process participating in content and bias review, alignment workshops, data review as well as standard-setting panels. Many district and school personnel serve as test coordinators and/or building coordinators. The educators and other personnel provide feedback, both formal and informal, to the SD DOE regarding all aspects of test administration.

1.5 Plans for Future Assessments

Revised South Dakota Content Standards for Reading were approved by the Board of Education (BOE) in early spring 2007, aligned with curriculum in the 2007/2008 school year, and applied in curriculum in the 2008/2009 school year. Item development to assess the new standards began in early spring of 2007 following an alignment analysis of the existing items with the new content standards (BIACO, Dec. 2007). Newly developed items were field tested in spring 2008 and the *Dakota STEP* assessment in spring 2009 will fully assess the depth and breadth of the revised Reading Content Standards.

Revised South Dakota Content Standards for Mathematics, planned for BOE approval in early 2011, will be aligned with curriculum in the 2011/2012 school year, and applied in curriculum in the 2012/2013 school year. Item development to assess the new mathematics standards will begin in early spring of 2011 following an alignment analysis of the existing items with the new content standards. Newly developed items will be field tested in spring 2012 and the *Dakota STEP* assessment in spring 2013 will fully assess the depth and breadth of the revised Mathematics Content Standards.

Revised South Dakota Content Standards for Science, planned for BOE approval in early spring 2012, will be aligned with curriculum in the 2012/2013 school year, and applied in curriculum in the 2013/2014 school year. Item development to assess the new standards will begin in early spring of 2012 following an alignment analysis of the existing items with the new content standards. Newly developed items will be field tested in spring 2013 and the *Dakota STEP* assessment in spring 2014 will fully assess the depth and breadth of the revised Science Content Standards.

CHAPTER 2: ITEM DEVELOPMENT AND TEST CONSTRUCTION

This chapter describes the process of developing the standards-based items and tests for the *Dakota STEP* assessment. Virtually all steps in the development process contribute toward the goal of creating a test that shows both *reliability* and *validity* evidence.

> **Reliability** refers to *the consistency of test results* across multiple administrations of the same or alternate forms of the test. Simply, if an examinee were to take an exam multiple times, how consistent would his or her scores be? Reliability is inversely related to measurement error—as error increases, reliability decreases. Measurement error is due to such factors as ". . . guessing, distractions in the testing situation, administration errors, content sampling, scoring errors, and fluctuations in the individual examinee's state" (Crocker & Algina, 1986, p. 106).
>
> **Validity** is *the degree of the adequacy and appropriateness of the interpretations made from assessment results with respect to a particular use.* It is concerned with the general question, "To what extent will this assessment's information or test score help me make appropriate decisions?"

The alignment of assessment to curriculum enhances consistency and strengthens the influence of academic content standards and assessment on improving teaching and learning.

2.1 Test Design

The *Dakota STEP* test assesses students' achievement of the South Dakota Content Standards. The following Content Standards documents used for the development of the *Dakota STEP* assessment are available online at http://doe.sd.gov/contentstandards/:

- *South Dakota Reading Content Standards*, approved June 2004, statewide assessments operational in spring 2005
- *South Dakota Mathematics Content Standards*, approved June 2004, statewide assessments operational in spring 2006
- *South Dakota Science Content Standards*, approved June 2005, statewide assessments operational in spring 2007

The assessment is administered in combined-content test booklets consisting of grade-specific subtests as shown in Table 2.1.

Table 2.1: Dakota STEP Subjects and Grades Tested

Test	Grade						
	3	**4**	**5**	**6**	**7**	**8**	**11**
Reading	✓	✓	✓	✓	✓	✓	✓
Mathematics	✓	✓	✓	✓	✓	✓	✓
Science	—	—	✓	—	—	✓	✓

The *Dakota STEP* assessment is composed of multiple-choice core (operational) items for each content domain and grade. All students are assessed with the same core items for each content

domain. All multiple-choice items are worth one raw score point and are the basis of student scores. Linking items (anchor items) are core items used to link the current assessment to the previous year's score scale, and are included in the count of core items.

Newly developed items are embedded within the core items to create unique test forms for each content domain and grade level. These field-test items do not count toward students' scores but are evaluated for statistical quality for potential use as core items in future test administrations by South Dakota educators and the SD DOE. Although the number of field-test items is the same across all grade levels within subjects, the distribution of items across standards will differ from form to form.

Universal Test Design

Universal Test Design is an approach to item development and test design that calls for minimizing the need for accommodations in test administration by making items accessible to the greatest number of students, including those with disabilities and non-native speakers of English. In applying these principles, item writers attempt to maximize readability, legibility, and compatibility with accommodations by avoiding wordiness and ambiguity, selecting reader-friendly constructions and terminology, and applying concept names and graphic conventions consistently. Universal test design principles are also used to make decisions about test layout and design, including, but not limited to, type size, line length, spacing, and graphics. All items, whether core (operational) or field test, are intended to have a uniform appearance and are developed and composed using the same style guidelines for items in all subjects.

Test Blueprints

The first step in the creation (or revision) of a standards-based assessment is the development of a *test blueprint*, which specifies the content standards to be assessed and the number of items to assess each standard. The underlying principle guiding the creation of test blueprints is establishing a clear relationship between the assessment and the standards. The blueprint then serves as the foundation for the entire item development and test construction process.

The number of items for each reported category should be consistent across content areas and grade levels in order to establish a rationale and coherent assessment system. The reported category can be a content standard, indicator, or goal while the number of items contributing to a student's score influences the reliability of the score. All things being equal, the fewer the number of items, the lower the reliability and stability of that score.

Test blueprints, which specify the content standards to be assessed and the number of items needed to assess each standard, were developed and approved by the SD DOE for each content domain and grade level. To provide reliability evidence of scores, a sufficient number of items addressing each content standard or indicator for which a score is to be reported ("reporting category") must be maintained. Results for reading are reported at the standard level while results for mathematics and science content domains are reported at the indicator level. The item counts within the test blueprints represent the number of core (operational) items on each subtest. The SD DOE requires a minimum of 7 items per reporting category as illustrated in the grade 3 Reading test blueprint (Table 2.2). Test blueprints for all content domains and grades are included in Appendix A.

In Table 2.2, the grade 3 Reading blueprint shows the target item counts for each of the content standards. In addition, targets have been established to include a range of items at various cognitive complexity levels with the goal of at least 50% or more of the items assessing each content standard to be at or above the cognitive complexity of that standard.

Table 2.2: Grade 3 Reading Test Blueprint

Content Standards	Bloom's Taxonomy Designation	TEST BLUEPRINT			
		Basic	**Proficient**	**Advanced**	**Total**
3.R.1.1 Decoding and word recognition skills	Application	2	3	2	**7**
3.R.1.2 Comprehension strategies	Analysis	2	3	2	**7**
3.R.1.3 Identify text organizational features and their purpose	Knowledge	2	3	2	**7**
3.R.2.1 Locate, describe, and use text structures	Application	2	3	2	**7**
3.R.2.2 Distinguish differences among various literary elements and devices	Analysis	2	3	2	**7**
3.R.3.1 Respond to ideas and attitudes expressed in literature by making personal connections	Application	2	3	2	**7**
3. R.4.1 Gather information to research a topic	Application	2	3	2	**7**
3. R.4.2 Utilize a set of directions, a model, or diagram in order to complete a project	Application	2	3	2	**7**
TOTAL		**16**	**24**	**16**	**56**

Cognitive Complexity

Cognitive complexity can be described in several different ways. The South Dakota content standards use Bloom's Taxonomy to describe the cognitive complexity for each standard. The cognitive complexity levels in Bloom's Taxonomy include: Knowledge, Comprehension, Application, Analysis, Synthesis, and Evaluation. For the purpose of alignment studies, cognitive complexity levels are defined as follows:

Low level (L) – (Bloom's Taxonomy level: **Knowledge**)
This level requires mainly recall, remembering factual information or definitions of terms, or the display of fairly routine skills. This level tends to deal with a single idea or procedure, require a display of concrete understanding, or ask for a demonstration of something learned directly from instruction.

Moderate level (M) – (Bloom's Taxonomy levels: **Comprehension** and **Application**)

This level requires more intellectual skill than those characterized as "Low", but may seem like it is something less than "High." This level may require the application of rules that are practiced extensively in the classroom, but are now applied to a new situation.

High level (H) – (Bloom's Taxonomy levels: **Analysis**, **Synthesis,** and **Evaluation**) This level involves the application of ideas and procedures to solve problems or create new understandings. The situations are not habitual or routine; they are novel for most learners. Often multiple ideas are drawn upon or a high level of abstraction needs to be dealt with.

2.2 Transition to Embedded Field-Testing

Prior to the 2008 administration of the *Dakota STEP*, new items were field tested in separate, stand-alone administrations. Beginning with the 2008 administration (and in subsequent years), field-test items were embedded within the operational items creating eight test forms for each content domain. All students are assessed with the same operational or "core" items on the test forms for each content domain, and field-test items were embedded within the core items. Field-test items do not count toward a student's score but are evaluated for statistical quality for potential use as core items in future test administrations.

Table 2.3 details the number of core and field-test items in the 2008 test forms for each content domain. The number of field-test items was the same across all grade levels within subjects although the distribution of items across standards differed based on item development targets.

Table 2.3: Dakota STEP Item and Test Form Counts by Content Domain

Content Domain		Core Items	Field Test Items	Total Items	Total Forms
Reading					
	Per form	56	20	76	1
Grades 3-8	Per grade	56	160	216	8
	Per form	40	20	60	1
Grade 11	Per grade	40	160	200	8
	Total	**376**	**840**	**1216**	**56**
Mathematics					
	Per form	84	8	92	1
Grades 3-8, 11	Per grade	84	64	148	8
	Total	**588**	**448**	**1036**	**56**
Science					
	Per form	70	7	77	1
Grades 5, 8	Per grade	70	56	126	8
	Per form	84	9	93	1
Grade 11	Per grade	84	72	156	8
	Total	**224**	**184**	**408**	**24**

2.3 Test Construction Specifications

Each *Dakota STEP* assessment is designed to ensure that the South Dakota Content Standards are validly and fairly assessed. The selection of items and assembly of each test form is guided by a set of specifications developed to ensure that test content corresponds to the purposes, objectives, and skills defined in the content standards.

Pearson assessment specialists constructed the 2008 operational *Dakota STEP* assessment following a thorough analysis of the item data as well as alignment study findings.

- The 2008 *Dakota STEP* Mathematics assessment was constructed by replacing existing standards-based items with new operational items that were field-tested in fall 2006 in order to improve the overall alignment of the assessment. New items to assess the content standards were field tested within eight test forms per grade.
- The 2008 *Dakota STEP* Science assessment was constructed by replacing existing standards-based items with new operational items that were field-tested in fall 2006 in order to improve the overall alignment of the assessment. New items to assess the content standards were field tested within eight test forms per grade.
- The 2008 *Dakota STEP* Reading assessment was an exact duplication of the 2007 operational assessment (except in grades 4, 5, and 6, one item was replaced, respectively). New items to assess the revised content standards were field tested within eight test forms per grade.

Selection of Operational Items

The following guidelines were used to select the operational items for the 2008 tests. In all cases, the statistics examined were generated after field testing.

Item Discrimination

The point-biserial correlation is the correlation between item score and total test score. Items selected for operational use discriminate between high and low-performing students. The target point-biserial correlation for the 2008 operational items was >= 0.30. Items with point-biseral values less than 0.30 were only selected for operational use if they were needed to meet the requirements of the test blueprint and approved by the SD DOE.

Differential Item Functioning (DIF)

DIF statistics examine whether an item functions differently for examinees with similar abilities across subgroups. Mantel-Haenszel DIF statistics are calculated for all items, using subgroups that have a minimal sample size of 300. In statistical analysis, items are categorized by their degree of DIF using a system developed by the Educational Testing Service (ETS): Negligible DIF (A), moderate DIF (B), and large DIF (C). It is desirable not to use items classified in category B or C unless content experts determine that flagged items are not biased and are needed for content coverage. Items that were flagged at C category were only selected for 2008 operational use if they were needed to meet the requirements of the test blueprint and approved by the SD DOE.

Reading

The standards-based core items from the 2007 assessment were re-administered in 2008 in order to field test a substantial number of new passages and items developed to assess the revised Reading Content Standards in spring 2009. Administering the same core form in 2008 as in 2007 meant that the raw score-to-scale score tables created in 2007 were also used for the 2008 Reading assessment (except grades 4, 5, and 6).

Mathematics

In order to equate the 2008 test with the 2007 test, a linking set was constructed by selecting items from each of the mathematics content indicators (reporting categories). The items selected resemble the difficulty range of the test.

Science

In order to equate the 2008 test with the 2007 test, a linking set was constructed by selecting items from each of the science content indicators (reporting categories). The items selected resemble the difficulty range of the test.

Placement of Operational Items

Keyed Response

In any particular form, keys of multiple-choice items should have similar percentages across options (ideally, 25% of 4-option items). Items with the same key should never appear more than three times consecutively. Because test-wise examinees may be aware that *C* tends to be the correct answer for difficult items, it is essential to check keys of difficult items to ensure that the percentage of *C* being the correct answer is similar to the percentage of easy items.

Items Containing Graphics

Items containing graphics should be balanced with those without graphics so that items with graphics are evenly distributed across test forms.

Selection and Placement of Field-test Items

Item Selection

Items approved at Content and Bias Review meetings were selected for field testing based on (1) the need for standards coverage and (2) the need for format variety.

Item Location

SD DOE has requested the random placement of field test items throughout the operational forms.

2.4 Item Specifications

The *Dakota STEP* subtests are constructed with multiple-choice items that require students to choose the correct answer and mark their response by filling in a bubble on their answer document. The *Dakota STEP* Item Specifications require that:

- Items appropriately measure and align with the grade-specific content standards. Items focus on what students should know and be able to do at their grade level.
- Items developed for the *Dakota STEP* are reviewed and approved by the SD Content and Bias Review committees and SD DOE prior to field testing.
- Items are drawn from the passage or stimulus in such a way that a student's previous knowledge does not impact his or her response. Items focus on skills and comprehension strategies, avoiding measurement of a student's feelings or values.
- Items are worded precisely and clearly.
- Correct answers are approximately equally distributed among A's, B's, C's, and D's.
- Response choices are approximately the same length, have the same format, and are syntactically and parallel. Students should not be able to rule out a wrong answer or identify a correct response simply by virtue of its looking or sounding different.
- Distractors are plausible although incorrect in the context of the stimulus. Distractors adopt the language and sense of the material in the stimuli so that students must think their way to the correct answer.
- The order of presentation is dictated by logic (chronologically, spatially, etc.)
- A balance of gender and active/passive roles by gender is maintained.
- To the greatest extent possible, no item or response choice clues the answer to any other item.

2.5 Passage Specifications

Pearson commissions quality reading passages from experienced writers. Passages must be written to be age-appropriate, relevant, and engaging. They must also be free of bias and sensitivity concerns, tightly focused, and well organized. In order to fulfill blueprint requirements and to maintain a grade-appropriate emphasis on various passage types, passage development reflects the approximate proportions as shown in Tables 2.4 and 2.5 below.

Table 2.4: Approximate Percentages for Passage Type

Grade	Passage Type		
	Literary	**Informational**	**Functional**
3-5	50	35	15
6-8, 11	40	35	25

Table 2.5: Passage Word Count Ranges

Grade	Informational and Literary	Functional	Poems (Maximum)	Paired Passages (Maximum)
3	300-700	300-500	150	700
4	300-700	300-500	150	700
5	400-800	300-600	200	900
6	500-900	400-700	250	900
7	500-900	400-700	250	1000
8	600-1000	500-800	400	1100
11	700-1200	600-1100	500	1200

Informational Passages

General non-fiction articles and biographies: These selections emphasize documented fact, with the primary purpose being to inform the reader. Topics include noteworthy people who are no longer living, historical and current events, and expository passages in content areas (e.g., art, music, science, history, government). Informational passages should be written so that the reader may be asked to:

- Identify major points and distinguish them from supporting details.
- Extract main ideas and indicate relevance of supporting details.
- Locate information using graphics such as charts, graphs, maps, and timelines.
- Analyze and use organizational features of text such as headings, bold print, etc.
- Analyze how text is organized (sequence, cause/effect, chronology, or categorization).
- Explain how the organization of the text supports the writer's major concepts and purposes.
- Connect concepts, issues, and information presented in text with commonly understood concepts about the world.

Paired Informational

These passages consist of a pairing of informational passages that exhibit the qualities described above. Additionally, paired passages lend themselves to items that involve comparison and/or contrast of details, ideas, issues, organization, scope, purpose, etc. Paired passages usually focus on similar events or people, or they focus on the same event or person but through a different perspective.

Informational Narrative

These passages are related from first-person point of view and involve a sequence of events. They focus on a topic and provide information, and they exhibit some of the characteristics of an informational passage, but they do so through the context of a meaningful experience that the speaker shares. For example, a speaker may share an experience about planting a garden with his or her grandparent and explain about different types of seeds and plants.

Functional Passages

These selections convey practical, everyday information. Examples include Rules, guidelines, and entry forms; Safety, assembly, or operating instructions; Memos, manuals, and handbooks; Applications, resumes, and letters, both business and personal; Print ads, including posters and flyers; Newspaper articles and letters to the editor. Functional passages should be written so that the reader may be asked to:

- Demonstrate an accurate understanding of the information.
- Explain how key aspects of the content are relevant to a reader's informational needs.
- Select information appropriate to the task and apply it logically and validly to complete the task.
- Select information and details from the text to complete the task accurately, adequately, and appropriately.
- Cite an adequate amount of information to support conclusions about the relevance and importance of the information read.
- Identify and evaluate persuasive techniques.

Paired Functional

These passages consist of a paring of functional passages that exhibit the qualities described above. Usually, these pairings consists of two advertisements for similar products, two fliers for similar activities, or a newspaper article and letter to the editor about a relevant issue. These selections require students to process and discriminate information found in "real-world" materials.

Literary Passages

Fictional Narrative

Short stories must contain a clear progression of events, believable characters, a well-developed plot and/or theme, a clear and deliberate point of view, an identifiable conflict, a climax and/or turning point, and a resolution. Fiction genres include contemporary fiction, mystery, historical fiction, science fiction, fantasy, legends, tall tales, and folk tales. Fictional narratives must be written so that the reader may be asked to:

- Understand the development of characters using details from that story to accurately report what the characters do, say, and think; what other characters say about them and what the writer says directly.
- Understand how the depiction of major and minor characters is important to a story's plot and theme, or simply what about the description of characters makes them worth remembering.
- Use an adequate amount of details from the story to describe and discuss its characters and their roles.
- Understand the author's use of symbolism and identify details that establish the symbolism.
- Describe the importance of symbolism to the story's plot and theme.
- Recognize a number of techniques and details the author has used to establish symbolism in a story.
- Identify the moods of a story by locating details the author has used to establish the mood.
- Describe the importance of the mood to the story's plot and theme.
- Recognize a number of techniques and details the author has used to establish one or more moods throughout a story.
- Identify initiating action, or conflict, in a story's plot in relation to its highest point, the climax.
- Understand how high points in a story's action builds to its climax and/or can identify the presentation of a problem and its solution or resolution as basic to the story's plot structure.
- Describe all of the significant events in a story and the sequence in which those events occur.
- Articulate a reasonable story theme.
- Explain how various elements of the story contribute to the development of its theme.
- Provide enough information to support his or her interpretation of the story's theme.
- Relate details from the story to social, cultural, or historical contexts.
- Recognize and explain the use of figurative language, imagery, etc.

Poetry

Poems must (unless the form dictates otherwise) use literary techniques such as meter, rhyme, sound and figurative language to convey emotion, experience, or ideas. Most importantly,

however, poems must have depth. A poem, for example, that just focuses on a scene in nature lacks the depth needed for assessment purposes. Instead, the same poem might focus on a bee's journey through nature in search of its hive. Every poem must have a universal theme. Examples of poetic forms include lyric, ballad, haiku, narrative, free verse, and sonnet.

Cultural Diversity

Multicultural literature refers to texts that feature storylines that are about members of racial, religious, or language micro-cultures other than Euro-American. The five most populous micro-cultures in the United States are:

- African American;
- Asian American (including Chinese, Japanese, Korean, and Vietnamese descent);
- Latino American (including Cuban Americans, Mexican Americans, Puerto Ricans, and others of Spanish descent);
- Native American (a general term referring to the many tribes of American Indians); and
- Jewish.

Culturally diverse texts

- Children who see people like themselves represented in texts derive self-esteem and pride in their own heritage.
- Children learn about people and their cultures.
- Each culture has much to teach to other cultures.
- Engagement with a certain culture can reduce students' prejudices toward micro-cultures.
- Reading about people of one's own culture facing issues/problems may help children of that same and other cultures cope with the same problems themselves.

Features of culturally diverse texts:

- Avoids racial and cultural stereotyping. Instead multi-faceted, well-rounded characters are featured. The nature of stereotyping is that it unfairly assigns a fixed image or fixed characteristics to everyone within a group, thereby denying everyone with the group the right to any individuality or choice.
- Cultural details are reasonably accurate. Regional differences make it impossible for portrayals of events, celebrations, holidays, and so forth, to be declared as "the way" something is done. Authors should be careful to avoid sweeping generalizations.

Taboo Topics

Pearson will consider accepting passages with contexts that address most topics as long as they are tastefully handled, well written, and present an interesting, real-world situation. Writers are advised, however, to avoid subject matter that would cause a selection to be deemed unacceptable by SD DOE and SD educators for any of the following reasons:

1. The topic could evoke unpleasant emotions in the test takers that are likely to hamper their ability to take the remainder of the test in the optimal frame of mind.
2. The topic is controversial among the adult population and might not be acceptable in a classroom setting.

3. The topic has been over used in tests or textbooks and is thus overly familiar and/or boring to students.
4. The topic will appear biased against (or toward) some group of people.

2.6 Item Development

It is essential that the *Dakota STEP* assessment measures the depth, breadth, and intent of the South Dakota State Content Standards for each grade level. Important information regarding student performance must be derived from the standards-based test. The items developed must adequately measure and align with the South Dakota Content Standards in order to provide a valid assessment.

The item development process begins with a thorough review of the content standards, the test specifications and blueprints, and the pool of items available for operational use by Pearson's assessment specialists. The result is a clear focus on areas in need of additional development. The "gaps," or content standards with insufficient numbers of items within the existing item pool, provide a plan for item development. A sufficient number of new items must be written to allow for attrition throughout the review and field testing process.

Once the item development plan has been reviewed and approved by the South Dakota Department of Education, item development assignments and support materials are provided to Pearson's cadre of trained, professional item writers. The item writers submit their items to Pearson's assessment specialists who conduct a thorough quality review of items using criteria such as:

- Does the item measure the standard it intends to measure?
- Does the item conform to best practices in item design?
- Is the content of the item accurate?
- Is the item unique?
- Is the language of the item clear and concise?
- Are the distractors plausible?
- Does the item have only one correct answer?
- Is the language of the item simple and concise?

The initial review is followed by an additional review in which a senior assessment specialist analyzes the item for accurate content and best testing practices. Thereafter, the items go through an editorial review to make sure that proper vocabulary, spelling, and grammar are used. Editorial specialists also correct items that do not conform to the current style for item formatting. New items are developed to stylistically match the existing assessment. There is an intentional parallelism among all items, art, and passages to include phraseology, sentence structure, and stimulus attributes. Edited items are then passed back to the lead assessment specialist, who conducts an additional review.

Items that are not acceptable are returned to the item writer with feedback and suggestions for rewriting the item. Feedback about accepted items is also frequently supplied to writers. Edits are explained and suggestions are given on how to improve future work. This feedback process allows our item writers to create higher-quality items with each new submission.

All items go through an internal review process at Pearson before they are deemed suitable for external committee reviews. This internal review phase allows the items to be refined and aligned with content standards before they are presented to South Dakota educators and the Department of Education. The additional series of reviews continues to add value to the items as they are scrutinized for alignment to the content standards and the absence of bias and stereotyping.

2.7 South Dakota Teacher Committees

One of the most important sources of evidence of validity for an assessment is the test content. How well the test items represent the emphasis of subject matter and learning processes taught and assessed in classrooms is a vital element in judging the validity of test results. For this reason, South Dakota teachers are actively involved in the item development process as well as alignment and standard setting workshops. SD DOE recruits teachers for various committee meetings based on a demographic sampling plan and nomination process. The SD DOE communicates with teachers/administrators (i.e., superintendents, principals, and curriculum directors) describing the work that will take place, including dates/times of meetings and rate of pay. Teachers/administrators then submit nomination forms for participants to the SD DOE.

The SD DOE recruits and selects committee participants based on the number of teachers needed for each of the content and grade-specific panels as well as the following criteria: geographic region of the state, district size, and teachers who have worked with various student groups including special education and limited English proficient students. Selected participants are assigned to specific grade or grade span groups based on professional experience and knowledge. Meetings are conducted under the guidance of SD DOE staff, and facilitated by subject matter experts from Pearson (e.g., content bias review, data review) or experts from the Buros Institute for Assessment Consultation and Outreach (e.g., standard setting, alignment study).

Content and Bias Review

Content and Bias review meetings are facilitated annually by Pearson assessment specialists in order to review newly developed items and reading passages prior to field testing. Participants receive training in a general session to cover the objectives and process of the review session. All items are reviewed to ensure that they are appropriate and engaging for the proposed grade level, measure the desired content standards, are clearly worded, have only one correct answer, and are of appropriate difficulty. Items and passages are also reviewed to ensure that they are free of bias and sensitivity concerns that could unfairly advantage or disadvantage (unrelated to mastery of the content) a student or group with certain personal characteristics (gender, race, ethnicity, religion, socioeconomic status, disability, or geographic region). Reviewers are asked to consider whether the subject matter and language of items or reading passages are acceptable to students, their parents, and other members of South Dakota communities.

Once general training has been completed, participants separate into their grade/grade span specific groups to begin reviewing items. Committee review books containing the items to be reviewed are distributed as secure documents to each participant. The process begins with each group participant conducting an individual review of a designated number of items (usually all items developed to assess a specific content standard or strand). Once individual reviews have been completed, the Pearson facilitator leads the group in discussion of each item and in

carefully reviewing the individual comments until the group reaches a consensus to accept, accept with edits, or reject each item. This process continues until all items have been reviewed and committee consensus has been documented and reconciled. Participants review the items in order to make recommendations as to whether each item is suitable for field testing. SD DOE then reviews the committee's recommendations for final approval of the items.

Table 2.6: 2008 Content/Bias Review Results

	Grade	Reviewed	Accepted	Accepted with Revisions	Rejected
Reading Passages	3	16	6	10	0
	4	16	5	10	1
	5	16	2	12	2
	6	16	3	13	0
	7	17	1	14	2
	8	18	5	11	2
	11	15	1	11	3
Reading Items	3	203	150	50	3
	4	213	164	47	2
	5	201	151	50	0
	6	204	163	37	4
	7	210	133	67	10
	8	200	116	76	8
	11	201	148	46	7
Math Items	3	80	24	54	2
	4	74	18	56	0
	5	80	38	42	0
	6	79	57	22	0
	7	78	44	34	0
	8	80	66	13	1
	11	86	46	38	2
Science Items	5	57	14	38	5
	8	59	36	14	9
	11	75	29	40	6

Alignment Workshops

South Dakota conducts two types of alignment studies annually. BIACO facilitates “pre-test” alignment workshops to align newly developed items to the content standards and designate the cognitive complexity levels (low, medium, and high) of items prior to field testing. The assigned content standard and cognitive complexity of each item is then captured for reference if and when the items are used on operational forms in order to fulfill the test blueprint requirements.

The findings of these "pre-test" alignment studies are also utilized to identify the strengths and weaknesses of the item pool in order to target item development efforts.

Participants receive training by BIACO consultants in a general session to cover the objectives and process of the alignment workshop. Pearson provides an overview of the item and test development process and provides content support for the grade-specific workgroups. Following the general training session, the panelists are separated into content and grade-specific groups, and are provided with the relevant core content standards; item review books, and rating forms to record their individual findings.

The panelists review a portion of the items individually, and then pull together as a group to discuss their individual judgments. The groups are tasked with reaching consensus on the content standard that each item is aligned with as well as the cognitive complexity of each item. BIACO specialists have the content standard and cognitive complexity of the items as determined by the Content and Bias Review committee. If the alignment group determines that an item is aligned to a different standard, the South Dakota Curriculum Specialist and the BIACO facilitator are available to offer explanation and guidance. The group then records their final independent decision on the group rating form.

Following the operational administration of the test, Norman Webb facilitates a "post-test" alignment study of the intact operational forms. This study intends to provide content validity evidence on the overall alignment of the operational assessment. Additional information regarding the overall alignment of the spring 2008 test forms is available in section 8.4 and Appendices O, P, and Q of this technical report.

Data Review

Data Review meetings serve as the final review of newly developed items after field testing and before use as operational items. These meetings are conducted under the guidance of SD DOE staff, and facilitated by psychometric staff and subject matter experts from Pearson. During the meeting, participants review the items based on their field test statistics in order to make recommendations as to whether the items reviewed are eligible for inclusion in future revisions of the operational test.

Following a general training session explaining the item statistics that participants will review and their relevance to the process, participants are separated into content and grade-specific groups, and the actual review of the items takes place. For each item, the committee will review the following item statistics:

- p-value (item difficulty)
- point-biserial correlation (item discrimination)
- Mantel-Haenszel differential item functioning statistics (item bias whereas minimum n-counts, say 200, per demographic group can be obtained)
- Overall student response broken down by student scores

The committee reviews the items in the light of the values of these statistics, concentrating on potential defects in items that may result in:

- inappropriate difficulty (too hard or too easy)

- non-discriminating characteristics
- differentially difficult for some demographic group(s)

Care must be taken to ensure that only items with specific and identifiable defects are rejected. Items that address appropriate content at the appropriate grade level can occasionally have item statistics that are not optimal for reasons other than defects intrinsic to the item. Such items can provide valuable information to teachers, parents, and educational administrators and so should not be rejected simply on the basis of item statistics.

Items accepted by SD DOE based on the Data Review Committee recommendations are added to the pool of items available for future operational use. Rejected items are normally discarded, however; if a rejected item is revised, it must be treated as a new item, field tested, and reviewed by a subsequent Data Review committee in order to be eligible for operational use.

Table 2.7: 2008 Data Review Results

	Grade	Items Reviewed	Accepted	Rejected	Revise & Re-Field Test
Reading	3	160	152	8	0
	4	160	157	3	0
	5	160	154	6	0
	6	160	153	7	0
	7	160	148	12	0
	8	160	145	15	0
	11	160	142	18	0
Math	3	64	63	1	0
	4	64	57	4	3
	5	64	61	0	3
	6	64	60	1	3
	7	64	48	7	9
	8	64	53	4	7
	11	64	62	2	0
Science	5	56	45	11	0
	8	56	48	8	0
	11	72	62	10	0

Standard Setting

Standard setting is conducted following the administration of a new assessment. After the operational test has been scored, statistical data from student performance are reviewed to ensure that both the items and the test as a whole meet the established test design and psychometric criteria. Standards setting committees then establish achievement level “cut score” recommendations after reviewing the operational assessment and evaluating what students must

know in order to answer each item. The cut scores represent the threshold between each level of performance—Basic, Proficient, and Advanced.

Standard setting workshops are facilitated as needed by the BIACO. The SD DOE recruits educators from the targeted subject area. Participants are presented an orientation, followed by an overview of the method to be used in the standard setting process. Following this session, participants separate into grade-level groups. Participants then review the performance level descriptors (Basic, Proficient, and Advanced) for their respective grade levels and experienced the standard-setting method using a practice test composed of relevant content and grade-level material.

Participants in the grade-specific groups then begin their Round 1 Review of the assessment. They rate each item on the test as Below Basic, Just Basic, Just Proficient, Just Advanced, and Above Advanced using specially designed forms. When all of the participants within a group complete their first round of ratings, they are provided with information about how the respective grade-level students in South Dakota actually performed on the test questions during the administration. They are also shown a cumulative percent distribution using their Round 1 cut score results that indicates the percentage of South Dakota students at that grade level who would be classified as Basic, Proficient, and Advanced. Participants are then asked to reconsider their Round 1 ratings during Round 2.

The analysis that follows the Round 2 ratings involves the computation of cut scores for each grade-specific assessment for Basic, Proficient, and Advanced achievement level descriptors. These cut points, and their respective standard errors of estimate, are used as boundary values for the policy decision for establishing cut scores for the *Dakota STEP* tests. The SD DOE then reviews and presents the recommended cut scores to the SD BOE for approval. The existing cut points for the *Dakota STEP* Reading, Mathematics, and Science assessments were established in spring 2005, 2006, and 2007 respectively. Additional information regarding translation of raw scores to scale scores is provided in Chapter 4 of this technical report.

CHAPTER 3: TEST ADMINISTRATION

The administration of the *Dakota STEP* is a shared and coordinated effort involving the SD DOE, its testing contractor, Pearson, and district and school personnel. Pearson is responsible for printing and shipping test materials to districts as well as receiving and scoring materials from districts following each test administration. Table 3.1 lists the key events and dates for the 2008 *Dakota STEP* administration.

Table 3.1: Key Events and Dates for the 2008 Dakota STEP Administration

February 11– February 14, 2008	Pretest workshops
March 5–11, 2008	Delivery of *Dakota STEP* materials
March 12–21, 2008	Deadline for requesting additional materials
March 31–April 18, 2008	*Dakota STEP* test administration
April 25, 2008	Deadline for receipt of materials from districts at the Pearson Scoring Center
June 6, 2008	Scored data file to SD DOE

The SD DOE and Pearson staff conducted four training sessions for test coordinators at locations throughout the state (Rapid City, Pierre, Aberdeen, and Sioux Falls), covering the test administration process, test security measures, and the roles/responsibilities of testing coordinators. Approximately 75% of the state's district test coordinators attended these workshops. One training session was recorded and placed on the State website for coordinators unable to attend a session in person (http://doe.sd.gov/octa/assessment/dakSTEP/index.asp). After the initial training by SD DOE and Pearson the district test coordinators provided school level training within their districts.

District-level test coordinators serve as the point of contact among the districts, schools, the DOE, and Pearson. They are responsible for receiving, verifying, and distributing all test materials to schools, as well as returning materials to Pearson for scoring. In larger districts, test coordinators designate building coordinators to oversee some of these responsibilities. They also provide training to building coordinators and teachers/examiners regarding test administration procedures and are available during testing to answer questions. Teachers/examiners administer the *Dakota STEP* to students and supervise testing sessions.

3.1 Test Security Guidelines

The *Dakota STEP* test administration must be completed in a timely manner and conducted in such a way to ensure appropriate and consistent testing conditions, as well as the secure handling of all test materials. Test security guidelines described below prohibit activities that could result in an unfair advantage to some students, misrepresentation of results, or exposure of secure test items.

Teachers/examiners administering assessments are not to provide answers to students, copy any portion of the test, or in any way contribute to test security practices that violate the Code of Professional Ethics set for South Dakota educators. The South Dakota Professional Teachers Practices and Standards Commission Administrative Rule Codes 24:08:03:01 (Obligations to Students), 24:08:03:02 (Obligations to the Public), and 24:08:03:03 (Obligations to the Profession) provide direction for educators. The Code of Ethics for professional administrators is cited in Administrative Rule 24:11:03:01:

Unethical test practices include, but are not limited to:

1. Encouraging students to be absent the day of testing.
2. Encouraging students not to do their best.
3. Not testing all students.
4. Reclassifying students solely for the purpose of avoiding state testing.
5. Failing to provide necessary accommodations during testing (if applicable).
6. Interpreting, explaining, or paraphrasing a test item.
7. Copying of the test in any way.
8. Changing or altering student responses at any time.
9. Using secure test items for instruction.

The SD DOE and Pearson require any person who handles test materials (including test coordinators, building coordinators, and teachers/examiners) to sign a test security agreement prior to the test administration stating that they have been made aware of these regulations and procedures and agree to follow them. The *Dakota STEP Test Security Agreement* and *Test Security Affidavit* are included in Appendix B.

Dakota STEP test materials must be kept in a locked secure location before, between, and after testing sessions. Upon completion of testing, all scorable documents and non-scorable test booklets/materials must be collected and returned to Pearson. Any missing documents or other potential breaches of security are to be reported to the test coordinator. If the documents are not found or if a security breach is suspected, the SD DOE must be notified utilizing the *Report of Test Irregularity Form* (Appendix B).

3.2 Test Administration

With respect to the 2008 administration, test coordinators working with building coordinators and test administrators scheduled *Dakota STEP* assessment sessions within the statewide administration period of March 31–April 18, 2008 (including any make-up sessions). Schedules had to allow time for district test coordinators to assemble and ship all scorable documents to arrive at Pearson on or before April 25, 2008.

With respect to its annual statewide assessment, the SD DOE strongly recommends that each content area of the assessment be administered on different days with stretch breaks provided to students between test sessions as noted in the *Directions for Administering* and students' test materials. The Reading, Mathematics, and Science subtests are further divided into multiple test sessions as shown in Table 3.2.

The *Dakota STEP* subtests are not timed. Approximate testing times are provided to districts and schools for planning purposes only. While the time allotted for the administration of the subtests

is adequate for most students, additional time is allotted for students to complete the subtests provided they are actively engaged in testing. Table 3.2 shows the approximate testing times for each of the *Dakota STEP* subtests.

Table 3.2: Approximate Testing Times for the Dakota STEP

Subtests and Sessions	Grade 3	Grade 4	Grade 5	Grade 6	Grade 7	Grade 8	Grade 11
Reading Session 1	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	60 minutes
Reading Session 2	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	60 minutes
Reading Session 3	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	N/A
Total Reading	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours**
Mathematics Session 1	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes
Mathematics Session 2	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes
Mathematics Session 3	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes	45 minutes
Total Mathematics	**2 hours 25 min.**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**	**2 hours 25 min**
Science Session 1			45 minutes			45 minutes	45 minutes
Science Session 2			45 minutes			45 minutes	45 minutes
Science Session 3			45 minutes			45 minutes	45 minutes
Total Science			2 hours 25 min			2 hours 25 min	2 hours 25 min
Total Testing Time	**4 hours 30 min**	**4 hours 30 min**	**6 hours 45 min.**	**4 hours 30 min**	**4 hours 30 min**	**6 hours 45 min**	**6 hours 30 min**

3.3 Assessment of Students with Disabilities

The *Individuals with Disabilities Education Act of 2004* (IDEA) requires the development of policies and procedures for the inclusion of students with disabilities in statewide assessment and, when necessary to ensure a student's full participation, the provision of testing accommodations. Individualized Education Program (IEP) must include accommodations that may be necessary in order for the student to participate in assessment. A student who is perceived to have a disability based on Section 504 of the *Rehabilitation Act of 1973* (Section 504) must also be afforded accommodations if those accommodations are part of the services provided in the student's Section 504 Plan.

State-approved assessment accommodations for students with disabilities include accommodations in presentation, response, setting, timing, and scheduling as shown in Table 3.3. Each accommodation provided during testing must be documented in the space provided on the student's answer document. Students must have ample time to learn to use instructional and assessment accommodations before the *Dakota STEP* administration. Accommodations must be documented within the student' IEP, used in day-to-day instruction, and should be in place at least 5 weeks prior to test administration.

Decisions about whether a student participates in the *Dakota STEP* assessment under the standardized conditions or participates with state-approved accommodations must be made on an individual basis by the student's IEP or Section 504 team. If it is determined that a student with a disability can participate in the *Dakota STEP* assessment with approved accommodations, the team making that decision must specifically indicate the type and extent of accommodations that will be provided. This information must be included in the student's IEP or addressed in the student's Section 504 Plan. The parent/guardian of the student must be made aware of the decision during the development of the student's IEP or Section 504 Plan. If it is determined that a student with a disability cannot participate in the *Dakota STEP* assessment with approved accommodations and the student meets the significant cognitive disability criteria, the student must be assessed utilizing the *Dakota STEP-A* (Alternate Assessment). The IEP team must document their decision in the student's IEP.

3.4 Test Accommodations

Standardization is an essential feature of educational assessments and is necessary to produce valid and reliable information about student learning. Strict adherence to guidelines detailing instructions and procedures for the administration of accommodations is necessary to ensure that the *Dakota STEP* assessment results reflect actual student learning. Once decisions have been made about providing accommodations to meet individual student needs, the logistics of providing the actual accommodations during the *Dakota STEP* administration must be planned.

It is not uncommon for members of the IEP team, most often special education teachers, to be given the responsibility for determining, arranging, coordinating, and providing assessment accommodations for all students who may need them. Thus, it is essential for all IEP team members to know and understand the requirements and consequences of statewide assessment, including the use of state-approved accommodations when necessary for a student's meaningful participation. It is important to engage the appropriate personnel to plan the logistics and provisions of assessment accommodations prior to testing. Detailed information regarding accommodations can be found in the South Dakota Accommodations Manual available at: http://doe.sd.gov/oess/specialed/forms/pdf/SDAccommodationsManual.pdf .

Table 3.3: Dakota STEP Assessment Accommodations

Reading		Mathematics		Science		Accommodation Codes	Accommodations for Special Populations
IEP/ 504	LEP	IEP/ 504	LEP	IEP/ 504	LEP		**Presentation Accommodations**
✔		✔		✔		1	Large-print test booklets and/or answer documents
✔		✔		✔		2	Visual aids (magnifiers, templates)
✔		✔		✔		3	Sign language (ASL, cued speech)
		✔				4	Abacus for visually impaired VI students
✔		✔		✔		5	Braille test booklets
✔	✔	✔	✔	✔	✔	6	Test Items read aloud, including audiotape/cd and assistive technology (does NOT include *Reading Comprehension* passages)
✔	✔	✔	✔	✔	✔	7	Repeating and/or simplifying directions
✔		✔		✔		8	Amplification equipment (hearing aid, auditory trainer)
						9	N/A - DO NOT GRID ON THE DEMOGRAPHIC INFORMATION PAGE
		✔		✔		10	Talking calculators, provided the student is tested individually or with the use of headphones
							Response Accommodations
✔		✔		✔		11	Responses marked directly in test booklet or on large-print answer document, also includes oral, sign language, Braille, and recorded responses to test items (answers must be transcribed to a scorable answer document by scribe)
✔		✔		✔		12	Large-diameter pencil, pencil grip, special pencil or pen
	✔		✔		✔	13	Use of dictionaries, word lists, glossaries
✔	✔	✔	✔	✔	✔	14	Visual organizers (i.e. templates, masks, markers, graph paper, rulers)
							Setting, Timing, and Scheduling Accommodations
✔	✔	✔	✔	✔	✔	15	Environmental modifications (i.e. special lighting, adaptive or special furniture, location with minimal distractions, noise buffers, carrels, special seating)
✔	✔	✔	✔	✔	✔	16	Small-group administration
✔	✔	✔	✔	✔	✔	17	Individual administration
✔		✔		✔		18	Home/Hospital Setting
✔	✔	✔	✔	✔	✔	19	Flexible schedules (i.e. time of day, multiple breaks, etc.)
						20	**Other (with prior approval from SD DOE)**

State-approved accommodations for the *Dakota STEP* test administration are categorized as follows and detailed in Table 3.3.

> **Presentation accommodations** allow students to access information in ways that do not require them to visually read standard print. These alternate modes of access are auditory, multi-sensory, tactile, and visual.
>
> **Response accommodations** allow students to complete activities, assignments, and assessments in different ways or to solve or organize problems using some type of assistive device or organizer.
>
> **Setting, timing, and scheduling accommodations** change the location or the conditions of the assessment setting, increase the allowable length of time to complete an assessment, and/or change the way the time is organized.

When identifying accommodations for the state assessment, it is important to review state policies and procedures in order to determine whether the use of a particular accommodation may result in the invalidation of the test (e.g., inappropriately lowering or not counting a student's score). Appropriate accommodations do not reduce learning expectations; they provide access to an assessment. However, inappropriate modifications or alterations may change, lower, or reduce learning expectations. Providing a student with such a modification during a state accountability assessment may constitute a test irregularity and may result in an investigation into the school or district's testing practices.

Some accommodations are standard for both students with disabilities and limited English proficient (LEP) students, while other accommodations are only permissible for one student classification and/or subject area. Each accommodation, numbered 1 through 20, corresponds to the "Accommodations" grid on the student demographic information page. Following the test administration, test administrators or case managers must grid the corresponding circle(s) for each accommodation provided for each content area.

3.5 Assessment of LEP Students

All identified limited English proficient (LEP) students in grades 3 through 8 and 11 must participate in the *Dakota STEP* assessment (Title I, Part A, Section 1111 of the *No Child Left Behind Act of 2001*). Academic assessment of eligible LEP students must be accomplished in English for those LEP students who have attended school in the United States for 3 or more consecutive school years. If a student has fewer than 3 consecutive school years in the United States, the student should take the assessment in the language and form most likely to yield accurate data. In South Dakota, the *Dakota STEP* is only provided in English; therefore, LEP students are provided state-approved accommodations based on their IEP Plan.

LEP students in their first year of enrollment in a school in the United States are not required to take the *Dakota STEP* Reading subtest if these students have participated in the annual *Dakota English Language Proficiency (Dakota ELP)* assessment. Participation in the *Dakota ELP* assessment will constitute participation in *Dakota STEP* Reading for purposes of determining AYP. Students who enroll for the first time in a school in the United States after the testing window for *Dakota ELP* annual progress has ended will meet participation requirements for Reading through the completion of the LEP eligibility assessment.

LEP students in their first year of enrollment in a school in the United States are required to take the *Dakota STEP* Mathematics and Science assessments, indicating participation for AYP determination. The results of the Mathematics and Science assessments for LEP students in their first year of enrollment in a United States school will not be included in the determination of AYP for the school, district, or state, even if the student meets the requirements of attendance for a full academic year.

State-approved assessment accommodations for LEP students include: Test items read aloud (in English), repeating and/or simplifying directions, word lists/glossaries, visual organizers, environmental modifications, small group/individual administrations, and flexible testing schedules as shown in Table 3.3. Each accommodation provided during testing must be documented in the space provided on the student's answer document. Test coordinators are urged to plan ahead when providing accommodations to LEP students. Since every student is different and language abilities and needs vary widely, any testing accommodation made available to one student will not necessarily be applied universally.

Prior to the administration of the *Dakota STEP* assessment, districts should determine each LEP student's need for accommodations that are most likely to yield accurate and reliable information on what the student knows and can do in the subjects tested. Such determinations should be made by LEP teams comprised of teachers, counselors, and administrators with specific knowledge of the student involved on an individual basis.

The following are general guidelines for LEP teams to consider when determining accommodations for individual students:

- The student's ability to comprehend and follow standard instructions delivered in English (whether oral or written) as compared to another language.
- The student's ability to comprehend and appropriately respond to standard test items written in English.
- The language that will best allow the student to demonstrate his or her proficiency in the skill(s) being tested.
- Timing or pacing variations that may assist in English comprehension.
- Responsive variations that may minimize English-language limitations.
- Encoding or decoding assistance, including interpreters or translators.

If it is determined that an LEP student will participate in the *Dakota STEP* assessment with accommodations, the team making that decision must specifically indicate the type and extent of accommodations that will be provided. A student's LEP team must consider the individual needs of the student in daily instructional settings as well as the additional needs that arise in a secure testing environment. Decisions should be documented in writing and maintained in the student's permanent file.

CHAPTER 4: ACHIEVEMENT LEVELS

4.1 Achievement Level Descriptors

The South Dakota Content Standards provide achievement descriptors for three levels–Basic, Proficient, and Advanced. The following general achievement descriptors are written at a broad level and are applicable to all content domains. Grade-specific achievement descriptors are documented within the South Dakota Academic Content Standards and are available online at http://doe.sd.gov/contentstandards.

Basic: A student performing at the basic level performs below expectations for that grade level. The student is able to perform some of the content standards for the grade below the level of difficulty, complexity, or fluency specified by the grade-level standards.

Proficient: A student performing at the proficient level meets expectations for that grade level. The student is able to perform the content standards for the grade at the level of difficulty, complexity, or fluency specified by the standards.

Advanced: A student performing at the advanced level exceeds expectations for that grade level. The student is able to perform the content standards for the grade at a high level of difficulty, complexity, or fluency.

A student performing at the Below Basic level is unable to perform the content standards for the grade; therefore, no description is provided for this achievement level.

4.2 Achievement Level Cut Points

The achievement level descriptors are translated into *Dakota STEP* cut points by Standard-Setting Committees. The panelists' judgments serve as empirical evidence to inform the policymaking process. Decisions regarding the final cut points are a policy decision made by the SD DOE informed by the panel's recommendations. The final cut points are then submitted to the South Dakota Board of Education for approval. The existing cut points for the *Dakota STEP* Reading, Mathematics, and Science assessments were established in spring 2005, 2006, and 2007 respectively.

4.3 Achievement Level Raw Scores (Scale Scores)

Tables 4.1, 4.2, and 4.3 provide the raw scores and corresponding scale scores for each achievement level as recommended by the Standard-Setting Committee, finalized by the SD DOE, and approved by the South Dakota Board of Education. Note that the raw score to scale score conversions were obtained based on the ability estimates, and the calibration was done using all of the students with valid test scores excluding extreme scores (i.e., zero or perfect scores).

Table 4.1 provides the raw scores and corresponding scale scores assigned to each achievement level for the spring 2008 *Dakota STEP* Reading assessment.

Table 4.1: Raw Score (Scale Score) Ranges for Dakota STEP Reading

Grade	Below Basic Raw score (Scale score)	Basic Raw score (Scale score)	Proficient Raw score (Scale score)	Advanced Raw score (Scale score)
3	0 – 3 (401 – 497)	4 – 23 (498 – 594)	24 – 44 (595 – 663)	45 – 56 (664 – 805)
4	0 – 5 (418 – 524)	6 – 23 (525 – 606)	24 – 43 (607 – 667)	44 – 56 (668 – 813)
5	0 – 5 (438 – 543)	6 – 24 (544 – 620)	25 – 43 (621 – 677)	44 – 56 (678 – 822)
6	0 – 6 (444 – 555)	7 – 26 (556 – 635)	27 – 43 (636 – 691)	44 – 56 (692 – 842)
7	0 – 4 (463 – 564)	5 – 25 (565 – 650)	26 – 44 (651 – 708)	45 – 56 (709 – 849)
8	0 – 4 (475 – 573)	5 – 26 (574 – 667)	27 – 45 (668 – 727)	46 – 56 (728 – 864)
11	0 – 5 (513 – 624)	6 – 24 (625 – 718)	25 – 35 (719 – 779)	36 – 40 (780 – 885)

Data file 5/29/07 for grades 3, 7, 8, and 11 raw score to sale score conversion.
Data file 5/19/08 for grades 4, 5, and 6 raw score to sale score conversion.

Table 4.2 provides the raw scores and corresponding scale scores assigned to each achievement level for the spring 2008 *Dakota STEP* Mathematics assessment.

Table 4.2: Raw Score (Scale Score) Ranges for Dakota STEP Mathematics

Grade	Below Basic Raw score (Scale score)	Basic Raw score (Scale score)	Proficient Raw score (Scale score)	Advanced Raw score (Scale score)
3	0 – 18 (371 – 529)	19 – 50 (530 – 599)	51 – 75 (600 – 667)	76 – 84 (668 – 793)
4	0 – 12 (406-547)	13 – 43 (548 – 617)	44 – 71 (618 – 683)	72 – 84 (684 – 824)
5	0 – 18 (422 – 581)	19 – 43 (582 – 636)	44 – 70 (637 – 698)	71 – 84 (699 – 842)
6	0 – 19 (439 – 600)	20 – 46 (601 – 660)	47 – 72 (661 – 727)	73 – 84 (728 – 864)
7	0 – 20 (455 – 618)	21 – 48 (619 – 677)	49 – 73 (678 – 741)	74 – 84 (742 – 875)
8	0 – 14 (477 – 624)	15 – 41 (625 – 686)	42 – 70 (687 – 753)	71 – 84 (754 – 897)
11	0 – 15 492 – 644)	16 – 46 (645 – 714)	47 – 72 (715 – 780)	73 – 84 (781 – 916)

Data file 5/19/08 for raw score to sale score conversion.

Table 4.3 presents the raw scores and corresponding scale scores assigned to each achievement level for the spring 2008 *Dakota STEP* Science assessment.

Table 4.3: Raw Score (Scale Score) Ranges for Dakota STEP Science

Grade	Below Basic Raw score (Scale score)	Basic Raw score (Scale score)	Proficient Raw score (Scale score)	Advanced Raw score (Scale score)
5	0 – 23 (399 – 573)	24 – 36 (574 – 604)	37 – 59 (605 – 669)	60 – 70 (670 – 802)
8	0 – 21 (398 – 568)	22 – 38 (569 – 610)	39 – 60 (611 – 674)	61 – 70 (675 – 803)
11	0 – 23 (394 – 566)	24 – 45 (567 – 609)	46 – 71 (610 – 668)	72 – 84 (669 – 808)

Data file 5/19/08 for raw score to sale score conversion.

CHAPTER 5: REPORTS

The *Dakota STEP* student answer documents are scored by Pearson immediately after the receipt of test materials from South Dakota test coordinators. The multiple-choice test questions are scored by machine.

5.1 Scores Reported

Standards-Based Scores

The final student data file was provided to the SD DOE and uploaded to a secure website. District and school personnel could create reports, graphs, and/or external data files with tools for querying, computation, and disaggregation. Examples of the standards-based Student and Roster reports are included in Appendix C.

The Student report provides a summary of individual student results by content area and reporting category.

- Raw Score (total number correct) and Max Score (total points possible) for each content area and its respective reporting categories
- Percent Correct for each content area and its respective reporting categories
- Achievement Level for each content area

The Roster report provides a list of student results for a selected group of students. The following results are presented by student for each content area:

- Total Raw Score
- Scale Score
- Achievement Level
- Number of items correct by content reporting category

The ***Scale Score*** allows for comparison of test scores across years. Whenever a new version of a test that is built to the same test blueprint is introduced, there will likely be some variations in the difficulty of items from previous versions. Scale scores control for these small variations in difficulty and allow comparisons of the achievement levels of students in different test years. Because test items change, raw scores (i.e., number or percent correct scores) will not always have the same meaning or represent the same level of proficiency. Without equating, each administration of a test with different items would lead to a new reporting scale independent of that used previously. It would still be possible to measure relative achievement, but it would not be possible to indicate growth across years for schools, districts, or the state. Chapter 6 presents more detailed information on the equating process and calculation of scale scores for the *Dakota STEP*.

The ***Performance (Achievement) Level*** is one of the four levels (Below Basic, Basic, Proficient, Advanced) described in the content standards, bound by the cut points recommended by the standard-setting committees and finalized by the SD DOE. Chapter 4 provides information regarding the establishment of cut scores and achievement levels.

5.2 Appropriate Uses of Scores

Cautions in Interpreting Scores

There are many factors to be considered when looking at test performance. First, it is possible that the student has not yet been exposed to all of the content covered by the test. More broadly, however, it is important to remember that achievement in school and on the test may be affected by one or more of these non-curricular factors:

Student/Home Factors:

The student's general health and physical condition.
The stability of the student's home environment.
The support and/or help the student is able to receive at home.
The student's age relative to other students in the grade.
The ability of the student to get along with others.
The student's school attendance record.
The student's interest in school.
The student's study and work habits.

School Factors:

The appropriateness of the level of instruction for the student.
The amount of time available for instruction.
The expectations set for the student.
The appropriateness of school settings/groupings for the student.
The appropriateness of instructional materials and methods for the student.

None of these factors invalidate the test results; the *Dakota STEP* measures achievement, regardless of the reasons and circumstances behind it. Consideration of these factors is important, however, when using test results to make judgments about the quality of a student's classroom instruction, the student's subject mastery, or when considering measures to improve a student's achievement.

The individual student report provides a snapshot of student performance. This one-page report, however, only yields achievement levels. To appropriately use the standards-based scores, the Standards-Based Report should be the driving mechanism to evaluate curriculum and individual student achievement.

CHAPTER 6: CALIBRATION, LINKING (EQUATING), AND SCALING

This chapter describes the three-step process of *calibration*, *linking*, and *scaling* used for the *Dakota STEP* assessment to transform performance on each test into a scale score. This process was carried out in 2008 for the *Dakota STEP* Reading, Mathematics, and Science assessments.

The process of *calibration*, *linking*, and *scaling* utilizes *item response theory* (IRT), which is based on the idea that the characteristics of individual items can be used in conjunction with student item responses to produce estimates of students' levels of achievement. The particular model used in calibration and linking for the *Dakota STEP* assessment is the Rasch model (Rasch, 1960).

6.1 Calibration

In calibration, students' responses to each item are analyzed to derive estimates of item difficulty and student achievement. The Rasch IRT model describes, for each item, the probability of a person with achievement level θ ($P(\theta)$) answering the item correctly. $P(\theta)$ is a function based on a student's achievement level (θ) and the difficulty of the item (δ):

$$P(\theta) = \frac{e^{(\theta-\delta)}}{1+e^{(\theta-\delta)}},$$

e is a constant equal to 2.718.

Item difficulty and student achievement are estimated using the joint maximum likelihood (JML) method by entering student responses into the WINSTEPS computer program (Linacre, 2003). The WINSTEPS program seeks the best-fitting Rasch model estimates of item difficulty and student achievement level simultaneously.

WINSTEPS provides two kinds of fit statistics, the outfit and infit statistics, which indicate how accurately or predictably the data fit the model.

Infit: an information weighted fit statistic that focuses on the overall performance of an item or person, i.e., the information-weighted average of the squared standardized deviation of observed performance from expected performance. The statistic plotted and tabled by Rasch is this mean square normalized (http://www.rasch.org/rmt/glossary.htm).

Outfit: an outlier sensitive fit statistic that picks up rare events that have occurred in an unexpected way. It is the average of the squared standardized deviations of the observed performance from the expected performance. Rasch plots and tables use the normalized unweighted mean squares so that the graphs are symmetrically centered on zero (http://www.rasch.org/rmt/glossary.htm).

The expected value of the fit statistics is 1.0. Values that are less than 1.0 indicate that observations are too predictable (i.e., data overfit the model), while values greater than 1.0 indicate unpredictability (i.e., data underfit the model).

Appendix D shows the Rasch item statistics, namely Rasch item difficulty, standard error (SE) of difficulty parameter, and infit and outfit statistics. The WINSTEPS software (Linacre, 2003) was used for the *Dakota STEP* assessment's item and ability calibrations. All students with valid scores were included in the calibration (note the WINSTEPS software excludes extreme scores in the calibration). The reason that the sample sizes in Appendix D and Tables 6.1–6.3 are different is because the actual data analyses for this technical report only included public school students with valid test scores, while all of the students with valid scores excluding extreme scores were included in the calibration.

In IRT, a test characteristic curve (TCC) represents the sum of the item characteristic curve (ICC) of each item on the test. The ICCs are calculated based on the probability of item responses for the scored items on the scale score continuum. The TCCs for the *Dakota STEP* assessment was computed this way by grade.

Test reliability in IRT can be represented by the test information function (TIF) and conditional standard error. The TIF is the sum of the item information based on all the items in the test. Higher values of test information indicate better reliability. The TIF was calculated for the *Dakota STEP* assessment for each grade. Conditional standard error, on the other hand, is the inverse of the test information. In the Rasch model (Rasch, 1960), item information is:

$$I_i(\theta) = P_i(\theta)(1 - P_i(\theta)).$$

Test information function and standard error can be written as, respectively,

$$TIF(\theta) = \sum_{i=1}^{I} I_i(\theta), \text{ and}$$

$$SE(\theta) = \frac{1}{\sqrt{TIF(\theta)}}.$$

TCC, TIF, and conditional standard error were graphed for each grade and content area. In the graphs, three lines were used to show the Basic, Proficient, and Advanced achievement levels. Appendix E displays the TCC, TIF, and conditional standard error charts for the *Dakota STEP* assessment for each of the grades.

6.2 Linking Procedure

Since all students take the same operational items within a given year, there is no need for equating within the same test year. For equating from year to year, the linking items (anchor items, equating items) are selected from the operational items used the year before. The operational items are calibrated based on the Rasch IRT model (Rasch, 1960) using the WINSTEPS computer program (Linacre, 2003). Item parameters of linking items are fixed to the values of the existing parameters (e.g., the values obtained in spring 07). The operational items that are not selected as the linking items are freed and thus are calibrated based on the data obtained in that year (e.g., spring 08).

Linking items are selected from operational items administered in the previous year that meet the following guidelines (to the greatest extent possible):

1. The number of linking items should be at least 30 percent of the total number of items in each content area (e.g., Reading, Mathematics, and Science).
2. The linking items should appear in approximately the same item sequence position (within one third of the test length) as they appeared in the previous-year's test form.
3. The linking items should represent a miniature version of the test in terms of content and statistical properties.
    - The percentage distribution of the points from linking items across different reporting categories is similar to that of the whole test.
    - Average item difficulty is similar to that of the whole test. The range of item difficulty may be narrower than the whole test because extremely difficult or extremely easy items may not be selected as linking items.
4. The linking items should have strong statistical properties.
    - Linking items should have good discrimination (e.g., point-biserial correlation > .3).
    - Infit and Outfit statistics should be close to 1.0 (e.g., within the range of 0.7 to 1.3).
5. There should not be any change in the linking item from one administration to the other in terms of wording, formatting, or any other characteristics.
6. Items that have only been field tested should not be used as linking items; for an item to be included in the linking set it must have been an operational item in the previous year. This means that all linking items have been previously calibrated as operational items.
7. Items with less desirable statistics may be used as linking items only when the requirement of the test blueprint cannot be fulfilled without these items.

In addition to meeting the above criteria, the linking items are screened for performance between years based on the visual inspection of the estimated Rasch item difficulty plots (e.g., comparison between the Rasch difficulty estimates from 2007 and 2008), and displacement values obtained from the WINSTEP software (Linacre, 2003). WINSTEPS computes the displacement value in each calibration run when an item is anchored or fixed to a specified value. Displacement is the approximation of the difference between the estimate and the statistically better estimate that would result from the best fit of data to the model (www.winsteps.com, 2005). For the *Dakota STEP* assessment, items with a displacement value larger than 0.30 are deleted from the linking item set and no more than 20% of the linking items can be dropped from the linking set.

Within this linking item selection system, each content area (i.e., Reading, Mathematics, and Science) presents some unique issues as described below.

Reading

The standards-based items from 2007 were re-administered in 2008. Administering the same core form in 2008 as in 2007 means that the raw score-to-scale score tables created in 2007 are still valid for 2008 use. However, one item was replaced because the item's statistics were not optimal in grades 4, 5, and 6, respectively. Therefore, for grades 4, 5, and 6, all the items that were the same as in 2007 were used as the linking items (no more items were deleted following the linking item screening criterion based on the WINSTEP displacement values) to calibrate the 2008 Reading test. New raw score-to-scale score tables were created for those three grades.

Grades 3, 7, 8, and 11 used the same item and ability parameter estimates from 2007; and thus the same raw score-to-scale score conversions were used for those grades.

Mathematics

In order to equate the 2008 test to the 2007 test, a linking set was constructed by selecting items from each of the mathematics content indicators (reporting categories). Twenty-eight items were selected as the linking items for the 2008 test based on the item statistics obtained in 2007 administration. Following the linking screening criteria, 2, 3, 5, 1, 0, 2, and 0 linking items were unanchored for grades 3–8, and 11, respectively.

Science

In order to equate the 2008 test to the 2007 test, a linking set was constructed by selecting items from each of the science content indicators (reporting categories). The Science assessment had 24, 24, and 28 linking items for grades 5, 8, and 11, respectively. Following the linking item screening criteria, 1, 2, and 4 linking items were not anchored for grades 5, 8, and 11, respectively.

Tables 6.1–6.2 contain summary statistics for the items that were initially selected as the linking items based on the 2007 data for the Mathematics and Science tests. Tables 6.3–6.4 present summary statistics for the items that were actually used as the final linking items to link the 2008 Mathematics and Science tests following the screening criteria. The summary item statistics listed in Tables 6.3–6.4 were from the 2008 data.

Characteristics of *Dakota STEP* Item Parameters

The *Dakota STEP* Reading and Mathematics (prior to 2008) assessments were augmented tests that included the Stanford 10 items. The Stanford 10 tests are on a vertical scale, thus the *Dakota STEP* Reading and Mathematics items were calibrated onto this vertical scale with a grade/level constant adjusted to item parameters. Science, on the other hand, is not an augmented test and is not on a vertical scale. The Stanford 10 vertical scale was originally created by administering the on-grade level and one grade level lower test to the students in Kindergarten through grade 11 (Pearson, 2002). The level constants were therefore obtained. Although from 2008, the *Dakota STEP* Mathematics became a totally customer designed test, the item difficulty parameters of the link items came from 2007 in which the Stanford 10 test level constants were applied. The reason that the item difficulty parameters in Appendix D do not center on zero is due to this added level constant for the Reading and Mathematics assessments.

Table 6.1: Mathematics Linking Item Statistics from 2007 Administration

Grade	Item Statistics	Number of Items	Mean	Standard Deviation	Minimum	Maximum
3	P-value	28	0.72	0.12	0.48	0.90
	Point-biserial	28	0.40	0.06	0.30	0.52
	Rasch difficulty	28	-0.37	0.74	-1.75	1.00
	Infit	28	1.01	0.07	0.89	1.13
	Outfit	28	1.02	0.15	0.72	1.27
4	P-value	28	0.62	0.08	0.46	0.74
	Point-biserial	28	0.42	0.06	0.31	0.55
	Rasch difficulty	28	0.66	0.40	0.00	1.46
	Infit	28	0.99	0.06	0.86	1.11
	Outfit	28	0.98	0.09	0.77	1.17
5	P-value	28	0.63	0.12	0.43	0.89
	Point-biserial	28	0.44	0.06	0.32	0.57
	Rasch difficulty	28	1.10	0.69	-0.68	2.12
	Infit	28	0.95	0.06	0.83	1.07
	Outfit	28	0.93	0.10	0.74	1.14
6	P-value	28	0.63	0.13	0.45	0.90
	Point-biserial	28	0.43	0.07	0.32	0.56
	Rasch difficulty	28	1.66	0.79	-0.21	2.64
	Infit	28	0.99	0.08	0.85	1.14
	Outfit	28	0.98	0.12	0.73	1.20
7	P-value	28	0.67	0.12	0.49	0.88
	Point-biserial	28	0.47	0.07	0.34	0.62
	Rasch difficulty	28	1.78	0.76	0.34	2.83
	Infit	28	0.95	0.09	0.77	1.09
	Outfit	28	0.91	0.15	0.64	1.19
8	P-value	28	0.58	0.12	0.36	0.84
	Point-biserial	28	0.43	0.07	0.32	0.58
	Rasch difficulty	28	2.63	0.67	1.08	3.72
	Infit	28	0.98	0.07	0.83	1.11
	Outfit	28	0.97	0.11	0.76	1.16
11	P-value	28	0.62	0.13	0.40	0.86
	Point-biserial	28	0.47	0.08	0.28	0.58
	Rasch difficulty	28	2.97	0.71	1.47	4.13
	Infit	28	0.94	0.09	0.84	1.15
	Outfit	28	0.91	0.14	0.69	1.27

Table 6.2: Science Linking Item Statistics from 2007 Administration

Grade	Item Statistics	Number of Items	Mean	Standard Deviation	Minimum	Maximum
5	P-value	24	0.65	0.14	0.35	0.81
	Point-biserial	24	0.39	0.10	0.10	0.49
	Rasch difficulty	24	0.04	0.70	-0.88	1.52
	Infit	24	0.98	0.08	0.88	1.25
	Outfit	24	0.97	0.14	0.77	1.40
8	P-value	24	0.63	0.11	0.43	0.77
	Point-biserial	24	0.41	0.07	0.30	0.51
	Rasch difficulty	24	0.08	0.57	-0.71	1.06
	Infit	24	0.99	0.08	0.88	1.11
	Outfit	24	0.98	0.12	0.77	1.16
11	P-value	28	0.64	0.12	0.42	0.85
	Point-biserial	28	0.41	0.10	0.21	0.58
	Rasch difficulty	28	-0.03	0.63	-1.30	1.07
	Infit	28	0.98	0.10	0.82	1.20
	Outfit	28	0.98	0.18	0.68	1.42

Table 6.3: Mathematics Linking Item Statistics from 2008 Administration

Grade	Item Statistics	Number of Items	Mean	Standard Deviation	Minimum	Maximum
3	P-value	26	0.71	0.11	0.50	0.86
	Point-biserial	26	0.41	0.06	0.33	0.52
	Rasch difficulty	26	-0.28	0.69	-1.52	1.00
	Infit	26	1.03	0.10	0.82	1.21
	Outfit	26	1.07	0.19	0.65	1.51
4	P-value	25	0.65	0.07	0.49	0.78
	Point-biserial	25	0.43	0.06	0.34	0.55
	Rasch difficulty	25	0.59	0.37	0.00	1.46
	Infit	25	1.01	0.08	0.86	1.12
	Outfit	25	1.00	0.11	0.81	1.15
5	P-value	23	0.63	0.13	0.42	0.88
	Point-biserial	23	0.45	0.06	0.29	0.58
	Rasch difficulty	23	1.08	0.73	-0.68	2.12
	Infit	23	0.95	0.08	0.82	1.12
	Outfit	23	0.92	0.12	0.72	1.21
6	P-value	27	0.65	0.13	0.46	0.89
	Point-biserial	27	0.43	0.07	0.31	0.56
	Rasch difficulty	27	1.64	0.79	-0.22	2.64
	Infit	27	1.00	0.09	0.86	1.16
	Outfit	27	0.99	0.14	0.72	1.28
7	P-value	28	0.70	0.13	0.51	0.91
	Point-biserial	28	0.47	0.08	0.33	0.63
	Rasch difficulty	28	1.78	0.76	0.34	2.83
	Infit	28	0.95	0.11	0.74	1.20
	Outfit	28	0.91	0.18	0.56	1.32
8	P-value	26	0.59	0.12	0.40	0.88
	Point-biserial	26	0.44	0.07	0.30	0.59
	Rasch difficulty	26	2.68	0.61	1.09	3.72
	Infit	26	1.00	0.10	0.78	1.19
	Outfit	26	1.01	0.16	0.66	1.26
11	P-value	28	0.63	0.13	0.38	0.88
	Point-biserial	28	0.47	0.09	0.30	0.60
	Rasch difficulty	28	2.97	0.71	1.48	4.13
	Infit	28	0.96	0.11	0.82	1.19
	Outfit	28	0.94	0.17	0.74	1.33

Table 6.4: Science Linking Item Statistics from 2008 Administration

Grade	Item Statistics	Number of Items	Mean	Standard Deviation	Minimum	Maximum
5	P-value	23	0.65	0.15	0.34	0.85
	Point-biserial	23	0.39	0.09	0.12	0.51
	Rasch difficulty	23	0.06	0.70	-0.88	1.52
	Infit	23	0.96	0.11	0.78	1.24
	Outfit	23	0.95	0.16	0.70	1.37
8	P-value	22	0.64	0.12	0.42	0.83
	Point-biserial	22	0.41	0.07	0.30	0.52
	Rasch difficulty	22	0.10	0.57	-0.71	1.06
	Infit	22	0.99	0.09	0.77	1.11
	Outfit	22	0.98	0.12	0.68	1.18
11	P-value	24	0.64	0.13	0.40	0.88
	Point-biserial	24	0.41	0.09	0.26	0.56
	Rasch difficulty	24	0.00	0.65	-1.30	1.07
	Infit	24	0.97	0.09	0.81	1.15
	Outfit	24	0.96	0.16	0.65	1.26

6.3 Scale Score Creation

After calibration and linking, students' ability estimates were used as scores on the θ scale. Estimates of student ability were placed on the scale score (SS) metric using the following linear transformation for each of the grades of the *Dakota STEP* Reading, Mathematics, and Science assessments, respectively.

$$SS = 35*\theta + 600$$

Raw Score (RS) to Scale Score (SS) conversion tables and IRT standard error (SE) for the 2008 *Dakota STEP* Reading, Mathematics, and Science assessments are provided in Appendix F. This IRT SE is different from the classical test theory (CTT) SEM shown in Chapter 7. The IRT SE varies depending on the individual's scale score, while the CTT SEM, based on the raw score total, remains a constant. Appendix F also shows the upper (SS+1SE) and the lower (SS-1SE) bounds for an approximate 68% confidence interval for each SS and the achievement level.

Tables 6.5–6.7 provide scale score summaries for the 2008 *Dakota STEP* Reading, Mathematics, and Science assessments. As indicated earlier, the Reading and Mathematics tests were linked onto a vertical scale which is why the mean of the scale score increased from grade to grade, while the Science assessment is not on a vertical scale, and therefore the mean scale score did not increase across grades. Table 6.8 provides the standard error at each achievement classification cut point in the scale score metric. The raw score and scale score frequency distributions for all grades and subjects are provided in Appendix G.

The Rasch item difficulty was scaled using the same linear transformation as listed above to obtain scaled item difficulty. The scaled item difficulty was then compared to the corresponding

cut points to assign items to different achievement levels. Appendix H shows scaled Rasch item difficulty parameter summary.

Table 6.5: Scale Score Summary for Dakota STEP Reading

Grade	N-count	Mean	Standard Deviation
3	8944	636.45	34.62
4	8882	649.22	34.46
5	9004	655.90	32.31
6	9035	673.10	35.69
7	9141	683.77	33.32
8	9305	693.70	29.84
11	8313	733.75	37.31

Data file 07/30/08 public schools only.

Table 6.6: Scale Score Summary for Dakota STEP Mathematics

Grade	N-count	Mean	Standard Deviation
3	8963	634.60	42.65
4	8896	650.01	38.41
5	9019	665.46	37.66
6	9043	689.58	38.99
7	9161	704.93	41.67
8	9325	715.13	40.72
11	8309	732.89	40.50

Data file 07/30/08 public schools only.

Table 6.7: Scale Score Summary for Dakota STEP Science

Grade	N-count	Mean	Standard Deviation
5	9003	630.88	31.90
8	9306	631.69	34.71
11	8310	627.03	32.96

Data file 07/30/08 public schools only.

Table 6.8: SE of SS Cut Points by Achievement Level

Grade	Achievement Level	Reading Minimum SS cut	Reading SS SE	Mathematics Minimum SS cut	Mathematics SS SE	Science Minimum SS cut	Science SS SE
3	Basic	498	19	530	10	- -	- -
	Proficient	595	11	600	9	- -	- -
	Advanced	664	12	668	14	- -	- -
4	Basic	525	16	548	11	- -	- -
	Proficient	607	10	618	8	- -	- -
	Advanced	668	12	684	12	- -	- -
5	Basic	544	16	582	10	574	9
	Proficient	621	10	637	8	605	9
	Advanced	678	12	699	10	670	12
6	Basic	556	15	601	10	- -	- -
	Proficient	636	10	661	8	- -	- -
	Advanced	692	12	728	12	- -	- -
7	Basic	565	17	619	10	- -	- -
	Proficient	651	10	678	8	- -	- -
	Advanced	709	12	742	12	- -	- -
8	Basic	574	17	625	11	569	10
	Proficient	668	10	687	8	611	9
	Advanced	728	13	754	10	675	13
11	Basic	625	16	645	11	567	9
	Proficient	719	12	715	8	610	8
	Advanced	780	19	781	11	669	11

Reading cut points were obtained in 2005, Mathematics in 2006, and Science in 2007.

CHAPTER 7: PSYCHOMETRIC CHARACTERISTICS: CLASSIC ITEM STATISTICS, RELIABILITY, AND DIF

The reliability of a test reflects the degree to which test scores are free from errors of measurement that arise from various sources. Test reliability indicates the extent to which differences in test scores reflect real differences in the construct being measured across some variation in one or more factors, such as time or specific test items used. Different coefficients can be distinguished accordingly. This chapter presents measures of reliability for the *Dakota STEP* Reading, Mathematics, and Science tests as well as measures of consistency and accuracy for classification of students into achievement levels.

The classical test theory (CTT) item statistic tables of *p*-value and point-biserial correlation for all the grades and subjects for the 2008 *Dakota STEP* are provided separately in Appendix I. Tables 7.1–7.2 presents summaries of the *p*-values, and the number and percentage of items that are classified to different ranges according to each item's *p*-value. Similarly, Tables 7.3–7.4 contains the point-biserials, and the number and percentage of items that fall into different ranges based on the point-biserial correlation coefficients. These CTT item statistics are included to document the properties of the test items.

The *p-value* is the proportion of students that answer an item correctly. A high *p*-value means an item is easy; and a low *p*-value means an item is hard. Table 7.1 shows that the average *p*-value ranges from 0.62 (grade 8) to 0.68 (grade 11) for the Reading test; from 0.64 (grades 8 and 11) to 0.75 (grade 3) for the Mathematics assessment; and from 0.63 (grade 11) to 0.66 (grade 5) for the Science test. The item *p*-value of the Reading test ranges from 0.16 to 0.96. It is from 0.25 to 0.95 for the Mathematics test; and ranges from 0.14 to 0.96 for the Science assessment. Table 7.2 indicates that majority of the items (over 90%) have the *p*-value in the range of 0.2 to 0.9 while a few items have high (>= 0.9) or low (< 0.1) item difficulty.

The *point-biserial correlation* is an index of the association between item score and total test score. It shows the ability of an item to discriminate between low- and high-performing students. An item with a high point-biserial correlation discriminates the low- and the high- performing students better than an item with a low point-biserial correlation. Table 7.3 contains the summary statistics of the point-biserial correlation coefficients, while Table 7.4 shows the number and percentage of items falling into different ranges. The average point-biserial correlation coefficient ranges from 0.36 to 0.40, from 0.40 to 0.43, and from 0.36 to 0.39 for the Reading, Mathematics, and Science assessments, respectively. The item point-biserial correlation ranges from 0.06 to 0.60, 0.06 to 0.62, and 0.10 to 0.55 for the Reading, Mathematics, and Science tests, respectively. Table 7.4 shows that there is one item with the point-biserial value less than 0.10 for each of the subjects. Fourteen percent to 29% of the items have point-biserial values in the 0.1 to 0.3 range for the Reading test. The percentage of the items with point-biserial values in the 0.1 to 0.3 range for the Mathematics and Science tests ranges from 5% to 13%, and 17% to 26%, respectively. The majority of the items yield a point-biserial value larger than 0.3. Specifically, these items range from 71% to 88%, 87% to 95%, and 73% to 83% for the Reading, Mathematics, and Science assessments, respectively.

Table 7.1: Reading, Mathematics, and Science Item P-Value Summary

Test	Grade	Mean	Standard Deviation	Minimum	Q1[1]	Median	Q3[2]	Maximum
Reading	**3**	0.65	0.16	0.29	0.52	0.65	0.77	0.94
	4	0.66	0.15	0.29	0.55	0.66	0.77	0.96
	5	0.64	0.13	0.25	0.60	0.64	0.75	0.92
	6	0.66	0.18	0.16	0.51	0.71	0.82	0.92
	7	0.64	0.14	0.36	0.54	0.62	0.75	0.91
	8	0.62	0.14	0.29	0.52	0.65	0.73	0.96
	11	0.68	0.17	0.26	0.57	0.71	0.83	0.90
Mathematics	**3**	0.75	0.13	0.42	0.64	0.77	0.86	0.95
	4	0.67	0.14	0.36	0.58	0.69	0.78	0.94
	5	0.66	0.15	0.34	0.55	0.65	0.78	0.95
	6	0.68	0.16	0.28	0.58	0.70	0.83	0.94
	7	0.69	0.14	0.36	0.59	0.70	0.79	0.92
	8	0.64	0.16	0.29	0.54	0.65	0.75	0.91
	11	0.64	0.16	0.25	0.50	0.64	0.76	0.95
Science	**5**	0.66	0.15	0.31	0.56	0.71	0.78	0.91
	8	0.65	0.15	0.36	0.53	0.66	0.78	0.94
	11	0.63	0.14	0.35	0.52	0.65	0.75	0.96

[1] Q1 is the first quartile.
[2] Q3 is the third quartile.
Data file 07/30/08 public schools only.

Table 7.2: Reading, Mathematics, and Science Item P-Value Classification

Reading		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
***P*-value < 0.1**	No. of Items	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0
0.1 <= P-value < 0.2	No. of Items	0	0	0	1	0	0	0
	%	0	0	0	2	0	0	0
0.2 <= *P*-value < 0.5	No. of Items	12	8	7	13	11	11	6
	%	21	14	13	23	20	20	15
0.5 <= *P*-value < 0.7	No. of Items	23	25	32	12	25	28	14
	%	41	45	57	21	45	50	35
0.7 <= *P*-value < 0.9	No. of Items	17	20	16	29	18	16	17
	%	30	36	29	52	32	29	43
***P*-value >= 0.9**	No. of Items	4	3	1	1	2	1	3
	%	7	5	2	2	4	3	8
Mathematics		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
***P*-value < 0.1**	No. of Items	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0
0.1 <= *P*-value < 0.2	No. of Items	0	0	0	0	0	0	0
	%	0	0	0	0	0	0	0
0.2 <= *P*-value < 0.5	No. of Items	3	14	14	13	10	16	20
	%	4	17	17	15	12	19	24
0.5 <= *P*-value < 0.7	No. of Items	24	29	35	29	32	37	33
	%	29	35	42	35	38	44	39
0.7 <= *P*-value < 0.9	No. of Items	50	40	32	39	37	30	28
	%	60	48	38	46	44	36	33
***P*-value >= 0.9**	No. of Items	7	1	3	3	5	1	3
	%	8	1	4	4	6	1	4
Science		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
***P*-value < 0.1**	No. of Items	- -	- -	0	- -	- -	0	0
	%	- -	- -	0	- -	- -	0	0
0.1 <= *P*-value < 0.2	No. of Items	- -	- -	0	- -	- -	0	0
	%	- -	- -	0	- -	- -	0	0
0.2 <= *P*-value < 0.5	No. of Items	- -	- -	10	- -	- -	14	19
	%	- -	- -	14	- -	- -	20	23
0.5 <= *P*-value < 0.7	No. of Items	- -	- -	24	- -	- -	28	38
	%	- -	- -	34	- -	- -	40	45
0.7 <= *P*-value < 0.9	No. of Items	- -	- -	33	- -	- -	25	26
	%	- -	- -	47	- -	- -	36	31
***P*-value >= 0.9**	No. of Items	- -	- -	3	- -	- -	3	1
	%	- -	- -	4	- -	- -	4	1

Data file 07/30/08 public schools only.

Table 7.3: Reading, Mathematics, and Science Item Point-Biserial Summary

Test	Grade	Mean	Standard Deviation	Minimum	Q1[1]	Median	Q3[2]	Maximum
Reading	3	0.38	0.09	0.17	0.32	0.38	0.45	0.55
	4	0.38	0.09	0.19	0.32	0.40	0.46	0.53
	5	0.37	0.08	0.15	0.33	0.38	0.43	0.53
	6	0.40	0.10	0.06	0.35	0.41	0.48	0.60
	7	0.38	0.08	0.22	0.32	0.38	0.44	0.53
	8	0.36	0.11	0.10	0.29	0.37	0.44	0.54
	11	0.40	0.08	0.23	0.34	0.40	0.46	0.52
Mathematics	3	0.42	0.07	0.23	0.37	0.42	0.47	0.54
	4	0.41	0.08	0.20	0.36	0.41	0.47	0.57
	5	0.40	0.08	0.16	0.34	0.42	0.46	0.57
	6	0.41	0.08	0.06	0.35	0.42	0.47	0.56
	7	0.43	0.09	0.20	0.38	0.43	0.48	0.61
	8	0.42	0.09	0.12	0.37	0.42	0.50	0.59
	11	0.42	0.09	0.13	0.36	0.42	0.49	0.62
Science	5	0.36	0.09	0.10	0.30	0.37	0.43	0.55
	8	0.39	0.07	0.24	0.33	0.39	0.44	0.54
	11	0.38	0.09	0.11	0.32	0.38	0.45	0.55

[1] Q1 is the first quartile.
[2] Q3 is the third quartile.
Data file 07/30/08 public schools only.

Table 7.4: Reading, Mathematics, and Science Item Point-Biserial Classification

Reading		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
Point-Biserial < 0.1	No. of Items	0	0	0	1	0	0	0
	%	0	0	0	2	0	0	0
0.1 <= Point-Biserial < 0.3	No. of Items	10	13	9	9	8	16	5
	%	18	23	16	16	14	29	12
Point-Biserial >= 0.3	No. of Items	46	43	47	46	48	40	35
	%	82	77	84	82	86	71	88
Mathematics		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
Point-Biserial < 0.1	No. of Items	0	0	0	1	0	0	0
	%	0	0	0	1	0	0	0
0.1 <= Point-Biserial < 0.3	No. of Items	4	7	11	6	8	5	6
	%	5	8	13	7	10	6	7
Point-Biserial >= 0.3	No. of Items	80	77	73	77	76	79	78
	%	95	92	87	92	90	94	93
Science		**Grade**						
		3	**4**	**5**	**6**	**7**	**8**	**11**
Point-Biserial < 0.1	No. of Items	- -	- -	1	- -	- -	0	0
	%	- -	- -	1	- -	- -	0	0
0.1 <= Point-Biserial < 0.3	No. of Items	- -	- -	18	- -	- -	12	17
	%	- -	- -	26	- -	- -	17	20
Point-Biserial >= 0.3	No. of Items	- -	- -	51	- -	- -	58	67
	%	- -	- -	73	- -	- -	83	80

Data file 07/30/08 public schools only.

Differential item functioning (DIF) refers to the difference in difficulty of an item between focal and reference groups after matching on total test score. For *Dakota STEP*, the Mantel-Haenszel approach for DIF was used and the evaluation of DIF severity follows the classification rules commonly referred to as the "ETS DIF Classification Rules" (Zieky, 1993). DIF classifications include A, B, and C, where A represents negligible DIF, B represents moderate DIF and C represents large DIF.

For multiple-choice items, the Mantel-Haenszel Delta DIF (MH D-DIF) statistic is used to identify items that exhibit varying degrees of DIF at a significance level of 0.05.

- Items are classified in category A if MH D-DIF is not statistically different from zero or the magnitude of the MH D-DIF values is less than one delta unit in absolute value.
- Items are classified in category C if the MH D-DIF absolute value exceeds 1.5 and is statistically significantly greater than 1.0.
- All other items are classified in category B.

The DIF analysis for the *Dakota STEP* was conducted for Male versus Female, White versus American Indian, Non-IEP versus IEP, and not eligible for Free or Reduced Priced Lunch versus Free or eligible for Reduced Priced Lunch group comparisons. The DIF analyses for individual items within each domain are presented in Appendix J. Summary results of the DIF analyses for each content domain are presented in Appendix K. Due to an insufficient number of examinees in certain subgroups (i.e., Black, Hispanic, Asian, LEP, and Migrant Status), these subgroups were not included in DIF analysis. In general, most of the items in the 2008 *Dakota STEP* tests had DIF flag of A, while a few items were classified into the B DIF category and occasionally one or two items had a C flag (see Appendix K). The B or C DIF flagged items were reviewed by content experts and no apparent reasons of flagging were discovered. Those items were used in the 2008 operational test to fulfill the test blueprint requirements.

Test-level CTT-based statistics (raw score means and standard deviations, KR20, and standard error), item counts, and examinee counts are provided in Appendix L for both the entire population of public school students and subgroups by:

1. Gender
2. Economic Status
3. IEP Status
4. LEP Status
5. Migrant Status
6. Race (Asian, Black, Hispanic, Native American, Pacific Islander, and White).

7.1 Reliability and Standard Error of Measurement of Raw Scores

Reliability indices for the 2008 *Dakota STEP* assessment were computed using KR20:

$$KR_{20} = \frac{k}{k-1}\left(1 - \frac{\sum_i (pq)_i}{\hat{\sigma}_X^2}\right)$$

k is the number of items in the test, pq is the variance of the ith item, and $\hat{\sigma}_X^2$ is the total test variance.

The overall standard error of measurement (SEM) for raw scores was computed using the formula:

$$SEM = SD\sqrt{1 - reliability}$$

SD stands for standard deviation of the total test.

The CTT SEM represents the uncertainty related to the raw score (RS), which is a constant across all raw scores. It is the standard deviation of the error score contained in the RS. Under the CTT assumptions, RS ± 1.96*SEM can be used as a 95% confidence interval for the true score for a specific examinee.

Tables 7.5–7.7 provide reliability estimates and the CTT SEM information for the *Dakota STEP* Reading, Mathematics, and Science tests. These estimates, based on raw scores, were calculated for the total set of items. The range of the raw score CTT reliabilities of the *Dakota STEP*

Reading assessment is from 0.86 to 0.90. For the Mathematics assessment, the CTT reliabilities range from 0.94 to 0.95. The Science CTT reliabilities range from 0.90 to 0.93. Mathematics has higher reliabilities than Reading across all grades.

The raw score analysis summary by subgroups is also provided in Appendix L. Note that the subgroups are presented by gender, IEP, LEP, Eligibility for Free or Reduced Priced Lunch, Migrant status, and race/ethnicity (Asian, Black, Hispanic, American Indian, Pacific Islander, and White). The statistics in the summary include: Number of students tested, number of students with valid scores, number of items, raw score maximum (max), raw score minimum (min), raw score mean, raw score standard deviation (SD), KR20 reliability, and classical test theory standard error of measurement (SEM). Appendix M contains the raw score analysis by score reporting category.

7.2 Consistency and Accuracy of Achievement Level

Using the scale score achievement level cut points, students were classified into one of four achievement levels—Below Basic, Basic, Proficient, or Advanced. Table 7.8 shows the percentage of students at different achievement levels for 2008 *Dakota STEP* Reading, Mathematics, and Science assessments.

Livingston and Lewis's method (1995) was applied to derive measures of the decision accuracy and consistency of the classifications. According to Livingston and Lewis, accuracy is "the extent to which the actual classifications of the test-takers agree with those that would be made on the basis of their true score, if their true scores could somehow be known." Consistency is "the agreement between classifications based on two non-overlapping, equally difficult forms of the test" (1995, p.180).

In addition, Livingston and Lewis point out that accuracy estimates depend on the level of "agreement between classifications based on an observable variable (scores on . . . a test) and classifications based on an unobservable variable (the test-takers' true scores)" (1995, p.189). Since these true scores are not available, Livingston and Lewis provide a method for estimating the true score distribution using a four-parameter beta function. Consistency is estimated using actual test response data to create two (artificial) parallel half forms of the test and comparing classifications on those alternate forms.

The estimates of the decision accuracy and decision consistency of the 2008 *Dakota STEP* assessment with respect to the cut points for Proficient or above versus Basic or below are provided in Table 7.9 for both Reading, Mathematics, and Science.

Table 7.5: Reading Assessment Reliability and CTT SEM

Grade	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
3	56	8944	36.32	9.47	3	56	0.89	3.15
4	56	8882	36.86	9.55	0	56	0.89	3.15
5	56	9004	36.11	9.45	0	56	0.88	3.23
6	56	9035	37.14	9.63	5	56	0.90	3.05
7	56	9141	35.90	9.71	1	56	0.89	3.21
8	56	9305	34.89	9.17	0	54	0.87	3.28
11	40	8313	27.12	6.78	1	40	0.86	2.58

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Data file 07/30/08 public schools only.

Table 7.6: Mathematics Assessment Reliability and CTT SEM

Grade	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
3	84	8963	62.58	14.42	0	84	0.94	3.49
4	84	8896	56.62	15.21	0	84	0.94	3.76
5	84	9019	55.37	14.95	0	84	0.94	3.81
6	84	9043	57.42	14.71	3	84	0.94	3.69
7	84	9161	58.20	15.71	10	84	0.95	3.66
8	84	9325	53.48	16.02	4	84	0.94	3.81
11	84	8309	53.46	16.02	0	84	0.94	3.79

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Data file 07/30/08 public schools only.

Table 7.7: Science Assessment Reliability and CTT SEM

Grade	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
5	70	9003	46.39	11.20	8	70	0.90	3.53
8	70	9306	45.84	12.04	1	70	0.92	3.52
11	84	8310	53.00	14.55	1	84	0.93	3.95

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Data file 07/30/08 public schools only.

Table 7.8: Percentage of Students at Each Achievement Level

			Percentage			
Test	**Grade**	**N-Count**	**Below Basic**	**Basic**	**Proficient**	**Advanced**
Reading	**3**	8944	0	11	66	22
	4	8882	0	11	61	29
	5	9004	0	14	62	25
	6	9035	0	16	54	30
	7	9141	0	17	62	21
	8	9305	0	20	68	12
	11	8313	0	32	59	9
Mathematics	**3**	8963	0	20	61	19
	4	8896	0	21	61	18
	5	9019	0	23	59	18
	6	9043	0	23	60	16
	7	9161	1	25	56	18
	8	9325	0	25	59	17
	11	8309	0	34	53	13
Science	**5**	9003	3	17	69	11
	8	9306	3	24	62	10
	11	8310	2	28	61	9

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Table 7.9: Estimated Consistency and Accuracy for Proficient Decisions (Percentage)

	Reading		Mathematics		Science	
Grade	**Accuracy**	**Consistency**	**Accuracy**	**Consistency**	**Accuracy**	**Consistency**
3	95	93	95	93	- -	- -
4	95	93	95	93	- -	- -
5	94	92	94	92	93	91
6	95	93	94	92	- -	- -
7	94	91	95	93	- -	- -
8	93	90	94	92	93	90
11	90	85	94	91	93	90

Data file 07/30/08 public schools only.

For Reading, the accuracy of the decision to classify the students into Proficient or above versus Basic or below ranges from 90% to 95% across all grades; the consistency of the decision ranges from 85% to 93%. For Mathematics, the accuracy of the decision to classify the students into Proficient or above versus Basic or below ranges from 94% to 95%; the consistency of the decision ranges from 91% to 93%. For Science, the accuracy of the decision to classify the students into Proficient or above versus Basic or below is about 93%; the consistency of the decision ranges from 90% to 91%.

CHAPTER 8: PSYCHOMETRIC CHARACTERISTIC: VALIDITY

Validity refers to the adequacy and appropriateness of the interpretations made from assessments with regard to test scores. Of all the essential characteristics of a good test, none surpasses validity. If a test score is not valid for the purpose used, it has little or no value. Validity is specific. That is, a test score may be valid for one purpose and not others.

Some key aspects of validity are as follows:

- Validity is concerned with the general question, "To what extent will this assessment information or test score help me make appropriate decisions?"
- Validity refers to the decisions that are made from assessment information, not the assessment approach or test itself. It is not appropriate to say, "This assessment information is valid" unless you also say for what decisions or groups it is valid. Keep in mind that assessment information validity for one decision or group of students is not necessarily valid for others.
- Validity is a matter of degree; it does not exist on an all-or-nothing basis. Think of assessment validity in terms of categories: Highly valid, moderately valid, and invalid.
- Validity involves an overall evaluative judgment. It requires an evaluation of the degree to which interpretations and uses of assessment results are justified by supporting evidence. Educators also must consider assessment results in terms of the consequences of those interpretations and uses.

Test score validity refers to the degree that a test measures what it is intended to measure. Evidence that supports a test score's validity is gathered from different aspects and through different methods. The most recognized aspects are content and construct validity evidence. Content related evidence of validity refers to how well a test covers the content of interest. The process does not involve any statistical computation. Instead, it examines the correspondence between test blueprints that describe the intended content and test items. Construct related evidence of validity is comprised of an integrated argument based on theory and empirical data. Empirical data often include analyses of the internal relationships of test components to one another and analyses of the extent to which examinees engage in response processes in solving items that are related to the target domain and not to irrelevant factors.

8.1 Content Related Evidence of Validity

Evidence of content validity for the *Dakota STEP* assessment has been provided in Chapter 2, which contains descriptions of the item development and test construction process. In addition, alignment analyses are conducted to verify that the standards-based items of the assessment are aligned with the content standards for each corresponding subject and grade level.

BIACO conducts "pre-test" alignment workshops annually to review the alignment of new items with the content standards and cognitive complexity designations. The standard and cognitive complexity of each item is then captured for reference if and when the items are used on the operational forms. The criteria for alignment include:

- *Balance of Representation*: The alignment criterion for Balance of Representation is that items should be distributed among all of the standards at least to some degree.

- *Range of Knowledge*: The alignment criterion for Range of Knowledge is that 50% of the standards have to have at least one related assessment item.
- *Depth of Knowledge*: The alignment criterion for Depth of Knowledge is that at least 50% of the items corresponding to a standard have to be at or above the cognitive complexity of the standard. .

The findings of the alignment studies are utilized to identify the strengths and weaknesses of the South Dakota pool of items in order to focus item development efforts and construct operational test forms that are aligned with the content standards and cognitive complexity designations. Item Bank Alignment information is presented in Appendix N.

"Post-alignment" workshops and/or analysis of items selected for operational use provide an alignment profile of the intact core forms as they are administered. An alignment process, the web-based software known as the Web Alignment Tool (WAT) developed by the contractor, Norman L. Webb, is utilized for this analysis (http://www.wcer.wisc.edu/wat/index.aspx). The WAT was developed under the direction of Norman Webb at the Wisconsin Center for Education Research in cooperation with the Council of Chief School Officers (CCSSO) and funded by the National Science Foundation and the United States Department of Education (USDE). This process has been used to analyze curriculum standards and assessments in over 20 states to meet or to prepare to meet Title I compliance as required by the USDE. The complete alignment reports for the 2008 *Dakota STEP* assessment are provided in Appendices O-Q. These reports describe the overall alignment of each assessment form with the South Dakota Content Standards.

Reading Alignment

The 2008 *Dakota STEP* Reading assessment was the same as the 2007 tests in grades 3, 7, 8, and 11 while the other grades had one item replaced from the 2007 tests. The objective of the alignment analysis work completed by BIACO was to match items evaluated in previous alignment studies to the operational items selected for the 2008 *Dakota STEP* Reading assessment and evaluate how well these items matched the state standards in terms of content and cognitive complexity. Specifically, the 2008 *Dakota STEP* Reading assessment was evaluated in order to determine if it contained sufficient items to support decisions made at each reporting category.

Overall, the results of the BIACO alignment analyses suggest that the 2008 *Dakota STEP* Reading assessment aligned with South Dakota's content standards in terms of Balance of Representation, Range of Knowledge, Depth of Knowledge, and Categorical Concurrence. Due to the revision of the Reading Content Standards, the 2007 operational assessment was repeated in 2008. New operational forms to assess the new standards will be administered in 2009. Items for the new forms were field tested in spring 2008. Prior to the construction of the forms, these items were reviewed for alignment and cognitive complexity as well as statistical characteristics in order to select operational items that satisfy revised test blueprint requirements.

Norman Webb conducted an alignment study of the spring 2008 intact Reading test utilizing the WAT. The complete alignment report is included in Appendix O of this technical report. Results of the study suggest that the alignment for each of the assessments with the South Dakota Reading Standards for grades 3-8 and 11 was either acceptable or in need of slight improvement

to attain full alignment. The alignment was acceptable for grades 4, 5, 7, and 8 and in need of slight improvement for grades 3, 6, and 11. The main alignment issue was that the assessments did not have a sufficient number of items (N=6) that mapped to each of the four indicators to meet the criteria for categorical concurrence. This was particularly true for Indicator R.3 (Respond to Diverse Works) in grades 3-6 and 8. Reviewers did find an increased number of items that mapped to Indicator R.3 with an increase in grade. Indicator R.4 (Retrieve, Analyze and Synthesize) in grade 11 also had fewer than six items. All of the grades 7 Indicators had at least six items.

The other alignment issue for a few indicators was that the items did not match the complexity of the standards. One indicator for five of the seven assessments did not have at least 50% of the items at or above the DOK level of the corresponding standards. In particular, items corresponding to Indicator R.2 and R.4 on the grade 11 assessment were low. The range and balance were met for each indicator across all grades.

Overall, from one to seven items on the assessments would need to be added or replaced to have full alignment. Reviewers did find items in need of more work that were indicated by source-of-challenge comments or in their notes. As noted previously, items to assess the revised Reading content standards were field tested in spring 2008 and will be utilized to construct new operational forms in 2009.

Mathematics Alignment

The 2008 *Dakota STEP* Mathematics assessment was constructed utilizing items reviewed by South Dakota educators participating in alignment studies facilitated by BIACO that were conducted in the spring of 2005, spring of 2006, and the fall of 2006. The objective of the alignment analysis work completed by BIACO was to match items evaluated in previous alignment studies to the operational items selected for the 2008 *Dakota STEP* Mathematics assessment and evaluate how well these items matched the state standards in terms of content and cognitive complexity.

The results of the BIACO alignment analyses suggest that the 2008 *Dakota STEP* Mathematics assessment aligned with South Dakota's content standards in terms of Balance of Representation, Range of Knowledge, Depth of Knowledge, and Categorical Concurrence. Across grade levels, the alignment criteria were fully or partially met. For cases where the requirements were not fully met, values tended to be just below the decision threshold. The results of the alignment study will be utilized to target new item development for the spring 2009 operational assessment.

Norman Webb conducted an alignment study of the spring 2008 intact Mathematics test utilizing the WAT. The complete alignment report is included in Appendix P of this technical report. Results of the study suggest that the alignment between the mathematics assessment and standards was found to be at least acceptable for all seven grades. The grade 8 assessment and standards were fully aligned. The seven assessments, each with 84 items, had over six items for each of the five mathematics strands, enough to have an acceptable level for the Categorical Concurrence criterion for each strand for each grade. Range also was acceptable for all strands for all seven grades. For most assessments reviewers found at least one item for each of the approximately 20 underlying standards. The main alignment issue was a weak Depth-of-

Knowledge Consistency criterion for one or two strands for a grade. On six of the seven assessments fewer than 50% of the items had a DOK level that was the same or higher than the DOK level of the assigned standard for one or two strands. From one to three items would need to be replaced to remove this weakness in DOK. There were also balance weaknesses, but these were associated with a weakness in DOK or where the overemphasis of a standard was considered more a matter of preference than a major alignment issue.

Overall, only one to three items would need to be replaced on six of the assessments to attain full alignment between the assessments and the standards (see the summary table below). As such, the alignment was considered acceptable for all grades. Reviewers did make a number of comments on how individual items could be improved. Reviewers felt the assessments were too long and the emphasis for some grades was missed place while some important topics were not assessed.

Science Alignment

In October 2006, BIACO conducted an alignment study for the *Dakota STEP* Science assessment, reviewing all new items that were field tested in fall 2006. The primary task for the alignment study participants was to evaluate how well those items matched the *Dakota STEP* Science Content Standards in terms of content and cognitive complexity. The results of the fall 2006 alignment study as well as empirical data from field testing were utilized to construct the spring 2008 operational assessment.

Norman Webb conducted an alignment study of the spring 2008 intact Science test utilizing the WAT. The complete alignment report is included in Appendix Q of this technical report. Results of the study suggest that the alignment between the South Dakota science standards and assessments varied by grade. The grade 5 science standards and the assessment were acceptably aligned, requiring the replacement of only two items to attain full alignment. The main alignment issue for grade 5 was an absence of assessment items that targeted Strand 5.1 (Nature of Science). The alignment of the grade 8 science standards and the assessment required major improvement, with 13 items needing replacement to attain full alignment. Similarly, the grade 11 science standards and the assessment needed major improvement with 14 items requiring replacement for full alignment. For both grades 8 and 11, the assessment items were not as complex as the expectations in the standards. Although the proportion of the standards judged to have a DOK level 3 increased across the grades, the level of complexity of the assessment items remained fairly constant, with essentially all of the items given a DOK level 1 or 2. Aside from the DOK inconsistency, the tests for grades 8 and 11 were judged to have items that covered the content expected by the standards, with a good range of standards covered, and a good balance in the representation of those standards.

8.2 Construct Related Evidence of Validity

Internal Structure

The purpose of studying the internal structure of a test is to evaluate the extent to which test components, including subtests and items, relate to one another in theoretically or logically meaningful ways. Methods that are used to provide evidence of the internal structure of a test are usually associated with correlations.

Table 8.1 reports the correlation matrices among the *Dakota STEP* Reading, Mathematics, and Science assessments. The correlations between Reading and Mathematics ranges from .73 in grade 11 to .81 in grade 3, while the correlation between Reading and Science ranges from .80 in grade 11 to .81 in grades 5 and 8, and the correlation of Mathematics and Science is from .77 in grade 5 to .80 in grade 11.

Table 8.1: Correlation Among Dakota STEP Assessments

Grade	Test	Reading	Mathematics	Science
3	**Reading**	1.00	.81	- -
	Mathematics		1.00	- -
4	**Reading**	1.00	.79	- -
	Mathematics		1.00	- -
5	**Reading**	1.00	.77	.81
	Mathematics		1.00	.77
	Science			1.00
6	**Reading**	1.00	.78	- -
	Mathematics		1.00	- -
7	**Reading**	1.00	.76	- -
	Mathematics		1.00	- -
8	**Reading**	1.00	.75	.81
	Mathematics		1.00	.79
	Science			1.00
11	**Reading**	1.00	.73	.80
	Mathematics		1.00	.80
	Science			1.00

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Dimensionality is a unique aspect of construct validity. Investigation is necessary when item response theory (IRT) is used because IRT models assume that a test measures predominantly one dimension. Although it is generally agreed that unidimensionality is a matter of degree rather than an absolute situation, there is no consensus on what defines dimensionality or on how to evaluate it. Approaches that evaluate dimensionality can be categorized into answer patterns, reliability, components and factor analysis, and latent traits. The approach consisting of component or factor analysis is the most popular method for evaluation of dimensionality (Hattie, 1985; Abedi, 1997).

Principal component analysis (PCA) was used with the *Dakota STEP* Reading, Mathematics, and Science assessments for each grade to discover how many principal components were included in each of the assessments. PCA is a data reduction method. This reduction is achieved by finding the combinations of the items to produce principal components (i.e., eigenvectors). The PCA was used to explore the dimensionality of each of the *Dakota STEP* assessment for each grade.

Lord (1980) stated that if the ratio of the first to the second eigenvalue is large and the second eigenvalue is close to other eigenvalues, the test is essentially unidimensional. Divgi (1980)

expanded Lord's idea and created an index by considering the pattern of the first three eigenvalues. The Divgi Index examines the ratio of the difference of the first and second eigenvalues over the difference of the second and third eigenvalues. A large ratio indicates a greater difference between the first and second eigenvalues, thus creating an essentially unidimensional tendency.

The results of the principal component analysis shown in Tables 8.2–8.3 and Figures 8.1–8.3 indicate that the *Dakota STEP* Reading, Mathematics, and Science assessments are each essentially unidimensional**.**

Table 8.2: First Ten Eigenvalues Obtained from the PCA

	Reading		Mathematics		Science	
Grade	**Number**	**Eigenvalue**	**Number**	**Eigenvalue**	**Number**	**Eigenvalue**
3	1	14.372	1	27.390	- -	- -
	2	1.677	2	2.223	- -	- -
	3	1.375	3	2.053	- -	- -
	4	1.274	4	1.639	- -	- -
	5	1.230	5	1.484	- -	- -
	6	1.155	6	1.437	- -	- -
	7	1.142	7	1.272	- -	- -
	8	1.073	8	1.187	- -	- -
	9	1.030	9	1.147	- -	- -
	10	1.016	10	1.056	- -	- -
4	1	14.709	1	24.679	- -	- -
	2	1.627	2	2.171	- -	- -
	3	1.313	3	1.657	- -	- -
	4	1.145	4	1.517	- -	- -
	5	1.140	5	1.444	- -	- -
	6	1.077	6	1.362	- -	- -
	7	1.065	7	1.215	- -	- -
	8	1.037	8	1.146	- -	- -
	9	1.022	9	1.105	- -	- -
	10	0.996	10	1.074	- -	- -
5	1	13.284	1	23.752	1	16.352
	2	1.538	2	2.386	2	2.011
	3	1.262	3	1.854	3	1.423
	4	1.205	4	1.615	4	1.340
	5	1.127	5	1.444	5	1.261
	6	1.095	6	1.311	6	1.251
	7	1.061	7	1.235	7	1.142
	8	1.048	8	1.136	8	1.132
	9	1.041	9	1.106	9	1.111
	10	1.008	10	1.059	10	1.084

	Reading		Mathematics		Science	
Grade	**Number**	**Eigenvalue**	**Number**	**Eigenvalue**	**Number**	**Eigenvalue**
6	1	16.519	1	25.445	- -	- -
	2	1.810	2	2.540	- -	- -
	3	1.379	3	1.858	- -	- -
	4	1.287	4	1.467	- -	- -
	5	1.202	5	1.384	- -	- -
	6	1.120	6	1.298	- -	- -
	7	1.096	7	1.230	- -	- -
	8	1.070	8	1.209	- -	- -
	9	1.010	9	1.113	- -	- -
	10	0.959	10	1.067	- -	- -
7	1	14.355	1	28.000	- -	- -
	2	1.418	2	2.181	- -	- -
	3	1.277	3	1.750	- -	- -
	4	1.174	4	1.431	- -	- -
	5	1.119	5	1.182	- -	- -
	6	1.062	6	1.136	- -	- -
	7	1.032	7	1.122	- -	- -
	8	1.018	8	1.063	- -	- -
	9	1.010	9	1.038	- -	- -
	10	0.975	10	1.018	- -	- -
8	1	12.683	1	26.064	1	18.351
	2	1.644	2	3.139	2	1.812
	3	1.273	3	1.954	3	1.466
	4	1.163	4	1.577	4	1.261
	5	1.143	5	1.346	5	1.194
	6	1.116	6	1.228	6	1.102
	7	1.071	7	1.136	7	1.089
	8	1.061	8	1.115	8	1.057
	9	1.042	9	1.053	9	1.016
	10	1.030	10	1.023	10	1.014
11	1	11.205	1	26.815	1	21.051
	2	1.668	2	2.934	2	2.186
	3	1.184	3	1.876	3	1.573
	4	1.113	4	1.406	4	1.355
	5	1.079	5	1.261	5	1.268
	6	1.024	6	1.147	6	1.211
	7	0.995	7	1.117	7	1.139
	8	0.950	8	1.105	8	1.126
	9	0.940	9	1.049	9	1.111
	10	0.913	10	1.009	10	1.077

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Table 8.3: Variance Explained by the First Three Principal Components

		Principal Component		
Test	**Grade**	**1**	**2**	**3**
Reading	3	14.37	1.68	1.37
	4	14.71	1.63	1.31
	5	13.28	1.54	1.26
	6	16.52	1.81	1.38
	7	14.36	1.42	1.28
	8	12.68	1.64	1.27
	11	11.20	1.67	1.18
Mathematics	3	27.39	2.22	2.05
	4	24.68	2.17	1.66
	5	23.75	2.39	1.85
	6	25.44	2.54	1.86
	7	28.00	2.18	1.75
	8	26.06	3.14	1.95
	11	26.81	2.93	1.88
Science	5	16.35	2.01	1.42
	8	18.35	1.81	1.47
	11	21.05	2.19	1.57

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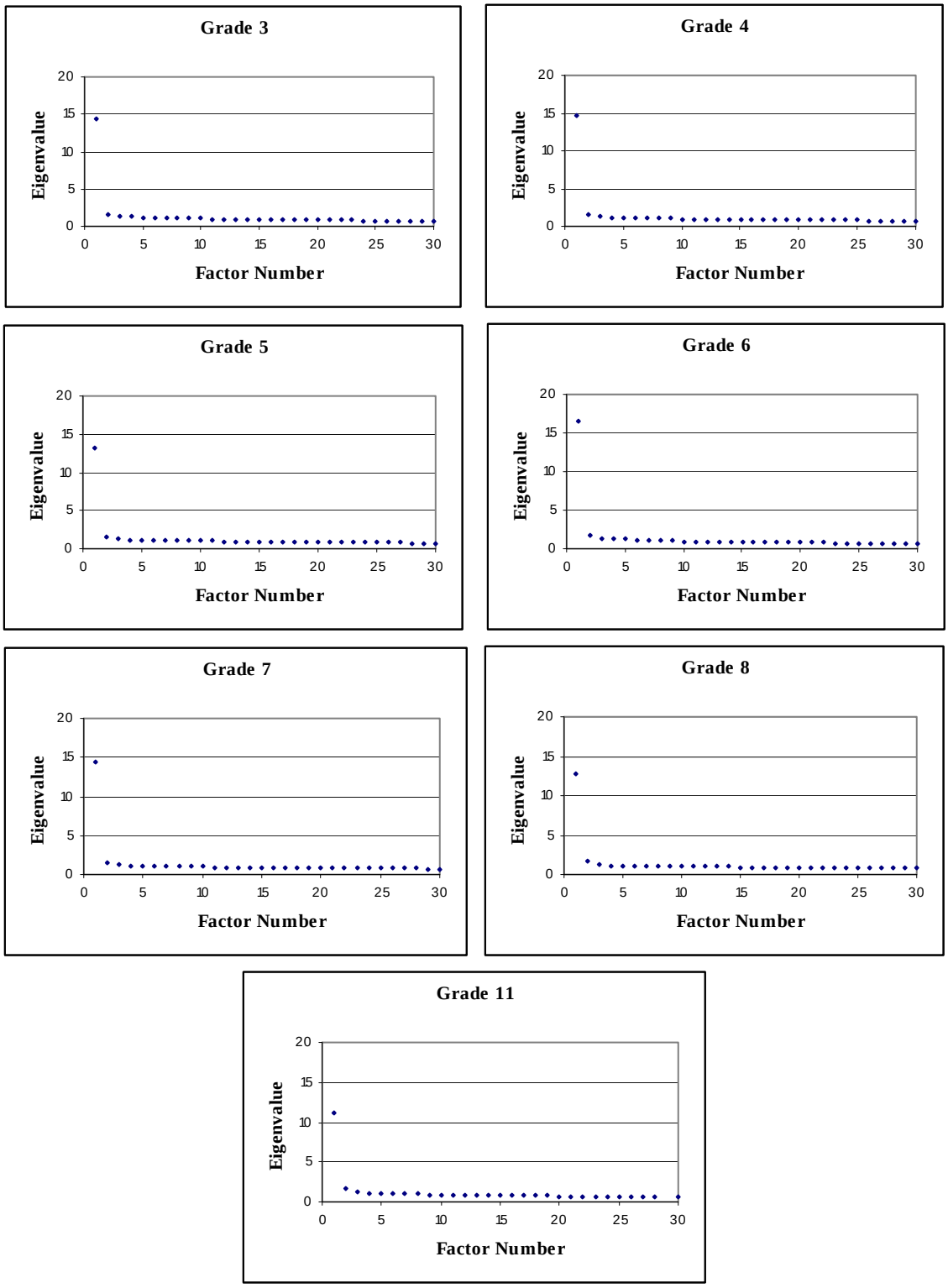
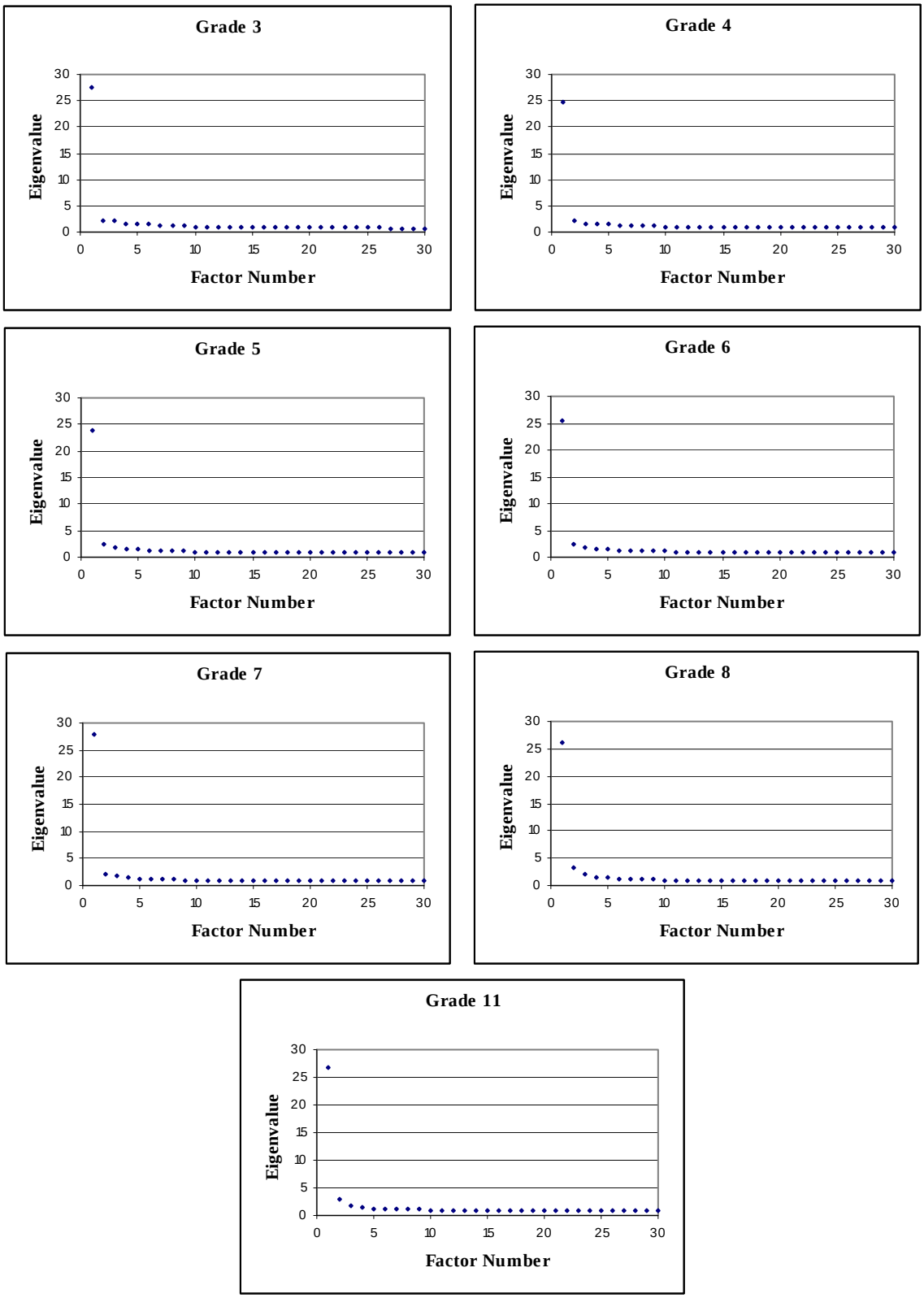
Figure 8.1: Reading Assessment PCA Scree Plot



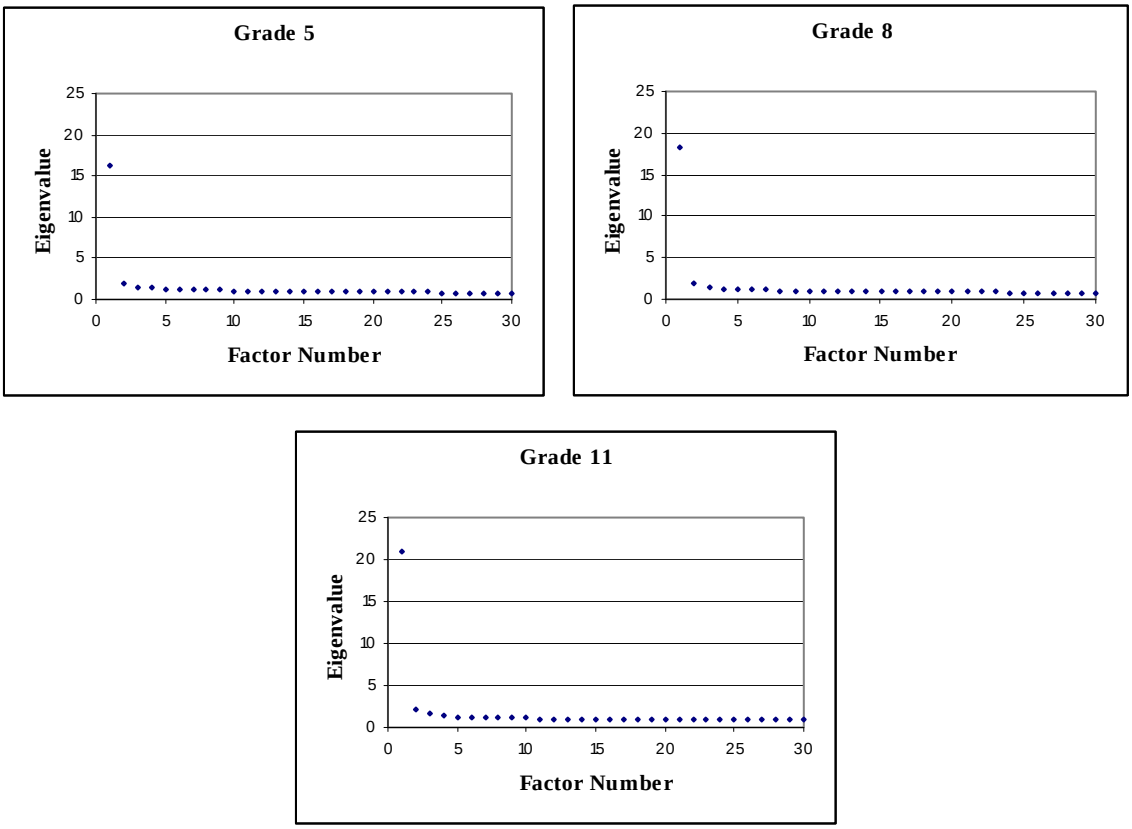
Data file 07/30/08 public schools only.

Figure 8.2: Mathematics Assessment PCA Scree Plot



Data file 07/30/08 public schools only.

Figure 8.3: Science Assessment PCA Scree Plot



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CHAPTER 9: QUALITY CONTROL PROCEDURES

9.1 Quality Control for Item Development and Test Construction

The processes and guidelines used in test and item development described in Chapter 2, Item Development and Test Construction, were designed to ensure that the resulting items met specific criteria for content and format and serve as the primary means of controlling the quality of items. Three additional quality control measures for items and test forms are described below.

Pearson Item Review

Before Pearson submits any item to a review committee or the SD DOE, a lead assessment specialist within the content area (outside of the project) reviews each item for content accuracy and adherence to item format guidelines. If any inconsistencies or errors are found, the reviewer works with the assessment specialist assigned to the project to refine the items. This ensures that mistakes are identified and corrected before items are reviewed in committee.

Final Form Review

After the test forms have been approved by the SD DOE, Pearson conducts a final form review of test forms, pull lists, and test maps (scoring keys) to identify any remaining errors that would render an item invalid. Senior-level assessment specialists (outside of the project) review each test form for errors in content, alignment, and form building. If errors are found, the reviewer notifies the appropriate content lead on the project for resolution.

Publishing Review

Pearson's Publishing Quality Assurance group is responsible for performing final editorial checks of test materials prior to their release for printing. These checks include performing a cold read, taking the test, and cross-checking interrelated documents (i.e., test booklets, answer documents, and *Directions for Administering*) for accuracy, consistency, and functionality. Once all issues have been addressed, the Quality Assurance group provides final authorization to print test materials.

9.2 Quality Control for the Receipt of Non-Scannable Documents

Pearson's Scoring Center has established a precise check-in procedure for the receipt of non-scannable documents, which include test materials other than answer documents, such as used and unused student test booklets (except grade 3 booklets, which are scannable), *Directions for Administering*, and Mathematics reference sheets and rulers. At the time of receipt, the number of non-scannable documents received from schools is compared to the expected receipts based on the materials delivered to the schools. The materials that can be reused are placed back into stock. The materials that cannot be reused are destroyed by shredding. Prior to shredding any non-scannable materials, a manual check of all materials is performed to ensure that no scannable documents are destroyed.

9.3 Quality Control for Data Preparation

The Scoring Center uses a check-in procedure for answer documents similar to the one used for non-scannable documents described above. At the time of receipt, the number of answer

documents received from schools is compared to the expected receipts as indicated by the enrollment data for each school to determine that all shipments have been received. In addition, answer documents are checked to determine that no unusual circumstances exist (i.e., ink marks, water damage, paper tears, etc.) and that the documents have been correctly assembled. This is the *receiving edit*. If all specified conditions have been met, the order will be entered into a document-tracking computer program, the SCORFLOW Management System, to show that it has arrived and met all conditions necessary for processing. If an order has not met conditions for processing, it will be placed on *alert status*. Most alerts are capable of being resolved by Pearson's Alert Hotline, which works directly with the concerned school or district. Certain designated alert conditions will be reported to Pearson's Program Management team for resolution. As soon as an order's alert has been resolved, the order will be cleared for processing and placed in the SCORFLOW Management System. Alerts not resolved after three attempts by Pearson will result in scores for the concerned school/district being invalidated.

9.4 Quality Control in Document Tracking

Boxes containing all scannable documents are labeled with unique tracking bar codes to identify and track each box throughout the scanning process. The labels are then logged on scan logs, which list the ID number of each box scanned, the count of scanned documents in each, the name of the scan program used, the name of the scanner operator, and the date and time of scanning. The scan boxes are stored in sequential order on storage shelves in a secure warehouse.

In addition to the ID number for each box, the scanners are programmed to assign a unique number to each student answer document within a box, resulting in a "scan/batch" number, which can be used to verify the processing of all batches and to find a particular student record for editing and verification if needed. The number is printed on the edge of each scanned sheet as it runs through the scanner.

A complete listing of all scan boxes will be generated periodically and used by the Program Manager to ensure that all material received was scanned. These same lists will be used by the data processing staff for file verification during the editing and scoring process.

9.5 Quality Control in Editing and Data Input

All computer software used in editing, scoring, and merging is double-checked through a process called parallel processing, which compares the output from two different programs created by two different people. If the results of both programs are the same, the data are expected to be correct. Care is taken to derive the programs independently without sharing misassumptions or formulas, which may be in error. When the data from the two different programs are not identical, then both programmers examine their programs, the input, and the output to establish the source of the difference. Once the error is detected, the programs are run in parallel again and the output is checked one more time to verify that other errors were not introduced into the process.

Extensive editing steps are used to check all questionable scanned records for multiple marks, poor erasures, and incomplete data. Multiple marks are recorded in scanning as an asterisk (*) in the data file, which can then be flagged for further editing either in data correction or during the editing phase of the data file. Poor erasures can be detected through the scanner application,

which records the total number of erasures (discriminations made by the scanner during the resolution of each bubble). This data may be analyzed further and the actual answer documents can be pulled for further verification. Generally, these types of analyses can be done to detect inconsistencies.

The scanner programs are designed to detect incorrect test forms, document pages out of order, incomplete data fields (if desired), foreign materials, excessive light marks that may indicate miscalibration, and other important errors that may affect the validity and integrity of the scanning. Operators are trained to respond to the error messages and to alert a manager if necessary.

Incomplete data are detected through the use of data rules. The data rules determine if the test is complete or, if incomplete, whether the student record should be invalidated. Additionally, the data rules check for valid ranges, generally in demographic fields such as birth date, student ID, and grade. Data rules are used to establish the merging procedure for the demographic data from the pre-ID file submitted by the district versus the demographic data that may be scanned from the student document. If demographic data exists from both sources, the data rules establish which data to use.

Routines run in the editing phase also check for completeness of data files to prevent any data from being dropped, erased, or not included. Although scan logs and editing logs should prevent an undetected loss of data records, a complete listing of all student counts by school and LEA is done and checked against the counts from the school Scoring Services Identification (SSID) sheet submitted by the school and also against the original enrollment file (to check for reasonableness).

In order to safeguard against the mishandling of data files during the editing phase, all original scan files are archived and the editing staff work only with a copy of the file. Only the lead programming staff has access to the original data files. This step also ensures that in the event of an editing error, original data can be recovered rapidly. At every step, hard copies of the problem records (called “error listings”) are generated and maintained and only after correction are the changes merged back into the work files.

Editing logs are maintained in which detailed information about each editing step is recorded. Results of the duplicate records check, the pre-code merge, the error listings, and error resolutions are entered in these logs. These editing logs track the movement of the scan files in the editing system. Complete and accurate edit checks on questionable answer documents are performed after scanning.

9.6 Quality Control in Scoring and Reporting

Scoring

To verify the accuracy of item scoring, a mock set of test materials with known data is created and scored for each form of the test. This mock set of materials is known as a test deck. The scoring output from the test deck is checked using an *item analysis report* that records both the frequency of the scores by item distractor and the point-biserial correlations. These two statistics

are analyzed to verify that the proper scoring keys are being used and that the scoring programs are properly assigned the correct response for each key. Results of these analyses are provided to Pearson for a second analysis and for retaining as documentation of the process.

During the actual scoring process, the scoring keys are rechecked by running the item analysis report again on the first early sets of data for each form (approximately the first 500–1,000 records per form).

The *scoring output file* is formatted in such a way as to retain all information about the student responses, not just whether the student responded correctly or incorrectly, providing data with which additional analyses and checks can be done. The item information includes a code if the item is correct (the key retains the distractor information) and the actual distractor value for the student response if incorrect.

Reporting

When the system has determined that a school's anticipated documents have been edited and scanned, data for that order are run through the scoring program and the appropriate reports are produced. The printouts of a sufficient number of reports are examined to verify the validity and completeness of the data. It is important to note that table data, scoring algorithms, and reporting programs have already been verified as accurate in the quality control software, data have been verified as correct through the post-edit program, and tracking enrollment counts have been updated to reflect actual student counts. Printed reports for each school are grouped together for assembly and packaging.

As each school's reports are assembled in pre-mailing, shipments are inspected to verify that they include all reports ordered. All possible problem situations have specific procedures to be followed for resolution. In addition to these control procedures in the pre-packaging phase, there are complete monitoring controls of the packaging process.

GLOSSARY OF TERMS

Achievement Levels (see Performance Levels)

Accommodations–special testing conditions and methods allowed for certain students, primarily those with disabilities or with limited English proficiency

Adequate Yearly Progress (AYP)–set of accountability measures for states, districts, and schools contained in the *No Child Left Behind Act of 2001* (NCLB*)* covering student achievement, based on each state's academic content and student achievement standards and statewide assessments

Alignment Study–analysis of the degree to which test items address the indicators and standards contained in the State Content Standards

Balance of Representation–the alignment criterion for Balance of Representation is that items should be distributed among all of the standards at least to some degree.

Bias–advantage or disadvantage conferred upon groups of students because of certain personal characteristics (such as gender, race, ethnicity, religion, socioeconomic status, disability, or geographic region), unrelated to mastery of the content

Blueprints–recommendations and guidelines for the construction of the *Dakota STEP*, the development of items that specify the indicators and standards to be covered, and the number of items per standard or indicator for each. The number of items per indicator or standard must be sufficient to provide psychometrically reliable and valid measures of student achievement of them.

Calibration–the process of estimating the difficulty of each item on a test and the achievement levels of students who took the test. For the *Dakota STEP*, calibration is accomplished using the Joint Maximum Likelihood (JML) estimation method.

Categorical Concurrence–the alignment criterion for Categorical Concurrence is that at least six items measuring content from each standard are present.

Classical Test Theory (CTT)–a set of theories and methods based on the idea that an observed test score is the result of the test-taker's true score and a quantifiable degree of error. Although the *Dakota STEP* is scored using Item Response Theory (IRT), CTT statistics are nevertheless calculated as a means of quality control.

Content Area (Content Domain)–the information or skills contained in an area of study. The content areas (or subject areas) assessed on the *Dakota STEP* are Reading, Mathematics, and Science.

Criterion-Referenced Test (CRT)–an assessment in which an individual's performance is compared to a specific learning objective or achievement standard and not to the performance of other students. Criterion-referenced tests assess how well students perform on specific goals or standards rather than how their performance compares to a norm group of students.

Cut Score (Cut point)–a score that marks the threshold between Achievement Levels on the *Dakota STEP* (Below Basic, Basic, Proficient, Advanced). Cut Scores are established by the Department of Education, based on recommendations of a standard-setting committee.

Depth of Knowledge–the alignment criterion for Depth of Knowledge is that at least 50% of the items corresponding to a standard have to be at or above the cognitive complexity of the standard.

Differential Item Functioning (DIF)–used to identify gender and ethnic bias. Items with DIF exhibit differences in scores between groups that cannot be explained by differences between those groups in overall achievement. DIF is investigated using the Mantel-Haenszel method.

Domain (see Content Area)

Equating (see Linking)

Field Testing–the process of testing newly developed items before they are used as operational items to assess student performance

Goal–a level of content specification used in South Dakota's State Content Standards, more specific than Domains but more general than Indicators

Indicator–a level of content specification used in South Dakota's State Content Standards, more specific than Goals but more general than Standards

Individual Education Plan (IEP)–describes special education services provided. IEP also specifies the testing accommodations a student needs for classroom instruction and assessments.

Item–any test question or task for which a score point is awarded; a stem or stimuli and responses for which a score or set of scores is to be recorded

Item Response Theory (IRT)–a set of psychometric theories and methods based on the idea that a person's true level of ability can be estimated by examining the characteristics of items on a test and the test-takers' responses to them. IRT is widely used in large-scale testing because of the flexibility it provides in test construction and scoring.

Joint Maximum Likelihood (JML) Estimation–the method of item calibration used for the *Dakota STEP*, whereby the difficulty of each item and the achievement of each student are estimated simultaneously

Linking (Equating)–the process of placing student test scores on a scale that allows comparisons of tests from one year to scores from another year in which different test questions were used. For the *Dakota STEP*, the Stanford 10 items used as CRT items across test years are used to link test scores.

Mean *p*-value–the average of the *p*-values for all items in a cluster, subtest, or domain total

Mean Scale Score–the average of Scale Scores earned by a group taking a given subtest or domain total

NCLB–the *No Child Left Behind Act of 2001*

***No Child Left Behind Act of 2001* (NCLB)**–the 2001 reauthorization of the *Elementary and Secondary Education Act* of 1965 (ESEA). NCLB requires each state to adopt challenging academic content and achievement standards for all public school students and to implement a set of high-quality assessments to measure *Adequate Yearly Progress* toward meeting these standards.

Operational Items–items that count toward a student's score; "live" items (compare to field test items)

***p*-value**–the percentage of a group of students answering a test question correctly

Performance Levels (Achievement Levels, Proficiency Levels)–levels of achievement on the *Dakota STEP* that correspond to the four levels of achievement described in general terms in the State Content Standards: Below Basic, Basic, Proficient, and Advanced. Performance levels are bound by Cut Scores on the *Dakota STEP* score scale.

Point-biserial Correlation–measures the correlation between students' success on an item and their success on the test as a whole

Proficiency Levels (see Performance Levels)

Range of Knowledge–the alignment criterion for Range of Knowledge is that 50% of the standards have to have at least one related assessment item.

Rasch Model–a one-parameter IRT model used in calibrating and linking *Dakota STEP* CRT scores

Raw Score–the sum of the items each student answers correctly

Reliability–desired characteristic of a test; achieved when measurement error is minimized

Reporting Categories–the levels of content specification from the State Content Standards–content *domain* (subject), *goal*, *indicator*, and *standard*–for which test results can be reported

Scale Score (SS)–a standard score derived from the Raw Score through a process of calibrating, linking (equating), and scaling. Scale scores allow comparisons of achievement across different versions (years) of a test. *Dakota STEP* scores are placed on the Stanford 10 score scale.

Scaling–the process of placing scores resulting from calibrating and linking on the scale used for reporting scores, the Stanford 10 scale

Scoring Service Identification Sheet (SSID or Header Sheet)–completed by test coordinators and/or teachers/examiners after testing is complete. SSIDs must accompany answer documents that are sent to the Pearson Scoring Center. The placement of this form determines whether score reports are generated by classroom or by grade within each school.

Section 504–special classification of students as defined in Section 504 of the Rehabilitation Act of 1973. Testing accommodations are permitted for students who meet the Section 504 criteria.

Standard–a statement of what students should know and be able to do. A standard is more specific than a Goal or Indicator.

Standard Deviation–a measure of the variability in a group of scores

Standard Error of Measurement (SEM)–the standard deviation of the error score contained in the Raw Score, representing the uncertainty related to it

TCH–*Test Coordinator's Handbook*

Validity–desired characteristic of a test; achieved when the test actually measures what it is intended to measure

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APPENDIX A: Test Blueprints

Reading Test Blueprints

	Reading Content Standards	Bloom's Taxonomy Designation	TEST BLUEPRINT			
			B	P	A	Total
Grade 3	3.R.1.1 Decoding and word recognition skills	Application	2	3	2	**7**
	3.R.1.2 Comprehension strategies	Analysis	2	3	2	**7**
	3.R.1.3 Identify text organizational features and their purpose	Knowledge	2	3	2	**7**
	3.R.2.1 Locate, describe, and use text structures	Application	2	3	2	**7**
	3.R.2.2 Distinguish differences among various literary elements and devices	Analysis	2	3	2	**7**
	3.R.3.1 Respond to ideas and attitudes expressed in literature by making personal connections	Application	2	3	2	**7**
	3. R.4.1 Gather information to research a topic.	Application	2	3	2	**7**
	3. R.4.2 Utilize a set of directions, a model, or diagram in order to complete a project.	Application	2	3	2	**7**
	TOTAL		**16**	**24**	**16**	**56**
Grade 4	4. R.1.1 Students are able to apply knowledge of complex word patterns to determine meaning of unfamiliar words.	Application	2	3	2	7
	4. R.1.2 Students are able to apply strategies to construct meaning from grade-level text.	Analysis	2	3	2	7
	4. R.1.3 Students are able to use organizational features of fiction and informational text to activate prior knowledge and to make predictions about text.	Application	2	3	2	7
	4. R.2.1 Students are able to identify text structures and the specific text that demonstrates that form of organization.	Knowledge	2	3	2	7
	4. R.2.2 Students are able to compare and contrast various literary elements and the use of literary devices.	Analysis	2	3	2	7
	4. R.3.1 Students are able to compare the use of fact and fiction in historical and contemporary realistic fiction.	Analysis	2	3	2	7
	4. R.4.1 Students are able to gather and organize information for study and research purposes.	Application	2	3	2	7
	4. R.4.2 Students are able to use text features and graphic features to categorize information and to gain meaning from informational materials.	Application	2	3	2	7
	TOTAL		**16**	**24**	**16**	**56**
Grade 5	5. R.1.1 Students are able to use knowledge of word categories and word parts to determine meaning of unknown words.	Application	2	3	2	7
	5. R.1.2 Students are able to apply comprehension strategies to construct meaning from literary and content area text.	Application	2	3	2	7
	5. R.1.3 Students are able to analyze organizational features to determine important ideas in fiction and informational text.	Analysis	2	3	2	7
	5. R.2.1 Students are able to determine the organizational structure of various texts in order to facilitate comprehension.	Analysis	2	3	2	7
	5. R.2.2 Students are able to recognize the importance of literary elements and literary devices, and consider how they affect the message.	Comprehension	2	3	2	7
	5. R.3.1 Students are able to question and compare literary selections from the perspective of various cultures and time periods.	Application	2	3	2	7
	5. R.4.1 Students are able to locate and determine the importance of information for use in study and research.	Application	2	3	2	7
	5. R.4.2 Students are able to use information from a variety of formats to make inferences and report conclusions.	Application	2	3	2	7
	TOTAL		**16**	**24**	**16**	**56**

	Reading Content Standards	Bloom's Taxonomy Designation	TEST BLUEPRINT			
			B	P	A	Total
Grade 6	6. R.1.1 Students are able to use context to understand words with multiple meanings.	Application	2	3	2	**7**
	6. R.1.2. Students are able to use direct and implied meaning to understand text.	Application	2	3	2	**7**
	6. R.2.1 Students are able to use the text structures and patterns in various literary texts to create meaning.	Application	2	3	2	**7**
	6. R.2.2 Students are able to describe types of figurative language.	Analysis	2	3	2	**7**
	6. R.3.1 Students are able to explain how literature can be used to better understand other time periods and events.	Application	2	3	2	**7**
	6. R.4.1 Students are able to use reference sources to retrieve information.	Application	2	3	2	**7**
	6. R.4.2 Students are able to compare and contrast information on one topic contained in several sources.	Analysis	2	3	2	**7**
	6. R.4.3 Students are able to determine the quality of material in informational texts.	Analysis	2	3	2	**7**
	TOTAL		**16**	**24**	**16**	**56**
Grade 7	7. R.1.1 Students are able to understand how word choice affects meaning.	Application	2	3	2	**7**
	7. R.1.2 Students are able to use inferences to extend meaning beyond literal understanding of text.	Application	2	3	2	**7**
	7. R.2.1 Students are able to describe how authors use literary elements to create meaning.	Application	2	3	2	**7**
	7. R.2.2 Students are able to describe how authors use literary devices to create meaning.	Application	2	3	2	**7**
	7. R.3.1 Students are able to connect historical and cultural influences in literary selections to construct meaning.	Analysis	2	3	2	**7**
	7. R.4.1 Students are able to distinguish which reference sources will provide the best information for the assigned task.	Application	2	3	2	**7**
	7. R.4.2 Students are able to analyze and organize information from various sources.	Evaluation	2	3	2	**7**
	7. R.4.3 Students are able to evaluate the accuracy and credibility of information about a topic contained in multiple sources.	Evaluation	2	3	2	**7**
	TOTAL		**16**	**24**	**16**	**56**
Grade 8	8. R.1.1 Students are able to apply knowledge of word origins and derivations to extend vocabulary development.	Application	2	3	2	**7**
	8. R.1.2 Students are able to use reading strategies to comprehend the meaning of words and text.	Application	2	3	2	**7**
	8. R.2.1 Students are able to analyze and explain the author's use of literary elements.	Analysis	2	3	2	**7**
	8. R.2.2 Students are able to describe the effect of the author's use of literary devices.	Application	2	3	2	**7**
	8. R.3.1 Students are able to compare/contrast literature from different eras or cultures dealing with similar themes or conflicts.	Analysis	2	3	2	**7**
	8. R.4.1 Students are able to determine the appropriate strategy to gather and organize information.	Evaluation	2	3	2	**7**
	8. R.4.2 Students are able to evaluate information about a topic gathered from a variety of sources.	Analysis	2	3	2	**7**
	8. R.4.3 Students are able to combine new information with existing knowledge to form interpretations.	Synthesis	2	3	2	**7**
	TOTAL		**16**	**24**	**16**	**56**

	Reading Content Standards	Bloom's Taxonomy Designation	TEST BLUEPRINT			
			B	P	A	Total
Grade 11	11. R.1.1 Students are able to use various reading and study strategies to increase comprehension	Application	2	4	2	**8**
	11. R.2.1 Students are able to analyze and explain the relationships among elements of literature (characterization, setting, plot, theme, conflict).	Analysis	2	4	2	**8**
	11. R.2.2 Students are able to analyze and explain literary devices within text.	Analysis	2	4	2	**8**
	11. R.3.1 Students are able to analyze and explain the influence of cultural and historical context on the form, style, and point of view of a written work.	Analysis	2	4	2	**8**
	11. R.4.1 Students are able to examine the effect of faulty logic techniques in expository text.	Analysis	2	4	2	**8**
	TOTAL		**10**	**20**	**10**	**40**

Mathematics Test Blueprints

	Grade 3 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	3. A.1.1. Students are able to explain the relationship between repeated addition and multiplication.	Comprehension	1	2	1	**4**
	3. A.1.2. Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication).	Knowledge	1	1	1	**3**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	3. A.2.1. Students are able to select appropriate relational symbols	Comprehension	1	1	1	**3**
	3. A.2.2. Students are able to solve problems involving addition and subtraction of whole numbers.	Application	1	2	1	**4**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	3. A.3.1. Students are able to use the relationship between multiplication and division to compute and check results.	Application	2	3	2	**7**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	3. A.4.1. Students are able to extend linear patterns.	Comprehension	1	2	1	**4**
	3. A.4.2. Students are able to use number patterns and relationships to learn basic facts.	Application	1	1	1	**3**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	3. G.1.1. Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder.	Comprehension	1	2	1	**4**
	3. G.1.2. Students are able to identify points, lines, line segments, and rays.	Knowledge	1	1	1	**3**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	3. G.2.1. Students are able to demonstrate relationships between figures using similarity and congruence.	Comprehension	2	3	2	**7**
			4	**6**	**4**	**14**
MEASURMENT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	3. M.1.1. Students are able to read and tell time before and after the hour within five-minute intervals on an analog clock.	Knowledge		1		**1**
	3. M.1.2. Students are able to count, compare, and solve problems using a collection of coins and bills.	Application	1		1	**2**
	3. M.1.3. Students are able to identify U.S. Customary units of length (feet), weight (pounds), and capacity (gallons).	Knowledge		1		**1**
	3. M.1.4. Students are able to select appropriate units to measure length (inch, foot, mile, yard); weight (ounces, pounds, tons); and capacity (cups, pints, quarts, gallons).	Application	1	1		**2**
	3. M.1.5. Students are able to measure length to the nearest 1/2 inch.	Knowledge			1	**1**
			2	**3**	**2**	**7**

	Grade 3 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	3. N.1.1. Students are able to place in order and compare whole numbers less than 10,000, using appropriate words and symbols.	Comprehension	1	1	1	**3**
	3. N.1.2. Students are able to find multiples of whole numbers 2, 5, and 10.	Comprehension	1	1		**2**
	3. N.1.3. Students are able to name and write fractions from visual representations.	Knowledge		1	1	**2**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	3. N.2.1. Students are able to add and subtract whole numbers up to three digits and multiply two digits by one digit.	Application	2	3	2	**7**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	3. N.3.1. Students are able to round two-digit whole numbers to the nearest tens, and three-digit whole numbers to the nearest hundreds.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	3. S.1.1. Students are able to ask and answer questions from data represented in bar graphs, pictographs and tally charts.	Application	1	2	1	**4**
	3. S.1.2. Students are able to gather data and use the information to complete a scaled and labeled graph.	Application	1	1	1	**3**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	3. S.2.1. Students are able to describe events as certain or impossible.	Comprehension	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 4 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	4.A.1.1 Students are able to simplify whole number expressions involving addition, subtraction, multiplication, and division	Comprehension	1	1	1	**3**
	4. A.1.2 Students are able to recognize and use the commutative property of addition and multiplication.	Application		1	1	**2**
	4.A.1.3 Students are able to relate the concepts of addition, subtraction, multiplication, and division to one another	Application	1	1		**2**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	4. A.2.1. Students are able to select appropriate relational symbols (<, >, =) to make number sentences true.	Comprehension	1	1	1	**3**
	4. A.2.2 Students are able to simplify a two-step equation using whole numbers.	Application	1	2	1	**4**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	4.A.3.1 Students are able to write and solve number sentences that represent one-step word problems using whole numbers	Application	2	3	2	**7**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	4. A.4.1 Students are able to solve problems involving pattern identification and completion of patterns.	Application	2	3	2	**7**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	4. G.1.1 Students are able to identify the following plane and solid figures: pentagon, hexagon, octagon, pyramid, rectangular prism, and cone.	Knowledge	1	2	1	**4**
	4. G.1.2 Students are able to identify parallel, perpendicular, and intersecting lines.	Knowledge	1	1	1	**3**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	4. G.2.1 Students are able to compare geometric figures using size, shape, orientation, congruence, and similarity.	Comprehension	1	2	1	**4**
	4. G.2.2 Students are able to identify a slide (translation) of a given figure.	Knowledge	1	1	1	**3**
			4	**6**	**4**	**14**
MEASURMENT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	4.M.1.1 Students are able to identify equivalent periods of time and solve problems	Knowledge		1	1	**2**
	4. M.1.2 Students are able to solve problems involving money including unit conversion.	Application	1	1		**2**
	4. M.1.3 Students are able to use scales of length, temperature, capacity, and weight.	Application			1	**1**
	4. M.1.4 Students are able to measure length to the nearest quarter inch.	Comprehension	1	1		**2**
			2	**3**	**2**	**7**

	Grade 4 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	4. N.1.1 Students are able to read, write, order, and compare numbers from .01 to 1,000,000.	Comprehension		1	1	**2**
	4. N.1.2 Students are able to find multiples of whole numbers through 12.	Comprehension	1		1	**2**
	4. N.1.3 Students are able to use a number line to compare numerical value of fractions or mixed numbers (fourths, halves, and thirds).	Comprehension	1	1		**2**
	4. N.1.4 Students are able to interpret negative integers in temperature.	Application		1		**1**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	4. N.2.1 Students are able to find the products of two-digit factors and quotient of two natural numbers using a one-digit divisor.	Application	1	2	1	**4**
	4. N.2.2 Students are able to add and subtract decimals with the same number of decimal places.	Application	1	1	1	**3**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	4. N.3.1 Students are able to estimate sums and differences in whole numbers and money to determine if a given answer is reasonable.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	4. S.1.1 Students are able to interpret data from graphical representations and draw conclusions.	Application	1	2	1	**4**
	4. S.1.2 Given a small ordered data set of whole number data points (odd number of points); students are able to identify the median, mode, and range.	Knowledge	1	1	1	**3**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	4. S.2.1 Students are able to determine the probability of simple events limited to equally likely and not equally likely outcomes.	Comprehension	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 5 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	5. A.1.1 Students are able to use a variable to write an addition expression.	Application	1	2	1	**4**
	5. A.1.2 Students are able to recognize and use the associative property of addition and multiplication.	Application	1	1	1	**3**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	5. A.2.1 Students are able to write one-step first degree equations using the set of whole numbers and find a solution.	Application	2	3	2	**7**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	5. A.3.1 Students are able to, using whole numbers, write and solve number sentences that represent two-step word problems.	Application	1	2	1	**4**
	5. A.3.2 Students are able to identify information and apply it to a given formula.	Application	1	1	1	**3**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	5. A.4.1 Students are able to solve problems using patterns involving more than one operation.	Application	2	3	2	**7**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	5. G.1.1 Students are able to describe and identify isosceles and equilateral triangles, pyramids, rectangular prisms, and cones.	Knowledge	1	2	1	**4**
	5. G.1.2 Students are able to identify acute, obtuse, and right angles.	Knowledge	1	1	1	**3**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	5. G.2.1 Students are able to determine lines of symmetry in rectangles, squares, and triangles.	Comprehension		1	1	**2**
	5. G.2.2 Students are able to identify a turn or flip (rotation or reflection) of a given figure.	Knowledge	1	1		**2**
	5. G.2.3 Students are able to use two-dimensional coordinate grids to find locations and represent points and simple figures.	Application	1	1	1	**3**
			4	**6**	**4**	**14**
MEASURMENT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	5. M.1.1 Students are able to determine elapsed time within an a.m. or p.m. period on the quarter-hour.	Comprehension		1	1	**2**
	5. M.1.2 Students are able to solve problems involving money including making change.	Application	1	1		**2**
	5. M.1.3 Students are able to use and convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).	Application			1	**1**
	5. M.1.4 Students are able to use appropriate tools to measure length, weight, temperature, and area in problem solving.	Application	1	1		**2**
			2	**3**	**2**	**7**

	Grade 5 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	5. N.1.1 Students are able to read, write, order, and compare numbers from .001 to 1,000,000,000.	Comprehension			1	**1**
	5. N.1.2 Students are able to find prime, composite, and factors of whole numbers from 1 to 50.	Comprehension	1	1		**2**
	5. N.1.3 Students are able to identify alternative representations of fractions and decimals involving tenths, fourths, halves, and hundredths.	Knowledge		1	1	**2**
	5. N.1.4 Students are able to locate negative integers on a number line.	Comprehension	1			**1**
	5. N.1.5 Students are able to determine the squares of numbers 1 – 12.	Comprehension		1		**1**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	5. N.2.1 Students are able to find the quotient of whole numbers using two-digit divisors.	Application	1	1		**2**
	5. N.2.2 Students are able to determine equivalent fractions including simplification (lowest terms of fractions).	Application	1	1	1	**3**
	5. N.2.3 Students are able to multiply and divide decimals by natural numbers (1 – 9).	Application		1	1	**2**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	5. N.3.1 Students are able to use different estimation strategies to solve problems involving whole numbers, decimals, and fractions to the nearest whole number.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	5. S.1.1 Students are able to gather, graph, and interpret data.	Application	1	2	1	**4**
	5. S.1.2 Students are able to calculate and explain mean for a whole number data set.	Application	1	1	1	**3**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	5. S.2.1 Students are able to classify probability of simple events as certain, likely, unlikely, or impossible.	Application	1	2	1	**4**
	5. S.2.2 Students are able to use models to display possible outcomes.	Application	1	1	1	**3**
	STATISTICS		**4**	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 6 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	6. A.1.1 Students are able to use order of operations, excluding nested parentheses and exponents, to simplify whole number expressions.	Application	1	2	1	**4**
	6. A.1.2 Students are able to write algebraic expressions involving addition or multiplication using whole numbers.	Application	1	1	1	**3**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	6. A.2.1 Students are able to write and solve one-step 1st degree equations, with one variable, involving inverse operations using the set of whole numbers.	Application	2	3	2	**7**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	6. A.3.1 Students are able to identify and graph ordered pairs in Quadrant I on a coordinate plane.	Knowledge	1	1	1	**3**
	6. A.3.2 Students are able to solve one-step problems involving ratios and rates.	Application	1	2	1	**4**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	6. A.4.1 Students are able to use concrete materials, graphs and algebraic statements to represent problem situations.	Comprehension	2	3	2	**7**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	6. G.1.1 Students are able to identify and describe the characteristics of triangles and quadrilaterals.	Comprehension	1	2	1	**4**
	6. G.1.2 Students are able to identify and describe angles.	Comprehension	1	1	1	**3**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	6. G.2.1 Students are able to use basic shapes to demonstrate geometric concepts.	Application	2	3	2	**7**
			4	**6**	**4**	**14**
MSMT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	6. M.1.1 Students are able to select, use, and convert appropriate unit of measurement for a situation.	Comprehension	1	2	1	**4**
	6. M.1.2 Students are able to find the perimeter and area of squares and rectangles (whole number measurements).	Comprehension	1	1	1	**3**
			2	**3**	**2**	**7**

	Grade 6 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	6. N.1.1 Students are able to represent fractions in equivalent forms and convert between fractions, decimals, and percents using halves, fourths, tenths, hundredths.	Comprehension	1	2	1	**4**
	6. N.1.2 Students are able to find factors and multiples of whole numbers.	Knowledge	1	1	1	**3**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	6. N.2.1 Students are able to add, subtract, multiply, and divide decimals.	Comprehension	2	3	2	**7**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	6. N.3.1 Students are able to use various strategies to solve one- and two-step problems involving positive decimals.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	6. S.1.1 Students are able to find the mean, mode, and range of an ordered set of positive data.	Comprehension	1	1	1	**3**
	6. S.1.2 Students are able to display data using bar and line graphs and draw conclusions from data displayed in a graph.	Application	1	2	1	**4**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	6. S.2.1 Students are able to find the probability of a simple event.	Knowledge	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 7 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	7. A.1.1 Students are able to write and evaluate algebraic expressions using the set of whole numbers.	Application	1	2	1	**4**
	7.A.1.2 Students are able to identify associative, commutative, distributive, and identity properties involving algebraic expressions	Knowledge	1	1	1	**3**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	7. A.2.1 Students are able to write and solve one-step 1st degree equations, with one variable, using the set of integers and inequalities, with one variable, using the set of whole numbers.	Application	2	3	2	**7**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	7. A.3.1 Students are able to identify and graph ordered pairs on a coordinate plane and inequalities on a number line.	Application	1	1	1	**3**
	7. A.3.2 Students are able to model and solve multi-step problems involving rates.	Application	1	2	1	**4**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	7. A.4.1 Students are able to recognize one-step patterns using tables, graphs, and models and create one-step algebraic expressions representing the pattern.	Application	2	3	2	**7**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	7. G.1.1 Students are able to identify, describe, and classify polygons having up to 10 sides.	Application	1	2	1	**4**
	7. G.1.2 Students are able to identify and describe elements of geometric figures.	Knowledge	1	1	1	**3**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	7. G.2.1 Students are able to demonstrate ways that shapes can be transformed.	Application	2	3	2	**7**
			4	**6**	**4**	**14**
MSMT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	7. M.1.1 Students are able to select, use, and convert appropriate units of measurement for a situation including capacity and angle measurement.	Comprehension	1	2	1	**4**
	7. M.1.2 Students, when given the formulas, are able to find circumference, perimeter, and area of circles, parallelograms, triangles, and trapezoids (whole number measurements).	Comprehension	1	1	1	**3**
			2	**3**	**2**	**7**

	Grade 7 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	7. N.1.1 Students are able to represent numbers in a variety of forms by describing, ordering, and comparing integers, decimals, percents, and fractions.	Comprehension	1	2	1	**4**
	7. N.1.2 Students are able to find and use common multiples and factors of whole numbers.	Application	1	1	1	**3**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	7. N.2.1 Students are able to add, subtract, multiply, and divide integers and positive fractions.	Application	2	3	2	**7**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	7. N.3.1 Students are able to use various strategies to solve one- and two-step problems involving positive fractions and integers.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	7. S.1.1 Students are able to find the mean, median, mode, and range of a set of data.	Comprehension	1	1	1	**3**
	7. S.1.2 Students are able to display data, using frequency tables, line plots, stem-and-leaf plots, and make predictions from data displayed in a graph.	Application	1	2	1	**4**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	7. S.2.1 Students are able, given a sample space, to find the probability of a specific outcome.	Comprehension	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 8 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	8. A.1.1 Students are able to use properties to expand, combine, and simplify 1st degree algebraic expressions with the set of integers.	Application	2	3	2	**7**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	8. A.2.1 Students are able to write and solve two-step 1st degree equations, with one variable, and one-step inequalities, with one variable, using the set of integers.	Application	2	3	2	**7**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	8. A.3.1 Students are able to describe and determine linear relationships.	Comprehension	2	3	2	**7**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	8. A.4.1 Students are able to create rules to explain the relationship between numbers when a change in the first variable affects the second variable.	Synthesis	1	1	1	**3**
	8. A.4.2 Students are able to describe and represent relations using tables, graphs, and rules.	Analysis	1	2	1	**4**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	8. G.1.1 Students are able to describe and classify prisms, pyramids, cylinders, and cone.	Application	1	1	1	**3**
	8. G.1.2 Students, when given any two sides of an illustrated right triangle, are able to use the Pythagorean Theorem to find the third side.	Application	1	2	1	**4**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	8. G.2.1 Students are able to write and solve proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.	Application	2	3	2	**7**
			4	**6**	**4**	**14**
MSMT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	8. M.1.1 Students are able to apply proportional reasoning to solve measurement problems with rational number measurements.	Application	1	1	1	**3**
	8. M.1.2 Students are able to find area, volume, and surface area with whole number measurements.	Comprehension	1	2	1	**4**
			2	**3**	**2**	**7**

	Grade 8 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	8. N.1.1 Students are able to represent numbers in a variety of forms and identify the subsets of rational numbers.	Comprehension	2	3	2	**7**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	8. N.2.1 Students are able to read, write, and compute within any subset of rational numbers.	Application	2	3	2	**7**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	8. N.3.1 Students are able to use various strategies to solve multi-step problems involving rational numbers.	Application	2	3	2	**7**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	8. S.1.1 Students are able to find the mean, median, mode, and range of a data set from a stem-and-leaf plot and a line plot.	Comprehension	1	1	1	**3**
	8. S.1.2 Students are able to use a variety of visual representations to display data to make comparisons and predictions.	Application	1	2	1	**4**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	8. S.2.1 Students are able to find the sample space and compute probability for two simultaneous independent events.	Comprehension	2	3	2	**7**
	STATISTICS		**4**	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

	Grade 11 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
ALGEBRA	**Indicator 1: Use procedures to transform algebraic expressions.**		2	3	2	**7**
	11. A.1.1 Students are able to write equivalent forms of algebraic expressions using properties of the set of real numbers.	Comprehension	2	3	2	**7**
	Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.		2	3	2	**7**
	11. A.2.1 Students are able to use algebraic properties to transform multi-step, single-variable, first-degree equations.	Comprehension	1	2	1	**4**
	11. A.2.2 Students are able to use algebraic properties to transform multi-step, single-variable, first-degree inequalities and represent solutions using a number line.	Application	1	1	1	**3**
	Indicator 3: Interpret and develop mathematical models.		2	3	2	**7**
	11. A.3.1 Students are able to create linear models to represent problem situations.	Application	1	2	1	**4**
	11. A.3.2 Students are able to distinguish between linear and nonlinear models.	Comprehension	1	1	1	**3**
	Indicator 4: Describe and use the properties and behaviors of relations, functions, and inverses.		2	3	2	**7**
	11. A.4.1 Students are able to use graphs, tables, and equations to represent linear functions.	Application	2	3	2	**7**
			8	**12**	**8**	**28**
GEOMETRY	**Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.**		2	3	2	**7**
	11. G.1.1 Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.	Application	1	1	1	3
	11. G.1.2Students is able to identify and apply relationships among triangles.	Application	1	2	1	**4**
	Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.		2	3	2	**7**
	11. G.2.1 Students are able to recognize the relationship between a three-dimensional figure and its two-dimensional representation.	Analysis		1	1	**2**
	11. G.2.2 Students are able to reflect across vertical or horizontal lines, and translate two-dimensional figures.	Application	1	1	1	**3**
	11. G.2.3 Students are able to use proportions to solve problems.	Application	1	1		**2**
			4	**6**	**4**	**14**
MSMT	**Indicator 1: Apply measurement concepts in practical applications.**		2	3	2	**7**
	11. M.1.1 Students are able to choose appropriate unit label, scale, and precision.	Comprehension	1	1		**2**
	11. M.1.2 Students are able to use suitable units when describing rate of change.	Comprehension	1	1	1	**3**
	11. M.1.3 Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures.	Application		1	1	**2**
			2	**3**	**2**	**7**

	Grade 11 Mathematics Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
NUMBER SENSE	**Indicator 1: Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.**		2	3	2	**7**
	11. N.1.1 Students are able to identify multiple representations of a real number.	Comprehension	1	1	1	**3**
	11. N.1.2 Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers.	Comprehension	1	2	1	**4**
	Indicator 2: Apply operations within the set of real numbers.		2	3	2	**7**
	11. N.2.1 Students are able to add, subtract, multiply, and divide real numbers including integral exponents.	Comprehension	2	3	2	**7**
	Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.		2	3	2	**7**
	11. N.3.1 Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results.	Analysis	1	2	1	**4**
	11. N.3.2 Students are able to select alternative computational strategies and explain the chosen strategy.	Comprehension	1	1	1	**3**
			6	**9**	**6**	**21**
STATISTICS	**Indicator 1: Use statistical models to gather, analyze, and display data to draw conclusions.**		2	3	2	**7**
	11. S.1.1 Students are able to draw conclusions from a set of data.	Analysis	1	1	1	**3**
	11. S.1.2 Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode, and median.	Comprehension		1	1	**2**
	11. S.1.3 Represent a set of data in a variety of graphical forms and draw conclusions.	Analysis	1	1		**2**
	Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.		2	3	2	**7**
	11. S.2.1 Students are able to distinguish between experimental and theoretical probability.	Knowledge	1	2	1	**4**
	11. S.2.2 Students are able to predict outcomes of simple events using given theoretical probabilities.	Comprehension	1	1	1	**3**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

Science Test Blueprints

	Grade 5 Science Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
PHYSICAL SCIENCE	**Indicator 1: Describe structures and properties of, and changes in, matter.**		2	3	2	**7**
	5. P.1.1 Students are able to define matter on the basis of observable physical properties.	Knowledge	2	3	2	**7**
	Indicator 2: Analyze forces, their forms, and their effects on motions.		2	3	2	**7**
	5. P.2.1 Students are able to identify forces in specific situations that require objects to interact, change directions, or stop.	Knowledge	1	2	1	**4**
	5. P.2.2 Students are able to analyze the structure and design of simple and compound machines to determine how the machines make work easier by trading force for distance.	Analysis	1	1	1	**3**
	Indicator 3: Analyze interactions of energy and matter.		2	3	2	**7**
	5. P.3.1 Students are able to demonstrate and explain how to measure heat flow into an object.	Application	1	1		**2**
	5. P.3.2 Students are able to describe the Sun's ability to produce energy in the forms of light and heat.	Correspondence	1	1	1	**3**
	5. P.3.3 Students are able to describe basic properties of light.	Correspondence		1	1	**2**
			6	**9**	**6**	**21**
LIFE SCIENCE	**Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.**		2	3	2	**7**
	5. L.1.1 Students are able to describe the basic process of photosynthesis and the role of light as a source of energy in plants.	Comprehension	2	3	2	**7**
	Indicator 2: Analyze various patterns of inheritance and biological change.		2	3	2	**7**
	5. L.2.1 Students are able to predict physical characteristics with family lineage.	Evaluation	1	2	1	**4**
	5. L.2.2 Students are able to describe structures and processes involved in plant reproduction.	Comprehension	1	1	1	**3**
	Indicator 3: Analyze how organisms are linked to one another and the environment.		2	3	2	**7**
	5. L.3.1 Students are able to describe how natural events and/or human influences may help or harm ecosystems.	Comprehension	1	1		**2**
	5. L.3.2 Students are able to analyze the roles of organisms to determine the transfer of energy using an energy pyramid model.	Application	1	1	1	**3**
	5. L.3.3 Students are able to describe how interrelationships enable some organisms to survive.	Correspondence		1	1	**2**
			6	**9**	**6**	**21**
EARTH SCIENCE	**Indicator 1: Analyze the various structures and processes of the Earth system.**		2	3	2	**7**
	5. E.1.1 Students are able to describe the basic structure of Earth's interior.	Comprehension	2	3	2	**7**
	Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.		2	3	2	**7**
	5. E.2.1 Students are able to describe the components (Sun, planets, and moons) of the solar system.	Comprehension	1	2	1	**4**
	5. E.2.2 Students are able to explain how the Earth's rotation affects the appearance of the sky.	Comprehension	1	1	1	**3**
			4	**6**	**4**	**14**

	Grade 5 Science Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
SCI, TECH, ENVT, AND SOC	**Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.**		2	3	2	**7**
	5. S.1.1 Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.	Knowledge	1	2	1	**4**
	5. S.1.2 Students are able to describe how designing a solution may have constraints.	Comprehension	1	1	1	**3**
	Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.		2	3	2	**7**
	5. S.2.1 Students are able to explain the interrelationship of populations, resources, and environments.	Evaluation	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**20**	**30**	**20**	**70**

	Grade 8 Science Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
NATURE OF SCIENCE	**Indicator 1: Understand the nature and origin of scientific knowledge.**		2	3	2	**7**
	8. N.1.1 Students are able to differentiate among facts, predictions, theory, and law/principles in scientific investigations.	Comprehension	2	3	2	**7**
	Indicator 2: Apply the skills necessary to conduct scientific investigations.		2	3	2	**7**
	8. N.2.1 Students are able to design a replicable scientific investigation.	Synthesis	2	3	2	**7**
			4	**6**	**4**	**14**
PHYSICAL SCIENCE	**Indicator 1: Describe structures and properties of, and changes in, matter.**		4	6	4	**14**
	8. P.1.1 Students are able to classify matter as elements, compounds, or mixtures.	Analysis	2	2	1	**5**
	8. P.1.2 Students are able to use the Periodic Table to compare and contrast families of elements and to classify elements as metals, metalloids, or non-metals.	Application	1	2	1	**4**
	8. P.1.3 Students are able to compare properties of matter resulting from physical and chemical changes.	Comprehension	1	2	2	**5**
			4	**6**	**4**	**14**
EARTH SCIENCE	**Indicator 1: Analyze the various structures and processes of the Earth system.**		6	9	6	**21**
	8. E.1.1 Students are able to identify and classify minerals and rocks.	Application	1	2	2	**5**
	8. E.1.2 Students are able to explain the role of plate tectonics in shaping Earth.	Analysis	2	1	1	**4**
	8. E.1.3 Students are able to explain the factors that create weather and the instruments and technologies that assess it.	Analysis	1	2	1	**4**
	8. E.1.4 Students are able to examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves.	Application	1	2	1	**4**
	8. E.1.5 Students are able to explain the impact of weathering and erosion on the Earth.	Analysis	1	2	1	**4**
	Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.		2	3	2	**7**
	8. E.2.1 Students are able to compare celestial bodies within the solar system using composition, size, and orbital motion.	Analysis	1	2	1	**4**
	8.E.2.2 Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun.	Analysis	1	1	1	**3**
			8	**12**	**8**	**28**
SCI, TECH, ENVT, AND SOC	**Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.**		2	3	2	**7**
	8. S.1.1 Students are able to describe how science and technology have been influenced by social needs, attitudes, and values.	Comprehension	2	3	2	**7**
	Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.		2	3	2	**7**
	8. S.2.1 Students are able, given a scenario, to offer solutions to problems created by human activity on the local, regional, or global environment.	Synthesis	2	3	2	**7**
			4	**6**	**4**	**14**
	TOTAL		**20**	**30**	**20**	**70**

	Grade 11 Science Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT B	P	A	Total
NATURE OF SCIENCE	**Indicator 1: Understand the nature and origin of scientific knowledge.**		2	3	2	**7**
	11. N.1.1. Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations.	Evaluation	1	2	1	**4**
	11. N.1.2. Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws.	Synthesis	1	1	1	**3**
	Indicator 2: Apply the skills necessary to conduct scientific investigations.		2	3	2	**7**
	11. N.2.1. Students are able to apply science process skills to design and conduct student investigations.	Synthesis	1	1	1	**3**
	11. N.2.2. Students are able to practice safe and effective laboratory techniques.	Application	1	2	1	**4**
			4	**6**	**4**	**14**
PHYSICAL SCIENCE	**Indicator 1: Describe structures and properties of, and changes in, matter.**		2	3	2	**7**
	11. P.1.1 Students are able to use the Periodic Table to determine the atomic structure of elements, valence number, family relationships, and regions (metals, nonmetals, and metalloids).	Analysis	1			**1**
	11. P.1.2 Students are able to describe ways that atoms combine.	Comprehension	1	1		**2**
	11. P.1.3 Students are able to predict whether reactions will speed up or slow down as conditions change.	Application		1		**1**
	11. P.1.4 Students are able to balance chemical equations by applying the Law of Conservation of Matter.	Application		1	1	**2**
	11. P.1.5 Students are able to distinguish among chemical, physical, and nuclear changes.	Comprehension			1	**1**
	Indicator 2: Analyze forces, their forms, and their effects on motions.		2	3	2	**7**
	11. P.2.1 Students are able to apply concepts of distance and time to the quantitative relationships of motion using appropriate mathematical formulas, equations, and units.	Analysis	1	1		**2**
	11. P.2.2 Students are able to predict motion of an object using Newton's Laws.	Application	1	1	1	**3**
	11. P.2.3 Students are able to relate concepts of force, distance, and time to the quantitative relationships of work, energy, and power.	Application		1	1	**2**
	Indicator 3: Analyze interactions of energy and matter.		2	3	2	**7**
	11. P.3.1 Students are able to describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy.	Application	1	1		**2**
	11. P.3.2 Students are able to describe how characteristics of waves are related to one another.	Comprehension	1	1	1	**3**
	11. P.3.3 Students are able to describe electrical effects in terms of motion and concentrations of charged particles.	Application		1	1	**2**
			6	**9**	**6**	**21**

	Grade 11 Science Content Indicators and Standards	Bloom's Taxonomy Designation	2008 TEST BLUEPRINT			
LIFE SCIENCE	**Indicator 1: Understand the fundamental structures, functions, classifications, and mechanisms found in living things.**		2	3	2	**7**
	11. L.1.1 Students are able to relate cellular functions and processes to specialized structures within cells.	Analysis	1	1		**2**
	11. L.1.2 Students are able to classify organisms using characteristics and evolutionary relationship of major taxa.	Application	1	1	1	**3**
	11. L.1.3 Students are able to identify structures and function relationships within major taxa.	Analysis		1	1	**2**
	Indicator 2: Analyze various patterns of inheritance and biological change.		2	3	2	**7**
	11. L.2.1 Students are able to predict inheritance patterns using a single allele.	Application	1	2	1	**4**
	11. L.2.2 Students are able to describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species.	Synthesis	1	1	1	**3**
	Indicator 3: Analyze how organisms are linked to one another and the environment.		2	3	2	**7**
	11. L.3.1 Students are able to identify factors that can cause changes in stability of populations, communities, and ecosystems.	Comprehension	2	3	2	**7**
			6	**9**	**6**	**21**
EARTH SCIENCE	**Indicator 1: Analyze the various structures and processes of the Earth system.**		2	3	2	**7**
	11. E.1.1 Students are able to explain how elements and compounds cycle between living and non-living systems.	Comprehension	1	1		**2**
	11. E.1.2 Students are able to describe how atmospheric chemistry may affect global climate.	Application	1	1	1	**3**
	11. E.1.3 Students are able to assess how human activity has changed the land, ocean, and atmosphere of Earth.	Analysis		1	1	**2**
	Indicator 2: Analyze essential principles and ideas about the composition and structure of the universe.		2	3	2	**7**
	11. E.2.1 Students are able to recognize how Newtonian mechanics can be applied to the study of the motions of the solar system.	Comprehension	2	3	2	**7**
			4	**6**	**4**	**14**
SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	**Indicator 1: Analyze various implications/effects of scientific advancement within the environment and society.**		2	3	2	**7**
	11. S.1.1 Students are able to explain ethical roles and responsibilities of scientists and scientific research.	Application	1	2	1	**4**
	11. S.1.2 Students are able to evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues.	Evaluation	1	1	1	**3**
	Indicator 2: Analyze the relationships/interactions among science, technology, environment, and society.		2	3	2	**7**
	11. S.2.1 Students are able to describe immediate and long-term consequences of potential solutions for technological issues.	Evaluation	1	1		**2**
	11. S.2.2 Students are able to analyze factors that could limit technological design.	Analysis	1	1	1	**3**
	11. S.2.3 Students are able to analyze and describe the benefits, limitations, cost, and consequences involved in using, conserving, or recycling resources.	Synthesis		1	1	**2**
			4	**6**	**4**	**14**
	TOTAL		**24**	**36**	**24**	**84**

APPENDIX B: Test Security Documents

Dakota STEP
TEST SECURITY AGREEMENT

For State Agency, District Personnel, and Test Coordinators

I acknowledge that the *Dakota STEP* is a secure test and agree to the following conditions of use to ensure test security:

1. a) I will take all necessary precautions to safeguard all test materials by limiting access to persons within the school district or agency with a responsible, professional interest in the test's security.
   b) The names of all persons having access to the materials will be kept on file.
   c) All persons having access to the materials (other than students to whom the test is administered) will sign a security affidavit, which will be kept on file in the school district office.

2. a) I will keep the test materials under lock and key, except on actual testing dates, limiting access to those responsible for their security.
   b) Secure test materials, including test books and directions, will be delivered to examiners no sooner than the date of testing, unless logistics dictate an earlier delivery date.
   c) Test materials will be kept secure until they are actually distributed to students.
   d) In no case will students be permitted to remove test materials from the room where testing takes place.

3. I will not disclose or allow to be disclosed the contents of, or the scoring keys to, the test instrument.

4. Upon completion of testing, I will return all test materials to the designated Test Coordinator of the school district.

5. I will develop, distribute, and enforce disciplinary procedures for the violation of test security by district or agency staff.

By signing my name to this document, I am assuring Harcourt Assessment that I and anyone having access to the test materials will abide by the above conditions.

Signature: _____ District/Agency: _____

Printed Name: _____ Address: _____

Title: _____ Address: _____

Date: _____ City/State/Zip: _____

TEST COORDINATORS—Send your original *Test Security Agreement* and all teacher/examiner *Test Security Affidavits* to Gay Pickner, c/o South Dakota Department of Education, 700 Governors Drive, Pierre, SD 57501.

Retain copies of the *Test Security Agreement* and the teacher/examiner *Test Security Affidavits* at the district office.

Dakota STEP
TEST SECURITY AFFIDAVIT

For Teachers/Examiners

I acknowledge that I will have access to the *Dakota STEP* test materials for the purpose of administering the assessment. I understand that these materials are highly secure, and it is my professional responsibility to protect their security as follows:

1. I will not divulge the contents of the test, generally or specifically, to anyone.

2. I will not copy any part of the test or directions.

3. I will limit access to the test materials by examinees only to actual testing periods.

Signature: _____ District/Agency: _____

Printed Name: _____ School: _____

Position: _____ Address: _____

Date: _____ City/State/Zip: _____

	Number	Teacher's Initials	Test Coord. Initials
Test booklets issued	_____	_____	_____
Test booklets returned	_____	_____	_____

Return this signed *Test Security Affidavit* to your test coordinator after receiving test materials.

TEST COORDINATORS—Send all teacher/examiner *Test Security Affidavits* to Gay Pickner, c/o South Dakota Department of Education, 700 Governors Drive, Pierre, SD 57501. Retain copies of the teacher/examiner *Test Security Affidavits* at the district office.
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South Dakota Department of Education

REPORT OF TEST IRREGULARITY

If it is determined that an irregularity in testing has occurred, the local district is to fax this form within 24 hours of the occurrence to Gay Pickner at the SD Department of Education at 605-773-3782. The form may also be e-mailed to gay.pickner@state.sd.us or mailed to Gay Pickner, c/o South Dakota Department of Education, 700 Governors Drive, Pierre, SD 57501.

District_____

School_____

Date_____

Test Coordinator_____ **Phone**_____

E-Mail_____

Description of Irregularity:

Action taken to correct:

What actions will be taken to avoid this type of incident again?

APPENDIX C: Sample Score Reports

Standards-based Student Report

Individual Student Report
Dakota STEP

Logged in as Cyberland Sd
Grade: 06
Year: 2006

Main | Back | Help | Logout

1 of 1

John J Doe308

Grade: 06
SIMS ID: 154873084
District: Cyberland SD
School: Cyberland Mid

	Raw Score	Max. Score	% Correct	Performance Level
Reading Total	**42**	**56**	**75.0**	***Proficient***
Indicator 1, Standard 1: Use context to understand words with multiple meanings.	5	7	71.4	
Indicator 1, Standard 2: Use direct and implied meaning to understand text.	5	7	71.4	
Indicator 2, Standard 1: Use the organizational structures and patterns in various literary texts to create meaning.	5	7	71.4	
Indicator 2, Standard 2: Understand types of figurative language.	3	7	42.9	
Indicator 3, Standard 1: Explain how literature can be used to better understand other time periods and events.	6	7	85.7	
Indicator 4, Standard 1: Use reference sources to retrieve information.	7	7	100.0	
Indicator 4, Standard 2: Compare and contrast information on one topic contained in several sources.	4	7	57.1	
Indicator 4, Standard 3: Determine the quality of material in informational texts.	7	7	100.0	
Mathematics Total	**73**	**84**	**86.9**	***Proficient***
Algebra, Indicator 1: Use procedures to transform algebraic expressions.	7	7	100.0	
Algebra, Indicator 2: Use a variety of algebraic concepts and methods to solve equations and inequalities.	7	7	100.0	
Algebra, Indicator 3: Interpret and develop mathematical models.	7	7	100.0	
Algebra, Indicator 4: Analyze and describe the properties and behaviors of relations, functions, and their inverses.	6	7	85.7	
Geometry, Indicator 1: Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	6	7	85.7	
Geometry, Indicator 2: Use properties of geometric figures to solve problems from a variety of perspectives.	6	7	85.7	
Measurement, Indicator 1: Apply measurement concepts in practical applications.	7	7	100.0	
Number Sense, Indicator 1: Use the structural characteristics of a set of real numbers and its various subsets.	3	7	42.9	
Number Sense, Indicator 2: Apply operations within the set of real numbers.	6	7	85.7	
Number Sense, Indicator 3: Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.	6	7	85.7	
Statistics, Indicator 1: Use statistical models to gather, analyze and display data to draw conclusions.	5	7	71.4	
Statistics, Indicator 2: Apply the concepts of probability to predict outcomes and solve problems.	7	7	100.0	

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Standards-based Roster Report

Roster Report
Dakota STEP

Logged in as Cyberland Sd
Grade: 06
Year: 2006

Main | Back | Save Query | Get Text | Transpose | Help | Logout

Selected Students: All

						Reading																
									Standards													
Last Name	First Name	MI	DOB	Gender	Ethnicity	Total Raw Score	Scaled Score	Performance Level	R.1.1	R.1.2	R.2.1	R.2.2	R.3.1	R.4.1	R.4.2	R.4.3	Total Raw Score	Scaled Score	Performance Level	M.A.1	M.A.2
Doe308	John	J	01/01/1995	M	W	42	688	Proficient	5	5	5	3	6	7	4	7	73	720	Proficient	7	7
Doe776	John	A	01/01/1995	M	W	35	664	Proficient	5	6	2	4	3	4	4	7	56	672	Proficient	5	6
Kay054	Mary	E	01/01/1995	F	I	42	688	Proficient	5	7	5	3	5	6	4	7	61	683	Proficient	4	5
Doe254	John	G	01/01/1995	M	I	34	661	Proficient	4	4	5	4	4	5	1	7	43	645	Basic	2	4
Doe613	John	A	01/01/1995	M	I	47	711	Advanced	7	6	4	5	7	7	4	7	60	681	Proficient	5	5
Doe251	John	J	01/01/1995	M	I	19	615	Basic	1	3	4	2	3	2	2	2	38	635	Basic	2	3
Doe617	John	L	01/01/1995	M	I	13	593	Basic	0	2	2	1	2	4	0	2	27	613	Basic	5	0
Doe835	John	O	01/01/1995	M	W	39	677	Proficient	5	6	4	4	6	6	1	7	57	674	Proficient	6	4
Kay094	Mary	A	01/01/1995	F	I	19	615	Basic	2	1	2	1	4	4	2	3	41	641	Basic	4	3
Doe709	John	L	01/01/1995	M	W	28	642	Proficient	2	7	3	3	4	4	2	3	47	653	Basic	3	5
Doe472	John	W	01/01/1995	M	I	44	696	Advanced	6	6	6	4	6	7	2	7	55	670	Proficient	5	4
Kay315	Mary	K	01/01/1995	F	I	48	716	Advanced	7	5	4	5	7	7	6	7	75	728	Advanced	6	6
Doe945	John	F	01/01/1995	M	W	37	670	Proficient	5	4	3	4	6	7	2	6	66	696	Proficient	7	6
Kay909	Mary	L	01/01/1995	F	W	34	661	Proficient	4	7	3	7	2	5	0	6	46	651	Basic	3	3
Doe506	John	M	01/01/1995	M	W	44	696	Advanced	6	7	3	4	6	7	4	7	71	712	Proficient	7	6
Kay657	Mary	D	01/01/1995	F	W	23	627	Basic	3	5	1	2	3	4	1	4	37	633	Basic	4	2
Kay917	Mary	R	01/01/1995	F	W	41	684	Proficient	5	6	7	2	5	6	5	5	63	688	Proficient	7	5
Kay262	Mary	R	01/01/1995	F	I	36	667	Proficient	5	5	4	2	4	6	3	7	61	683	Proficient	3	4
Kay286	Mary	L	01/01/1995	F	I	23	627	Basic	3	3	4	2	2	4	3	2	26	610	Basic	2	3
Kay708	Mary	A	01/01/1995	F	W	40	681	Proficient	6	6	6	2	5	5	4	6	65	694	Proficient	5	5

<<< Page: 1 of 4 >>> Jump to page: Go

APPENDIX D: Rasch (IRT) Item Statistics

Rasch (IRT) Item Statistics: Grade 3 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9882	-2.3530	0.0465	1.30	1.73
2	9882	-2.3420	0.0463	0.79	0.54
3	9882	-1.4140	0.0330	1.15	1.15
4	9882	-1.4680	0.0336	1.04	0.81
5	9882	0.0000	0.0237	0.98	0.91
6	9882	1.0280	0.0220	1.00	1.02
7	9882	0.3650	0.0227	1.01	0.97
8	9882	1.4523	0.0224	1.18	1.29
9	9882	0.5706	0.0223	1.04	1.06
10	9882	-0.4360	0.0255	0.86	0.80
11	9882	-2.2735	0.0450	0.89	0.60
12	9882	-1.2760	0.0316	0.77	0.75
13	9882	0.1102	0.0233	1.06	1.12
14	9882	0.8616	0.0221	1.01	1.01
15	9882	-1.2540	0.0314	1.26	1.41
16	9882	-1.4870	0.0338	1.01	1.12
17	9882	0.0790	0.0234	1.02	1.03
18	9882	0.2070	0.0231	1.07	1.09
19	9882	1.1420	0.0221	0.97	0.98
20	9882	-0.7820	0.0276	0.92	0.77
21	9882	1.2624	0.0222	0.98	1.03
22	9882	-0.6018	0.0265	0.81	0.65
23	9882	-0.1333	0.0242	1.03	1.03
24	9882	0.6007	0.0223	1.08	1.10
25	9882	0.0525	0.0235	1.20	1.51
26	9882	0.6047	0.0223	1.12	1.16
27	9882	1.0295	0.0220	0.97	0.98
28	9882	0.0228	0.0236	0.94	0.91
29	9882	-0.5864	0.0264	0.99	0.97
30	9882	1.5122	0.0225	1.19	1.34
31	9882	0.6812	0.0222	0.99	1.02
32	9882	1.4711	0.0224	1.14	1.27
33	9882	-0.7717	0.0275	0.91	0.79
34	9882	0.3050	0.0228	0.89	0.85
35	9882	0.4732	0.0225	0.95	0.91
36	9882	-0.1740	0.0243	0.85	0.78
37	9882	1.2208	0.0221	1.06	1.11
38	9882	2.2828	0.0249	1.13	1.50
39	9882	1.2921	0.0222	1.16	1.22
40	9882	0.7774	0.0221	1.04	1.06
41	9882	-0.5138	0.0260	0.97	0.92
42	9882	-0.3482	0.0251	0.83	0.73
43	9882	-0.4029	0.0254	0.88	0.78

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	9882	0.0581	0.0235	0.87	0.80
45	9882	-0.2129	0.0245	0.94	0.88
46	9882	0.8011	0.0221	1.09	1.12
47	9882	0.4599	0.0225	0.95	0.93
48	9882	0.9991	0.0220	0.96	0.96
49	9882	1.0928	0.0221	1.04	1.08
50	9882	1.8772	0.0233	1.13	1.32
51	9882	0.4353	0.0226	0.94	0.92
52	9882	-0.1232	0.0241	0.94	0.87
53	9882	0.2932	0.0229	1.20	1.33
54	9882	0.6593	0.0222	1.02	1.02
55	9882	1.0943	0.0221	1.08	1.14
56	9882	1.2005	0.0221	1.10	1.15

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/29/07

Rasch (IRT) Item Statistics: Grade 4 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9924	-0.7614	0.0302	0.96	0.86
2	9924	-1.5650	0.0398	0.86	0.81
3	9924	-0.4510	0.0276	1.00	0.87
4	9924	0.2930	0.0236	0.92	0.83
5	9924	0.9273	0.0220	0.96	0.94
6	9924	-0.4430	0.0276	0.98	0.96
7	9924	0.4696	0.0230	1.20	1.30
8	9924	0.4877	0.0230	1.00	1.01
9	9924	1.1466	0.0218	0.98	0.96
10	9924	1.0610	0.0218	1.20	1.25
11	9924	-0.7630	0.0302	0.81	0.59
12	9924	1.7285	0.0219	1.15	1.22
13	9924	0.8489	0.0221	1.01	1.00
14	9924	1.4237	0.0217	1.00	1.02
15	9924	0.7611	0.0223	0.90	0.85
16	9924	0.3800	0.0233	1.16	1.22
17	9924	-0.8052	0.0306	1.10	1.18
18	9924	-0.0490	0.0252	1.33	1.64
19	9924	0.7880	0.0222	1.01	1.00
20	9924	-0.5400	0.0283	0.84	0.69
21	9924	0.2024	0.0240	0.94	0.92
22	9924	0.7157	0.0224	0.87	0.83
23	9924	-2.1094	0.0496	0.92	0.94
24	9924	0.7696	0.0223	0.93	0.92
25	9924	1.9950	0.0224	1.16	1.24
26	9924	0.0650	0.0246	0.82	0.75
27	9924	1.3539	0.0217	0.99	1.00
28	9924	0.4493	0.0231	0.75	0.66
29	9924	-0.2026	0.0260	0.72	0.57
30	9924	0.6658	0.0225	0.86	0.81
31	9924	0.4143	0.0232	0.84	0.77
32	9924	0.5242	0.0229	1.02	1.02
33	9924	0.9646	0.0219	0.96	0.93
34	9924	0.2139	0.0239	0.84	0.79
35	9924	1.4068	0.0217	1.18	1.25
36	9924	1.0100	0.0219	1.09	1.11
37	9924	0.3963	0.0233	0.94	0.91
38	9924	0.4224	0.0232	0.98	0.95
39	9924	1.0537	0.0218	0.93	0.91
40	9924	0.3865	0.0233	1.07	1.12
41	9924	0.3548	0.0234	0.90	0.85
42	9924	2.3559	0.0235	1.12	1.40
43	9924	1.4487	0.0217	0.99	1.00

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	9924	1.2126	0.0217	1.06	1.09
45	9924	0.4830	0.0230	0.90	0.86
46	9924	0.6123	0.0226	1.00	1.01
47	9924	0.3554	0.0234	1.42	1.60
48	9924	1.1017	0.0218	0.89	0.86
49	9924	1.2511	0.0217	1.06	1.08
50	9924	1.1171	0.0218	0.94	0.93
51	9924	1.3303	0.0217	1.07	1.09
52	9924	2.0359	0.0225	1.16	1.30
53	9924	0.2430	0.0238	1.35	1.52
54	9924	-0.6912	0.0295	1.03	0.77
55	9924	1.0683	0.0218	1.16	1.23
56	9924	-1.7433	0.0426	1.39	1.09

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 5 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10104	0.2908	0.0242	0.96	0.94
2	10104	0.1860	0.0248	0.92	0.93
3	10104	-0.9690	0.0346	0.81	0.57
4	10104	0.9090	0.0220	1.09	1.09
5	10104	0.3170	0.0241	0.96	0.87
6	10104	0.8061	0.0223	1.02	1.00
7	10104	-0.2101	0.0272	1.07	1.08
8	10104	-0.4537	0.0292	1.25	1.25
9	10104	0.2817	0.0243	1.13	1.18
10	10104	0.8777	0.0221	0.89	0.83
11	10104	2.7794	0.0240	1.13	1.38
12	10104	0.7117	0.0226	1.11	1.18
13	10104	0.6798	0.0227	0.90	0.85
14	10104	1.1242	0.0216	0.95	0.92
15	10104	1.5297	0.0213	1.05	1.07
16	10104	0.9038	0.0221	1.03	1.06
17	10104	1.1124	0.0216	0.95	0.91
18	10104	1.6380	0.0213	1.01	1.03
19	10104	1.1957	0.0215	1.09	1.13
20	10104	-0.2252	0.0274	0.87	0.74
21	10104	0.2222	0.0246	0.83	0.70
22	10104	1.5237	0.0213	1.13	1.18
23	10104	1.4818	0.0213	0.97	0.96
24	10104	2.1427	0.0219	0.97	1.00
25	10104	0.3239	0.0241	0.89	0.86
26	10104	0.8633	0.0222	1.14	1.20
27	10104	1.7715	0.0214	1.15	1.19
28	10104	1.1976	0.0215	1.18	1.24
29	10104	2.1150	0.0218	1.08	1.15
30	10104	1.3272	0.0214	1.02	1.02
31	10104	0.9058	0.0220	0.99	0.98
32	10104	1.3410	0.0214	1.06	1.08
33	10104	1.0204	0.0218	1.02	1.03
34	10104	0.8770	0.0221	0.91	0.88
35	10104	1.1920	0.0215	0.87	0.84
36	10104	0.0542	0.0255	0.83	0.73
37	10104	1.1183	0.0216	1.00	1.01
38	10104	0.2107	0.0246	0.93	0.85
39	10104	0.7756	0.0224	1.16	1.20
40	10104	0.1605	0.0249	0.74	0.62
41	10104	0.0214	0.0257	0.74	0.64
42	10104	1.0948	0.0217	0.94	0.92
43	10104	0.9230	0.0220	0.90	0.85

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10104	1.2078	0.0215	1.01	1.01
45	10104	0.9769	0.0219	0.96	0.94
46	10104	0.3189	0.0241	0.91	0.85
47	10104	0.9095	0.0220	1.06	1.08
48	10104	0.9171	0.0220	1.00	1.01
49	10104	0.4891	0.0234	1.18	1.23
50	10104	0.3110	0.0241	1.22	1.38
51	10104	0.3780	0.0238	1.11	1.12
52	10104	1.1200	0.0216	1.12	1.15
53	10104	2.3280	0.0223	1.08	1.17
54	10104	1.0294	0.0218	1.04	1.06
55	10104	-0.3699	0.0285	0.98	0.83
56	10104	0.7030	0.0226	0.99	0.94

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 6 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10023	1.0080	0.0236	1.31	1.51
2	10023	0.2938	0.0272	0.88	0.72
3	10023	0.6327	0.0252	1.07	1.11
4	10023	1.4770	0.0223	1.12	1.15
5	10023	1.2487	0.0229	0.92	0.87
6	10023	1.0925	0.0233	0.97	0.93
7	10023	0.0477	0.0289	0.91	0.84
8	10023	0.9198	0.0240	0.95	0.93
9	10023	3.5210	0.0255	1.00	1.54
10	10023	1.7115	0.0220	1.06	1.07
11	10023	0.1770	0.0280	0.86	0.86
12	10023	2.5280	0.0221	1.07	1.24
13	10023	0.1312	0.0283	1.00	0.98
14	10023	0.5445	0.0257	0.88	0.77
15	10023	0.5012	0.0259	0.84	0.73
16	10023	2.1028	0.0217	0.99	1.01
17	10023	0.2320	0.0276	0.88	0.75
18	10023	0.0739	0.0287	0.92	0.83
19	10023	1.1563	0.0231	0.92	0.86
20	10023	1.1789	0.0231	0.93	0.91
21	10023	0.5724	0.0255	0.92	0.89
22	10023	2.7621	0.0225	1.12	1.24
23	10023	0.8134	0.0244	0.95	0.90
24	10023	0.4779	0.0261	0.75	0.67
25	10023	0.6602	0.0251	1.20	1.22
26	10023	0.4758	0.0261	0.91	0.80
27	10023	2.5063	0.0220	1.13	1.24
28	10023	2.5512	0.0221	1.03	1.14
29	10023	1.1531	0.0231	0.85	0.80
30	10023	1.4714	0.0223	1.01	1.04
31	10023	3.0855	0.0235	1.09	1.38
32	10023	1.5280	0.0222	1.05	1.05
33	10023	2.3774	0.0219	1.20	1.32
34	10023	0.2141	0.0277	0.83	0.67
35	10023	0.3479	0.0268	1.03	1.08
36	10023	2.3262	0.0218	1.20	1.34
37	10023	1.8850	0.0218	1.05	1.08
38	10023	1.2508	0.0229	0.92	0.89
39	10023	2.3172	0.0218	1.08	1.18
40	10023	2.6254	0.0222	1.09	1.19
41	10023	0.7301	0.0248	0.75	0.67
42	10023	0.6840	0.0250	1.10	1.16
43	10023	1.9040	0.0218	1.07	1.09

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10023	2.1229	0.0217	1.22	1.32
45	10023	1.0045	0.0236	0.89	0.82
46	10023	2.5365	0.0221	1.27	1.43
47	10023	1.0882	0.0234	1.02	1.04
48	10023	-1.0110	0.0408	1.08	0.77
49	10023	-0.0820	0.0300	1.06	0.96
50	10023	0.2090	0.0277	0.82	0.64
51	10023	1.0350	0.0235	1.00	0.93
52	10023	-0.0208	0.0295	0.89	0.62
53	10023	-0.1505	0.0306	1.02	0.80
54	10023	0.5358	0.0257	1.01	1.01
55	10023	1.8921	0.0218	1.03	1.05
56	10023	0.1450	0.0282	0.78	0.59

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 7 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10378	0.0690	0.0306	0.84	0.72
2	10378	1.8250	0.0217	0.97	0.96
3	10378	2.2140	0.0213	1.00	1.00
4	10378	1.0090	0.0242	1.13	1.14
5	10378	1.5563	0.0222	1.07	1.11
6	10378	2.0140	0.0215	1.06	1.06
7	10378	0.7900	0.0253	0.91	0.84
8	10378	2.0961	0.0214	1.09	1.11
9	10378	1.7662	0.0218	1.03	1.04
10	10378	1.7900	0.0218	1.08	1.08
11	10378	0.4440	0.0275	0.80	0.72
12	10378	1.6410	0.0220	1.08	1.14
13	10378	0.7270	0.0256	0.96	0.98
14	10378	2.6066	0.0215	1.14	1.20
15	10378	2.0715	0.0214	1.10	1.13
16	10378	2.4261	0.0213	1.07	1.09
17	10378	1.2307	0.0232	0.94	0.89
18	10378	2.1021	0.0214	1.04	1.05
19	10378	-0.1330	0.0326	1.00	0.99
20	10378	1.0790	0.0238	0.98	0.92
21	10378	1.7190	0.0219	1.14	1.19
22	10378	-0.0840	0.0321	0.95	0.98
23	10378	1.3864	0.0227	0.98	0.91
24	10378	2.5342	0.0214	1.06	1.09
25	10378	1.8805	0.0216	1.04	1.03
26	10378	2.6230	0.0215	1.16	1.25
27	10378	1.5653	0.0222	0.94	0.88
28	10378	0.8201	0.0251	0.88	0.75
29	10378	2.1589	0.0214	0.96	0.97
30	10378	1.2154	0.0233	0.99	1.02
31	10378	2.8103	0.0217	1.18	1.28
32	10378	2.0131	0.0215	0.99	0.99
33	10378	2.4321	0.0213	1.04	1.05
34	10378	1.6243	0.0221	0.97	0.95
35	10378	1.8369	0.0217	0.87	0.82
36	10378	0.5141	0.0270	0.94	0.87
37	10378	0.7726	0.0254	0.88	0.76
38	10378	0.8030	0.0252	0.86	0.80
39	10378	1.3480	0.0228	0.88	0.82
40	10378	1.1443	0.0236	0.88	0.79
41	10378	1.5837	0.0222	0.89	0.84
42	10378	2.5170	0.0214	0.99	1.02
43	10378	2.2730	0.0213	1.20	1.27

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10378	2.5096	0.0214	1.08	1.12
45	10378	2.1253	0.0214	0.93	0.92
46	10378	0.1175	0.0301	0.89	0.68
47	10378	0.9568	0.0244	0.84	0.74
48	10378	2.5258	0.0214	1.17	1.24
49	10378	0.9520	0.0244	0.89	0.79
50	10378	2.1620	0.0214	0.97	0.97
51	10378	2.2459	0.0213	0.95	0.96
52	10378	0.6080	0.0263	0.88	0.71
53	10378	1.5131	0.0223	1.08	1.15
54	10378	2.5592	0.0214	1.10	1.17
55	10378	2.2799	0.0213	1.07	1.10
56	10378	2.4528	0.0214	1.09	1.13

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/29/07

Rasch (IRT) Item Statistics: Grade 8 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10632	-0.9770	0.0507	0.66	0.68
2	10632	1.9830	0.0214	1.11	1.14
3	10632	0.7660	0.0269	1.26	1.48
4	10632	2.5944	0.0208	1.27	1.34
5	10632	3.7651	0.0234	1.14	1.36
6	10632	1.9268	0.0215	1.02	1.03
7	10632	1.9282	0.0215	0.88	0.82
8	10632	2.6603	0.0208	0.97	0.97
9	10632	3.4424	0.0222	1.03	1.10
10	10632	3.3271	0.0218	1.11	1.24
11	10632	1.9200	0.0216	1.04	1.03
12	10632	2.7690	0.0209	1.09	1.16
13	10632	1.2100	0.0241	0.88	0.85
14	10632	2.3480	0.0209	1.02	1.02
15	10632	1.6880	0.0222	1.07	1.08
16	10632	2.3940	0.0209	1.13	1.17
17	10632	1.7420	0.0220	0.99	0.97
18	10632	2.5356	0.0208	0.97	0.97
19	10632	2.3705	0.0209	1.14	1.18
20	10632	1.3540	0.0234	1.03	0.99
21	10632	2.5460	0.0208	1.09	1.11
22	10632	1.8228	0.0218	0.98	1.01
23	10632	1.5730	0.0226	0.81	0.74
24	10632	1.1834	0.0243	0.95	1.04
25	10632	1.4537	0.0230	0.87	0.77
26	10632	1.5470	0.0227	0.88	0.83
27	10632	1.9502	0.0215	1.02	1.02
28	10632	1.8301	0.0218	1.00	1.00
29	10632	0.6443	0.0278	0.89	0.75
30	10632	2.3758	0.0209	1.17	1.21
31	10632	1.5413	0.0227	0.94	0.90
32	10632	1.5310	0.0227	0.82	0.79
33	10632	3.0320	0.0212	1.28	1.38
34	10632	1.3690	0.0234	1.00	1.07
35	10632	1.1893	0.0242	0.85	0.73
36	10632	2.0221	0.0213	0.90	0.85
37	10632	1.8016	0.0218	1.08	1.12
38	10632	2.3462	0.0209	1.12	1.16
39	10632	1.9874	0.0214	1.06	1.05
40	10632	1.9375	0.0215	0.97	0.95
41	10632	1.9141	0.0216	0.94	0.92
42	10632	1.9323	0.0215	1.00	1.00
43	10632	2.4406	0.0209	0.89	0.88

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10632	1.5568	0.0226	0.85	0.76
45	10632	2.4182	0.0209	0.93	0.91
46	10632	1.7987	0.0219	1.06	1.09
47	10632	1.9837	0.0214	0.85	0.80
48	10632	1.7060	0.0221	0.84	0.76
49	10632	2.4190	0.0209	1.02	1.03
50	10632	1.5594	0.0226	0.94	0.88
51	10632	2.1099	0.0212	1.00	0.99
52	10632	3.1338	0.0214	0.98	1.05
53	10632	3.2696	0.0217	1.15	1.25
54	10632	2.9153	0.0210	1.23	1.31
55	10632	2.0128	0.0214	0.95	0.92
56	10632	1.5199	0.0228	0.96	0.92

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/29/07

Rasch (IRT) Item Statistics: Grade 11 Reading

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9499	1.8770	0.0284	0.68	0.54
2	9499	2.3990	0.0253	1.09	1.25
3	9499	2.1820	0.0264	0.94	0.98
4	9499	3.5640	0.0225	1.03	1.06
5	9499	1.9050	0.0282	0.83	0.89
6	9499	2.8300	0.0237	0.97	0.98
7	9499	3.0831	0.0230	0.97	0.93
8	9499	2.0040	0.0275	0.90	0.84
9	9499	3.1029	0.0230	0.97	0.96
10	9499	4.2143	0.0229	1.23	1.41
11	9499	2.9295	0.0234	1.06	1.13
12	9499	1.9980	0.0276	0.65	0.51
13	9499	4.5705	0.0238	0.95	1.04
14	9499	3.1013	0.0230	1.07	1.07
15	9499	1.4701	0.0318	0.89	0.75
16	9499	3.2341	0.0228	1.11	1.15
17	9499	1.7144	0.0297	0.98	0.98
18	9499	1.3496	0.0330	1.01	1.02
19	9499	3.6034	0.0225	0.95	0.96
20	9499	2.4708	0.0250	0.89	0.82
21	9499	4.8397	0.0248	1.09	1.45
22	9499	1.3308	0.0332	0.92	0.78
23	9499	3.1700	0.0229	1.21	1.27
24	9499	2.6500	0.0243	1.04	1.12
25	9499	3.2460	0.0228	0.98	0.96
26	9499	1.8772	0.0284	0.91	0.80
27	9499	2.7295	0.0240	1.02	1.07
28	9499	2.9200	0.0234	0.89	0.84
29	9499	3.0450	0.0231	0.85	0.81
30	9499	1.9755	0.0277	0.87	0.72
31	9499	3.2970	0.0227	1.00	1.01
32	9499	2.7538	0.0239	0.99	0.98
33	9499	1.2855	0.0337	0.84	0.57
34	9499	4.0373	0.0227	1.06	1.12
35	9499	4.0556	0.0227	1.24	1.42
36	9499	1.1697	0.0350	0.91	0.68
37	9499	2.5192	0.0248	0.93	0.92
38	9499	3.4702	0.0225	0.93	0.93
39	9499	1.6790	0.0299	0.84	0.63
40	9499	3.5415	0.0225	1.13	1.20

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/29/07

Rasch (IRT) Item Statistics: Grade 3 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10082	-0.1671	0.0241	1.02	0.99
2	10082	-2.4248	0.0441	1.02	1.05
3	10082	-1.3629	0.0310	1.12	1.35
4	10082	0.4058	0.0227	1.06	1.08
5	10082	0.6665	0.0224	1.11	1.15
6	10082	0.0704	0.0234	0.95	0.96
7	10082	-1.3619	0.0310	0.95	0.90
8	10082	-0.8310	0.0272	0.98	0.94
9	10082	-1.0655	0.0287	1.08	1.33
10	10082	-1.9443	0.0371	0.93	0.91
11	10082	0.2470	0.0230	1.10	1.13
12	10082	-0.9822	0.0281	0.87	0.70
13	10082	0.6726	0.0224	1.13	1.17
14	10082	1.2940	0.0225	1.03	1.11
15	10082	-1.1716	0.0295	0.94	0.91
16	10082	-1.9318	0.0369	0.93	0.80
17	10082	-0.3294	0.0247	1.14	1.15
18	10082	0.1218	0.0233	0.94	0.89
19	10082	1.0869	0.0224	1.06	1.14
20	10082	-0.5281	0.0256	0.99	1.02
21	10082	0.1355	0.0233	1.10	1.10
22	10082	0.3696	0.0228	0.99	0.96
23	10082	-1.4202	0.0315	0.92	0.75
24	10082	-1.1358	0.0292	0.88	0.73
25	10082	-0.3900	0.0250	1.14	1.35
26	10082	-1.2941	0.0304	0.87	0.80
27	10082	0.9030	0.0223	1.01	1.04
28	10082	-1.7735	0.0351	0.90	0.80
29	10082	-1.1410	0.0292	0.99	1.13
30	10082	-1.3272	0.0307	0.97	0.94
31	10082	-2.5508	0.0463	0.95	0.77
32	10082	0.0837	0.0234	0.92	0.86
33	10082	-1.1824	0.0296	0.89	1.09
34	10082	-1.0032	0.0283	0.88	0.74
35	10082	-1.6048	0.0333	0.91	0.79
36	10082	0.5226	0.0226	0.99	0.99
37	10082	-0.4506	0.0252	0.87	0.77
38	10082	-1.1524	0.0293	0.86	0.69
39	10082	-0.1358	0.0240	1.12	1.25
40	10082	0.1806	0.0232	1.02	1.03
41	10082	-0.7768	0.0269	0.86	0.75
42	10082	0.6337	0.0225	1.05	1.09
43	10082	-1.7196	0.0345	0.96	1.08

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10082	-1.5160	0.0324	1.06	0.92
45	10082	-1.0706	0.0287	1.04	1.09
46	10082	0.8444	0.0223	1.10	1.19
47	10082	-0.4878	0.0254	1.01	0.99
48	10082	-0.6316	0.0261	0.93	0.94
49	10082	-2.1910	0.0404	0.86	0.51
50	10082	-0.1960	0.0242	0.98	0.92
51	10082	0.9157	0.0223	1.09	1.13
52	10082	-1.1077	0.0290	0.86	0.74
53	10082	-0.5489	0.0257	1.09	1.23
54	10082	-0.4438	0.0252	1.11	1.17
55	10082	0.3438	0.0228	1.14	1.19
56	10082	-0.2338	0.0244	0.95	0.88
57	10082	-0.0187	0.0237	0.95	0.90
58	10082	-2.3262	0.0425	0.89	0.64
59	10082	-0.6920	0.0264	0.92	0.83
60	10082	-1.0342	0.0285	0.91	0.79
61	10082	-0.9388	0.0279	0.98	0.99
62	10082	-0.8262	0.0272	0.86	0.69
63	10082	0.0470	0.0235	1.10	1.17
64	10082	-0.3254	0.0247	0.91	0.91
65	10082	-0.1506	0.0241	0.91	0.90
66	10082	0.3834	0.0228	1.11	1.11
67	10082	0.2021	0.0231	1.16	1.22
68	10082	0.5174	0.0226	0.94	0.94
69	10082	-0.9090	0.0277	0.87	0.75
70	10082	-1.0079	0.0283	1.15	1.41
71	10082	0.3265	0.0229	1.02	1.00
72	10082	-0.4515	0.0252	1.12	1.22
73	10082	-1.2208	0.0299	0.99	1.03
74	10082	-0.4972	0.0254	1.20	1.42
75	10082	0.1229	0.0233	0.99	1.00
76	10082	-1.1323	0.0292	0.82	0.65
77	10082	-0.5309	0.0256	0.88	0.76
78	10082	0.1838	0.0231	0.95	0.91
79	10082	-0.9179	0.0277	1.21	1.51
80	10082	0.6542	0.0224	0.98	0.98
81	10082	0.9974	0.0223	1.00	1.04
82	10082	1.3358	0.0226	0.93	1.01
83	10082	-1.2615	0.0302	1.05	1.17
84	10082	-1.1128	0.0290	0.99	1.04

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 4 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9936	-0.2791	0.0266	0.87	0.72
2	9936	-1.8137	0.0429	1.00	1.25
3	9936	1.1364	0.0223	1.14	1.17
4	9936	-0.1439	0.0259	0.95	0.88
5	9936	-0.7230	0.0298	0.91	0.89
6	9936	2.0795	0.0230	1.02	1.07
7	9936	-0.4299	0.0276	0.95	0.86
8	9936	-0.1344	0.0258	0.91	0.86
9	9936	1.7820	0.0225	1.12	1.25
10	9936	-1.1865	0.0342	0.95	0.87
11	9936	0.9858	0.0224	1.09	1.14
12	9936	1.1725	0.0222	0.95	0.92
13	9936	0.2417	0.0242	1.08	1.18
14	9936	1.6960	0.0224	1.11	1.17
15	9936	1.1324	0.0223	1.03	1.03
16	9936	0.5875	0.0231	0.97	0.98
17	9936	1.5101	0.0222	0.99	1.01
18	9936	0.6122	0.0230	1.17	1.20
19	9936	0.3326	0.0238	1.00	0.99
20	9936	-0.1297	0.0258	0.92	0.84
21	9936	-1.0743	0.0330	0.88	0.65
22	9936	-0.0651	0.0255	0.91	0.84
23	9936	-0.2070	0.0262	0.87	0.75
24	9936	0.7668	0.0227	0.95	0.91
25	9936	0.0277	0.0250	1.06	1.13
26	9936	1.6319	0.0223	1.08	1.14
27	9936	0.1500	0.0245	0.83	0.73
28	9936	-0.7693	0.0301	0.97	1.31
29	9936	0.0843	0.0248	1.03	1.05
30	9936	0.0501	0.0249	1.12	1.15
31	9936	1.4302	0.0222	1.22	1.32
32	9936	0.4313	0.0235	1.08	1.15
33	9936	1.6168	0.0223	1.10	1.20
34	9936	1.4589	0.0222	1.10	1.13
35	9936	-0.6840	0.0294	0.96	0.98
36	9936	0.5677	0.0232	1.00	0.97
37	9936	0.3879	0.0237	1.08	1.12
38	9936	-0.1311	0.0258	1.01	1.02
39	9936	1.1331	0.0223	1.03	1.03
40	9936	0.6027	0.0231	0.93	0.92
41	9936	0.4190	0.0236	0.90	0.81
42	9936	0.0830	0.0248	0.86	0.76
43	9936	0.8998	0.0225	0.94	0.91

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	9936	1.8174	0.0225	1.11	1.20
45	9936	-0.0535	0.0254	0.91	0.87
46	9936	1.6219	0.0223	1.07	1.12
47	9936	0.2186	0.0242	1.13	1.23
48	9936	0.5857	0.0231	1.04	1.07
49	9936	-0.6589	0.0292	0.88	0.76
50	9936	0.5784	0.0231	0.95	0.96
51	9936	2.0924	0.0231	1.24	1.45
52	9936	0.8609	0.0226	0.94	0.89
53	9936	0.0998	0.0247	0.95	0.86
54	9936	0.3884	0.0237	0.90	0.86
55	9936	0.0006	0.0252	0.86	0.81
56	9936	0.2725	0.0241	0.99	0.96
57	9936	0.4077	0.0236	0.91	0.84
58	9936	1.0297	0.0223	1.04	1.06
59	9936	0.9017	0.0225	1.05	1.05
60	9936	0.0373	0.0250	0.96	0.91
61	9936	-0.9634	0.0319	1.01	1.04
62	9936	0.7434	0.0228	1.08	1.10
63	9936	-0.6451	0.0291	0.94	0.85
64	9936	-0.2421	0.0264	1.09	1.17
65	9936	1.1495	0.0222	0.95	0.96
66	9936	0.7058	0.0228	1.04	1.11
67	9936	1.8066	0.0225	1.06	1.12
68	9936	-0.4648	0.0278	0.88	0.75
69	9936	0.6374	0.0230	1.12	1.14
70	9936	0.1913	0.0244	0.99	1.01
71	9936	-0.6295	0.0290	0.87	0.68
72	9936	0.4953	0.0233	1.03	1.01
73	9936	1.2666	0.0222	1.01	1.01
74	9936	0.1987	0.0243	0.98	0.94
75	9936	-0.1801	0.0261	0.89	0.81
76	9936	0.4334	0.0235	0.89	0.83
77	9936	-0.3972	0.0274	0.90	0.80
78	9936	0.9640	0.0224	1.17	1.25
79	9936	1.4038	0.0222	0.89	0.88
80	9936	-0.6545	0.0292	0.89	0.70
81	9936	2.0463	0.0230	0.92	0.94
82	9936	0.8863	0.0225	0.94	0.90
83	9936	0.0093	0.0251	1.04	1.09
84	9936	0.3122	0.0239	1.12	1.13

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 5 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10104	-1.3853	0.0434	0.92	0.68
2	10104	0.4238	0.0249	1.01	1.16
3	10104	-0.1030	0.0281	0.98	0.90
4	10104	-0.8908	0.0359	0.92	0.74
5	10104	1.8024	0.0219	1.08	1.11
6	10104	-0.7573	0.0343	0.93	0.78
7	10104	0.7710	0.0235	1.03	1.04
8	10104	0.9840	0.0229	0.95	0.95
9	10104	2.2956	0.0223	1.18	1.28
10	10104	1.2525	0.0223	1.26	1.43
11	10104	2.2043	0.0222	1.18	1.30
12	10104	0.3883	0.0251	0.96	0.88
13	10104	1.4493	0.0220	0.93	0.91
14	10104	0.1893	0.0262	1.10	1.25
15	10104	2.3770	0.0225	1.11	1.18
16	10104	1.7917	0.0219	1.06	1.09
17	10104	1.7340	0.0219	1.01	1.02
18	10104	1.2701	0.0223	0.99	0.96
19	10104	2.1140	0.0221	1.17	1.26
20	10104	0.5955	0.0242	0.87	0.77
21	10104	0.8752	0.0232	1.00	1.03
22	10104	0.3827	0.0251	1.00	1.13
23	10104	1.5258	0.0220	1.04	1.05
24	10104	1.1612	0.0225	0.89	0.84
25	10104	-0.2747	0.0295	0.93	0.88
26	10104	1.1145	0.0226	0.96	0.92
27	10104	0.5580	0.0243	0.95	0.94
28	10104	0.3047	0.0255	1.05	1.08
29	10104	-0.1572	0.0285	0.88	0.73
30	10104	2.4414	0.0226	0.97	1.04
31	10104	0.7559	0.0236	0.99	0.97
32	10104	0.3558	0.0253	1.06	1.17
33	10104	-0.6793	0.0334	1.00	0.99
34	10104	0.3233	0.0254	0.92	0.98
35	10104	-0.5846	0.0324	0.83	0.57
36	10104	0.5889	0.0242	1.09	1.17
37	10104	1.0861	0.0226	0.98	1.02
38	10104	1.8477	0.0219	1.00	1.02
39	10104	2.1231	0.0221	1.12	1.21
40	10104	2.1308	0.0221	1.10	1.19
41	10104	2.6833	0.0233	1.06	1.17
42	10104	1.2030	0.0224	1.01	1.02
43	10104	2.0298	0.0220	1.26	1.36

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10104	1.7535	0.0219	0.99	0.98
45	10104	0.5278	0.0244	0.91	0.85
46	10104	1.1897	0.0224	0.96	0.95
47	10104	1.3864	0.0221	0.95	0.92
48	10104	1.9580	0.0220	1.17	1.23
49	10104	0.5780	0.0242	0.84	0.80
50	10104	-0.2563	0.0293	0.86	0.70
51	10104	1.5165	0.0220	0.99	1.00
52	10104	1.2259	0.0224	0.82	0.75
53	10104	0.6749	0.0238	1.02	1.07
54	10104	2.1372	0.0221	1.03	1.07
55	10104	1.0556	0.0227	1.01	1.01
56	10104	1.3545	0.0222	0.98	0.97
57	10104	1.7956	0.0219	0.91	0.90
58	10104	0.2602	0.0258	0.92	0.90
59	10104	0.1090	0.0267	1.11	1.27
60	10104	-0.1935	0.0288	0.85	0.72
61	10104	1.9073	0.0219	1.07	1.10
62	10104	-0.4070	0.0306	0.97	0.95
63	10104	0.9216	0.0230	1.01	1.00
64	10104	0.5073	0.0245	1.24	1.45
65	10104	1.6338	0.0219	0.99	1.00
66	10104	1.3868	0.0221	0.98	0.95
67	10104	1.6095	0.0219	0.95	0.94
68	10104	-0.1088	0.0282	0.88	0.72
69	10104	-0.3771	0.0304	0.92	0.76
70	10104	1.1803	0.0224	0.93	0.87
71	10104	1.3258	0.0222	1.02	1.02
72	10104	1.1724	0.0224	1.04	1.00
73	10104	1.1404	0.0225	1.02	1.04
74	10104	0.1530	0.0264	1.01	1.08
75	10104	1.0564	0.0227	0.92	0.87
76	10104	0.1979	0.0261	0.85	0.77
77	10104	-0.0543	0.0278	0.90	0.80
78	10104	1.0657	0.0227	0.87	0.82
79	10104	0.7267	0.0237	1.00	0.99
80	10104	1.8884	0.0219	0.83	0.81
81	10104	1.4930	0.0220	0.94	0.92
82	10104	0.8567	0.0232	0.94	0.88
83	10104	1.5463	0.0220	1.05	1.06
84	10104	1.0393	0.0227	0.95	0.91

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 6 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10018	0.7147	0.0273	1.01	1.02
2	10018	1.0743	0.0253	0.88	0.78
3	10018	-0.6443	0.0417	0.95	0.88
4	10018	1.8636	0.0227	1.05	1.12
5	10018	1.4822	0.0237	1.02	0.99
6	10018	1.6505	0.0232	1.00	0.96
7	10018	2.9024	0.0225	1.22	1.32
8	10018	1.1097	0.0251	0.96	0.88
9	10018	2.4277	0.0222	1.10	1.15
10	10018	3.3985	0.0235	1.16	1.38
11	10018	1.0756	0.0253	0.91	0.81
12	10018	1.2279	0.0246	1.07	1.06
13	10018	2.8571	0.0224	1.10	1.18
14	10018	1.5133	0.0236	0.96	0.90
15	10018	1.6657	0.0232	1.05	1.05
16	10018	2.2952	0.0222	1.12	1.16
17	10018	3.6611	0.0245	0.96	1.11
18	10018	0.6216	0.0279	1.04	1.05
19	10018	2.2538	0.0222	0.91	0.89
20	10018	2.0705	0.0224	1.08	1.12
21	10018	3.0032	0.0226	1.14	1.23
22	10018	2.5904	0.0222	0.94	0.97
23	10018	1.2039	0.0247	0.97	1.02
24	10018	1.6451	0.0232	1.01	1.01
25	10018	1.3873	0.0240	1.12	1.13
26	10018	0.0850	0.0324	0.96	1.05
27	10018	0.0986	0.0322	0.83	0.61
28	10018	1.7363	0.0230	1.00	0.97
29	10018	0.1544	0.0317	0.87	0.70
30	10018	2.7887	0.0223	1.19	1.31
31	10018	1.9600	0.0226	1.45	1.57
32	10018	2.6391	0.0222	1.07	1.11
33	10018	0.6066	0.0280	0.89	0.82
34	10018	1.4187	0.0239	1.16	1.17
35	10018	1.1423	0.0250	0.96	1.01
36	10018	1.4365	0.0238	0.92	0.88
37	10018	0.2015	0.0313	0.82	0.66
38	10018	-0.1196	0.0346	0.87	0.70
39	10018	1.2395	0.0246	0.89	0.82
40	10018	-0.2148	0.0357	1.14	1.28
41	10018	1.2151	0.0247	0.99	0.97
42	10018	1.2419	0.0246	0.99	1.02
43	10018	1.1964	0.0247	0.85	0.75

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10018	0.6010	0.0280	0.88	0.73
45	10018	0.2864	0.0305	0.84	0.62
46	10018	1.5921	0.0234	0.92	0.88
47	10018	1.3576	0.0241	1.02	0.96
48	10018	1.7898	0.0229	0.88	0.84
49	10018	0.7335	0.0272	0.93	0.85
50	10018	0.5265	0.0286	0.89	0.79
51	10018	0.6256	0.0279	0.90	0.80
52	10018	0.0297	0.0329	0.87	0.72
53	10018	2.1029	0.0224	1.09	1.09
54	10018	3.5108	0.0239	1.04	1.17
55	10018	0.0583	0.0326	0.98	0.90
56	10018	2.7923	0.0223	0.94	0.93
57	10018	1.9594	0.0226	1.02	1.04
58	10018	0.7723	0.0269	0.96	1.00
59	10018	2.6913	0.0222	0.95	0.97
60	10018	2.2446	0.0222	0.96	0.95
61	10018	1.7613	0.0229	1.07	1.09
62	10018	1.2073	0.0247	1.01	0.96
63	10018	2.3904	0.0222	1.16	1.23
64	10018	2.5096	0.0222	1.07	1.11
65	10018	1.9428	0.0226	1.13	1.11
66	10018	1.4797	0.0237	0.92	0.85
67	10018	0.6959	0.0274	0.96	0.99
68	10018	0.1988	0.0313	0.98	0.83
69	10018	0.0244	0.0330	0.89	0.71
70	10018	-0.3059	0.0368	0.87	0.61
71	10018	2.2858	0.0222	1.14	1.17
72	10018	1.8201	0.0228	1.07	1.10
73	10018	2.0227	0.0225	1.03	1.07
74	10018	1.5038	0.0236	1.00	1.00
75	10018	2.5366	0.0222	0.98	1.01
76	10018	1.8153	0.0228	1.04	1.02
77	10018	0.5634	0.0283	0.95	0.86
78	10018	2.3678	0.0222	0.92	0.89
79	10018	2.3408	0.0222	0.86	0.84
80	10018	1.9499	0.0226	0.93	0.91
81	10018	1.0148	0.0256	0.96	0.92
82	10018	0.4618	0.0291	0.86	0.71
83	10018	0.4957	0.0288	1.02	1.22
84	10018	1.8122	0.0228	1.06	1.07

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 7 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10082	1.4118	0.0257	1.08	1.04
2	10082	2.1474	0.0232	1.06	1.06
3	10082	1.6419	0.0247	1.24	1.49
4	10082	1.9818	0.0236	0.89	0.82
5	10082	3.6496	0.0232	1.22	1.54
6	10082	0.5300	0.0317	0.93	0.98
7	10082	0.4951	0.0320	1.13	1.56
8	10082	3.0929	0.0224	1.15	1.22
9	10082	2.0200	0.0235	1.03	1.01
10	10082	1.8078	0.0241	1.08	1.08
11	10082	3.1645	0.0225	0.88	0.86
12	10082	3.1952	0.0225	1.07	1.15
13	10082	0.9014	0.0287	0.94	1.02
14	10082	1.9416	0.0237	1.07	1.18
15	10082	2.2000	0.0231	1.05	1.04
16	10082	1.8680	0.0239	1.22	1.51
17	10082	0.6017	0.0311	0.86	0.75
18	10082	1.1860	0.0269	0.91	0.79
19	10082	2.0883	0.0233	1.10	1.25
20	10082	1.7465	0.0243	0.91	0.84
21	10082	2.4674	0.0227	1.09	1.15
22	10082	2.1578	0.0232	1.02	1.02
23	10082	0.3084	0.0339	0.91	0.70
24	10082	1.7716	0.0243	0.96	0.98
25	10082	1.6769	0.0246	0.91	0.84
26	10082	0.2802	0.0342	0.89	0.65
27	10082	1.2223	0.0267	1.09	1.14
28	10082	1.3018	0.0263	0.99	0.94
29	10082	1.1334	0.0272	0.99	0.99
30	10082	0.3429	0.0335	0.76	0.64
31	10082	2.6115	0.0225	1.00	0.98
32	10082	2.0336	0.0235	0.95	0.90
33	10082	0.5327	0.0317	0.91	0.99
34	10082	1.6747	0.0246	1.20	1.32
35	10082	0.9856	0.0281	0.84	0.74
36	10082	2.4684	0.0227	0.97	0.96
37	10082	1.8195	0.0241	0.93	0.88
38	10082	3.5125	0.0230	1.05	1.20
39	10082	2.5527	0.0226	1.06	1.07
40	10082	1.2709	0.0264	0.91	0.83
41	10082	2.4268	0.0227	0.97	0.95
42	10082	1.2898	0.0263	1.15	1.35
43	10082	0.3407	0.0336	0.85	0.63

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10082	0.3106	0.0339	1.01	1.02
45	10082	2.2812	0.0229	0.82	0.77
46	10082	2.5276	0.0226	1.07	1.10
47	10082	0.8261	0.0293	0.78	0.56
48	10082	1.4765	0.0254	1.00	0.98
49	10082	2.0323	0.0235	1.03	1.00
50	10082	2.2915	0.0229	0.93	0.88
51	10082	3.4078	0.0228	1.17	1.29
52	10082	2.7430	0.0224	1.00	1.00
53	10082	3.6354	0.0232	1.15	1.32
54	10082	1.0948	0.0274	0.89	0.85
55	10082	1.3956	0.0258	0.88	0.83
56	10082	1.4424	0.0256	0.74	0.59
57	10082	3.0786	0.0224	1.21	1.35
58	10082	2.8430	0.0224	0.96	0.96
59	10082	2.1463	0.0232	1.09	1.11
60	10082	1.9290	0.0238	1.04	1.04
61	10082	2.8266	0.0224	0.98	0.98
62	10082	1.4692	0.0255	1.01	1.03
63	10082	2.1515	0.0232	0.87	0.78
64	10082	3.2539	0.0226	1.28	1.46
65	10082	2.3991	0.0227	1.01	0.98
66	10082	1.6195	0.0248	0.81	0.67
67	10082	2.3529	0.0228	0.99	0.96
68	10082	1.9129	0.0238	0.98	0.91
69	10082	1.0617	0.0276	0.94	0.88
70	10082	2.5747	0.0225	0.89	0.86
71	10082	0.2980	0.0340	0.91	0.68
72	10082	1.3240	0.0262	0.96	0.87
73	10082	2.5249	0.0226	0.97	0.95
74	10082	2.0562	0.0234	1.00	1.00
75	10082	2.1325	0.0232	1.09	1.10
76	10082	0.8559	0.0290	0.88	0.68
77	10082	1.3903	0.0258	0.82	0.70
78	10082	1.4131	0.0257	0.80	0.72
79	10082	1.5258	0.0252	0.90	0.82
80	10082	1.8512	0.0240	0.94	0.87
81	10082	0.5012	0.0320	0.89	0.68
82	10082	1.5418	0.0251	0.83	0.72
83	10082	2.7181	0.0224	1.11	1.15
84	10082	2.9597	0.0224	1.12	1.18

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 8 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10335	4.1913	0.0237	1.08	1.35
2	10335	2.7909	0.0221	1.24	1.32
3	10335	1.8228	0.0246	1.04	1.05
4	10335	2.8344	0.0221	0.90	0.87
5	10335	1.7817	0.0247	0.88	0.87
6	10335	2.4487	0.0226	1.02	1.05
7	10335	1.2441	0.0278	0.85	0.69
8	10335	0.8403	0.0311	0.90	0.70
9	10335	1.2402	0.0278	0.92	0.81
10	10335	2.6202	0.0223	0.90	0.85
11	10335	0.9426	0.0301	0.95	1.05
12	10335	1.9914	0.0239	0.97	0.95
13	10335	2.6172	0.0223	0.94	0.93
14	10335	1.6653	0.0253	0.94	0.87
15	10335	2.4014	0.0227	0.94	0.87
16	10335	1.9342	0.0241	0.96	0.95
17	10335	2.4519	0.0226	1.22	1.52
18	10335	2.0769	0.0236	0.97	0.91
19	10335	2.0747	0.0236	1.04	1.09
20	10335	2.9890	0.0220	1.12	1.16
21	10335	1.9512	0.0240	0.79	0.66
22	10335	2.0006	0.0239	1.11	1.17
23	10335	3.1278	0.0220	0.92	0.90
24	10335	3.7091	0.0225	1.10	1.18
25	10335	2.4622	0.0226	0.86	0.80
26	10335	1.2735	0.0276	0.95	0.93
27	10335	3.6616	0.0224	1.15	1.27
28	10335	0.8237	0.0312	0.84	0.64
29	10335	2.2211	0.0232	1.02	1.05
30	10335	2.6330	0.0223	1.08	1.11
31	10335	0.5593	0.0340	0.92	0.96
32	10335	0.9680	0.0299	0.88	0.75
33	10335	3.6948	0.0225	1.13	1.25
34	10335	2.2460	0.0231	0.86	0.80
35	10335	2.5526	0.0224	0.92	0.85
36	10335	2.5432	0.0224	0.99	1.00
37	10335	2.7830	0.0221	1.14	1.16
38	10335	3.4626	0.0222	1.06	1.12
39	10335	1.1521	0.0284	0.96	0.95
40	10335	2.4909	0.0225	1.02	1.09
41	10335	1.8695	0.0244	0.90	0.79
42	10335	3.2996	0.0220	1.09	1.14
43	10335	1.4284	0.0266	0.83	0.65

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10335	0.7030	0.0324	0.94	0.99
45	10335	3.1708	0.0220	0.88	0.85
46	10335	3.3045	0.0220	1.08	1.13
47	10335	3.7239	0.0225	1.10	1.22
48	10335	2.9826	0.0220	1.19	1.24
49	10335	2.4337	0.0226	0.97	0.96
50	10335	1.0891	0.0289	0.78	0.66
51	10335	2.9625	0.0220	1.00	0.99
52	10335	2.6497	0.0223	0.99	0.96
53	10335	2.4630	0.0226	0.82	0.74
54	10335	4.1867	0.0237	1.38	1.72
55	10335	2.8706	0.0220	1.06	1.05
56	10335	4.2891	0.0241	1.13	1.46
57	10335	1.8435	0.0245	0.95	0.85
58	10335	3.0087	0.0220	0.99	1.00
59	10335	2.0018	0.0239	1.04	1.19
60	10335	2.7118	0.0222	1.08	1.13
61	10335	1.2835	0.0275	0.94	0.86
62	10335	4.0640	0.0233	1.10	1.35
63	10335	2.7757	0.0221	0.93	0.89
64	10335	3.5695	0.0223	1.13	1.21
65	10335	1.7216	0.0250	0.88	0.82
66	10335	1.7958	0.0247	1.06	1.15
67	10335	2.2168	0.0232	0.99	0.95
68	10335	3.3882	0.0221	1.13	1.18
69	10335	2.4549	0.0226	1.02	1.14
70	10335	2.0366	0.0237	0.97	1.02
71	10335	3.3882	0.0221	0.90	0.90
72	10335	2.9086	0.0220	0.92	0.88
73	10335	2.6209	0.0223	0.99	1.01
74	10335	2.1590	0.0233	0.98	0.97
75	10335	1.7411	0.0249	0.84	0.72
76	10335	3.5980	0.0223	1.16	1.26
77	10335	3.3922	0.0221	0.89	0.88
78	10335	1.6212	0.0255	0.88	0.80
79	10335	4.0995	0.0235	1.00	1.13
80	10335	2.7084	0.0222	0.91	0.87
81	10335	2.3726	0.0228	0.94	0.86
82	10335	2.9699	0.0220	0.93	0.90
83	10335	2.9941	0.0220	1.05	1.04
84	10335	2.3754	0.0228	0.97	0.91

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 11 Mathematics

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9090	2.7036	0.0248	1.02	1.03
2	9090	1.7443	0.0298	0.91	0.86
3	9090	4.0801	0.0238	1.17	1.25
4	9090	3.3050	0.0236	1.10	1.15
5	9090	3.2240	0.0237	0.82	0.75
6	9090	3.2841	0.0236	1.05	1.04
7	9090	2.4159	0.0259	0.88	0.78
8	9090	3.7153	0.0235	1.11	1.13
9	9090	2.9205	0.0243	1.09	1.11
10	9090	1.6208	0.0308	0.98	1.16
11	9090	2.7619	0.0247	1.02	1.03
12	9090	2.9779	0.0241	0.91	0.86
13	9090	3.8890	0.0235	1.09	1.14
14	9090	1.5293	0.0316	0.89	0.80
15	9090	1.1046	0.0360	0.91	0.83
16	9090	2.2489	0.0267	0.87	0.73
17	9090	3.5891	0.0234	1.21	1.30
18	9090	2.1122	0.0274	0.93	0.83
19	9090	2.6679	0.0250	1.00	1.00
20	9090	2.4429	0.0258	1.00	0.93
21	9090	1.0913	0.0361	0.86	0.64
22	9090	2.8169	0.0245	0.78	0.68
23	9090	2.9949	0.0241	0.94	0.92
24	9090	3.1458	0.0238	0.95	0.89
25	9090	3.3680	0.0236	0.97	0.94
26	9090	1.9232	0.0286	0.84	0.66
27	9090	3.6875	0.0234	1.13	1.18
28	9090	1.8355	0.0292	1.06	1.05
29	9090	3.7259	0.0235	1.17	1.24
30	9090	3.0352	0.0240	0.92	0.87
31	9090	1.9714	0.0282	1.00	1.07
32	9090	3.5623	0.0234	1.10	1.11
33	9090	3.7816	0.0235	1.11	1.18
34	9090	2.7607	0.0247	0.86	0.81
35	9090	3.2614	0.0237	0.84	0.79
36	9090	2.5285	0.0254	0.86	0.73
37	9090	2.8430	0.0244	0.97	0.89
38	9090	2.6697	0.0250	0.94	0.95
39	9090	4.0756	0.0237	1.22	1.34
40	9090	4.0221	0.0237	1.14	1.21
41	9090	2.2185	0.0268	0.97	1.00
42	9090	3.7470	0.0235	1.09	1.12
43	9090	3.1794	0.0238	0.97	0.95

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	9090	3.9157	0.0236	0.83	0.80
45	9090	4.1311	0.0238	0.96	0.99
46	9090	2.3885	0.0260	0.82	0.66
47	9090	1.6465	0.0306	0.93	0.81
48	9090	3.0185	0.0240	0.89	0.83
49	9090	3.3905	0.0235	1.11	1.14
50	9090	3.9328	0.0236	1.13	1.21
51	9090	1.5454	0.0314	0.88	0.74
52	9090	3.8140	0.0235	1.00	1.02
53	9090	3.1973	0.0237	1.22	1.35
54	9090	2.7330	0.0248	0.87	0.80
55	9090	3.2123	0.0237	0.82	0.75
56	9090	2.0916	0.0275	0.93	0.86
57	9090	4.2628	0.0241	1.07	1.18
58	9090	3.8627	0.0235	1.11	1.18
59	9090	3.2911	0.0236	0.95	0.91
60	9090	3.8017	0.0235	1.12	1.16
61	9090	3.1841	0.0238	1.22	1.33
62	9090	3.9923	0.0236	0.86	0.83
63	9090	0.4989	0.0448	0.87	0.53
64	9090	1.6644	0.0304	0.95	0.86
65	9090	1.5113	0.0317	0.83	0.80
66	9090	5.1144	0.0270	0.95	1.08
67	9090	1.9266	0.0285	0.95	0.83
68	9090	4.6067	0.0249	1.21	1.53
69	9090	2.0738	0.0276	0.90	0.83
70	9090	3.2140	0.0237	1.05	1.06
71	9090	4.8600	0.0258	0.90	1.03
72	9090	2.6064	0.0252	0.97	0.92
73	9090	5.0467	0.0267	1.32	1.85
74	9090	2.6861	0.0249	0.93	0.88
75	9090	2.6316	0.0251	1.19	1.31
76	9090	3.1114	0.0239	0.87	0.80
77	9090	3.8568	0.0235	1.15	1.23
78	9090	2.8264	0.0245	1.06	1.04
79	9090	3.1065	0.0239	1.18	1.33
80	9090	2.8191	0.0245	0.94	0.87
81	9090	2.2178	0.0268	0.84	0.73
82	9090	1.4747	0.0321	0.86	0.76
83	9090	3.1988	0.0237	0.95	0.94
84	9090	2.9598	0.0242	0.95	0.90

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 5 Science

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10104	-0.5741	0.0251	0.88	0.77
2	10104	-0.7763	0.0263	0.95	0.89
3	10104	-0.8794	0.0270	1.01	1.01
4	10104	-1.6909	0.0347	0.93	0.74
5	10104	-0.5028	0.0247	1.11	1.24
6	10104	-0.7833	0.0263	1.12	1.14
7	10104	-0.1244	0.0230	0.93	0.90
8	10104	-0.0323	0.0227	0.95	0.93
9	10104	-0.4941	0.0246	1.00	1.00
10	10104	-0.4504	0.0244	1.00	0.99
11	10104	-0.4496	0.0244	1.01	0.97
12	10104	-0.2368	0.0235	0.99	1.04
13	10104	-0.4118	0.0242	0.97	0.97
14	10104	0.0070	0.0226	1.00	1.01
15	10104	1.2074	0.0216	1.06	1.09
16	10104	0.2597	0.0220	1.05	1.06
17	10104	-0.9788	0.0277	0.86	0.71
18	10104	0.9024	0.0214	0.97	0.97
19	10104	1.1687	0.0215	1.03	1.07
20	10104	0.9294	0.0214	0.97	0.97
21	10104	1.3646	0.0218	1.04	1.09
22	10104	0.6157	0.0214	0.95	0.93
23	10104	0.8293	0.0214	1.14	1.17
24	10104	0.5569	0.0215	1.09	1.16
25	10104	-1.0261	0.0281	0.92	0.82
26	10104	-0.8145	0.0265	0.78	0.70
27	10104	-0.1232	0.0230	0.93	0.88
28	10104	-0.4811	0.0246	1.05	1.13
29	10104	-0.9502	0.0275	1.00	1.04
30	10104	-0.3666	0.0240	0.88	0.83
31	10104	-0.8482	0.0267	0.99	1.05
32	10104	-0.2685	0.0236	0.91	0.84
33	10104	-0.2953	0.0237	0.91	0.84
34	10104	-0.3391	0.0239	0.90	0.82
35	10104	0.0427	0.0225	0.89	0.84
36	10104	-0.0703	0.0228	0.87	0.83
37	10104	0.1144	0.0223	0.87	0.81
38	10104	0.3869	0.0217	1.00	1.00
39	10104	1.3241	0.0218	1.07	1.15
40	10104	1.7813	0.0229	1.10	1.33
41	10104	1.5162	0.0222	1.24	1.37
42	10104	0.6676	0.0214	1.10	1.12
43	10104	0.6171	0.0214	0.91	0.90

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10104	0.2138	0.0221	1.03	1.03
45	10104	0.6074	0.0215	1.08	1.11
46	10104	0.5517	0.0215	1.01	1.01
47	10104	0.4877	0.0216	1.10	1.12
48	10104	-1.7255	0.0351	0.97	1.01
49	10104	-1.5771	0.0333	0.96	1.08
50	10104	-0.8488	0.0268	1.00	1.05
51	10104	-0.8420	0.0267	0.79	0.73
52	10104	-0.6851	0.0257	1.03	1.06
53	10104	-0.8533	0.0268	0.81	0.63
54	10104	-0.2863	0.0237	0.98	0.98
55	10104	0.3989	0.0217	0.88	0.84
56	10104	-0.1655	0.0232	0.96	0.95
57	10104	-0.5513	0.0249	0.88	0.80
58	10104	0.6247	0.0214	1.27	1.36
59	10104	0.4830	0.0216	0.96	0.94
60	10104	-0.1046	0.0230	1.07	1.12
61	10104	1.1144	0.0215	0.94	0.96
62	10104	-0.1406	0.0231	1.01	1.00
63	10104	0.6991	0.0214	1.03	1.04
64	10104	0.3196	0.0218	1.08	1.10
65	10104	1.3419	0.0218	1.14	1.22
66	10104	0.2273	0.0220	1.02	1.02
67	10104	0.4508	0.0216	1.02	1.00
68	10104	0.4167	0.0217	0.99	0.98
69	10104	-0.8774	0.0270	0.89	0.78
70	10104	1.1444	0.0215	1.00	1.03

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were not adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 8 Science

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	10330	-2.0998	0.0392	0.89	0.54
2	10330	-1.6302	0.0331	0.89	0.67
3	10330	-0.4370	0.0241	0.89	0.90
4	10330	-0.9664	0.0271	0.99	1.07
5	10330	-1.4277	0.0310	0.84	0.58
6	10330	-0.9107	0.0268	0.96	0.95
7	10330	-0.5669	0.0247	1.00	1.00
8	10330	-0.5602	0.0247	0.94	0.88
9	10330	-0.9150	0.0268	1.00	1.04
10	10330	-0.7132	0.0255	0.77	0.68
11	10330	0.3429	0.0218	1.00	1.00
12	10330	0.0176	0.0225	1.06	1.10
13	10330	-0.3944	0.0239	0.96	0.93
14	10330	-0.1692	0.0231	1.09	1.14
15	10330	0.5046	0.0216	1.12	1.17
16	10330	0.1802	0.0221	1.03	1.02
17	10330	-0.3938	0.0239	1.04	1.03
18	10330	0.1350	0.0222	0.89	0.85
19	10330	-0.0710	0.0227	1.01	1.00
20	10330	1.0277	0.0215	0.99	1.01
21	10330	1.3060	0.0218	0.97	1.00
22	10330	1.2491	0.0217	1.12	1.17
23	10330	0.1428	0.0222	0.95	0.92
24	10330	0.9917	0.0214	1.11	1.18
25	10330	-1.2343	0.0292	0.91	0.76
26	10330	-0.7835	0.0259	1.06	1.14
27	10330	-0.2790	0.0235	0.95	1.00
28	10330	-0.8245	0.0262	0.91	0.85
29	10330	-0.4090	0.0240	1.02	0.99
30	10330	-0.7841	0.0259	1.04	1.08
31	10330	-0.2307	0.0233	0.93	0.88
32	10330	-0.8303	0.0262	0.89	0.76
33	10330	0.7463	0.0214	0.96	0.95
34	10330	-0.1408	0.0230	0.92	0.85
35	10330	0.2719	0.0219	1.07	1.06
36	10330	0.2650	0.0219	0.96	0.94
37	10330	0.0462	0.0224	0.96	0.91
38	10330	0.5724	0.0215	1.07	1.08
39	10330	1.1878	0.0216	0.85	0.84
40	10330	0.0513	0.0224	0.87	0.82
41	10330	1.1883	0.0216	1.02	1.04
42	10330	1.0574	0.0215	1.05	1.10
43	10330	1.5595	0.0223	1.14	1.32

Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	10330	0.7133	0.0214	1.03	1.05
45	10330	1.3553	0.0218	1.11	1.18
46	10330	0.0447	0.0224	1.12	1.20
47	10330	0.8498	0.0214	1.01	1.01
48	10330	0.6728	0.0214	1.04	1.04
49	10330	0.1670	0.0221	0.98	0.96
50	10330	0.9839	0.0214	1.08	1.12
51	10330	-0.6484	0.0252	0.97	0.91
52	10330	-1.7209	0.0341	0.94	0.81
53	10330	-1.2854	0.0297	0.88	0.68
54	10330	0.1003	0.0223	0.92	0.90
55	10330	-0.3394	0.0237	0.89	0.83
56	10330	0.0827	0.0223	0.96	0.91
57	10330	0.7677	0.0214	1.04	1.07
58	10330	-0.2627	0.0234	0.91	0.84
59	10330	-0.5513	0.0247	0.89	0.84
60	10330	0.0359	0.0224	0.93	0.90
61	10330	0.2150	0.0220	1.00	1.01
62	10330	0.2598	0.0219	1.02	1.09
63	10330	0.8012	0.0214	1.09	1.12
64	10330	-0.6485	0.0252	0.93	0.96
65	10330	1.1330	0.0215	1.14	1.20
66	10330	1.2267	0.0217	1.14	1.22
67	10330	0.7063	0.0214	0.97	0.95
68	10330	0.8888	0.0214	1.18	1.24
69	10330	0.6583	0.0214	1.09	1.14
70	10330	0.8981	0.0214	1.08	1.11

[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were not adjusted by grade/level constant.
Data file 05/19/08

Rasch (IRT) Item Statistics: Grade 11 Science

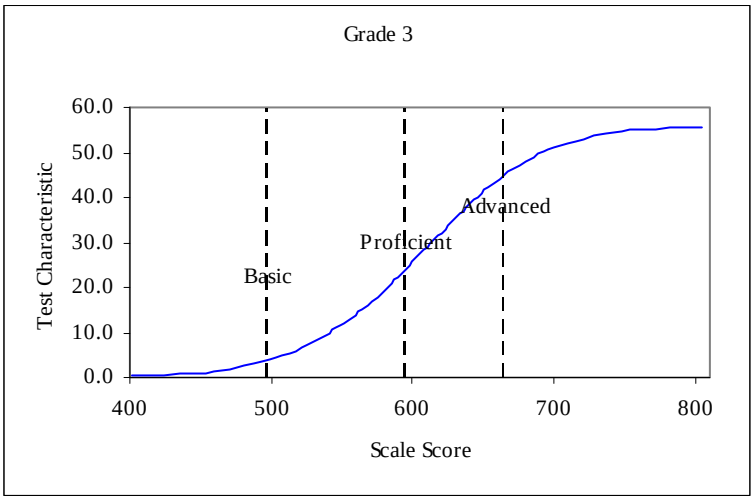
Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
1	9092	-2.6469	0.0506	0.97	0.89
2	9092	-1.5432	0.0333	0.92	0.79
3	9092	-1.0551	0.0289	0.95	0.88
4	9092	-0.8120	0.0272	0.92	0.85
5	9092	-0.3590	0.0248	1.00	1.02
6	9092	-0.5990	0.0259	0.89	0.80
7	9092	-0.6815	0.0264	0.88	0.79
8	9092	-0.6078	0.0260	1.03	1.22
9	9092	-1.0090	0.0285	0.83	0.65
10	9092	-0.4063	0.0250	1.15	1.26
11	9092	-1.0233	0.0286	0.88	0.82
12	9092	-0.7163	0.0266	0.94	0.87
13	9092	0.2557	0.0231	1.03	1.03
14	9092	-0.1671	0.0241	0.96	0.92
15	9092	-0.0839	0.0239	1.00	0.99
16	9092	-0.2062	0.0242	1.01	1.05
17	9092	-0.0850	0.0239	1.03	1.03
18	9092	-0.1907	0.0242	0.96	0.92
19	9092	-0.1771	0.0241	0.88	0.82
20	9092	0.4155	0.0228	1.00	0.98
21	9092	0.0180	0.0236	1.09	1.16
22	9092	-0.0052	0.0236	0.94	0.90
23	9092	0.5620	0.0227	0.95	0.93
24	9092	-0.0672	0.0238	1.11	1.16
25	9092	0.9145	0.0227	1.00	1.02
26	9092	0.6604	0.0227	1.01	1.01
27	9092	0.6187	0.0227	1.15	1.19
28	9092	1.0148	0.0228	1.04	1.08
29	9092	-1.3040	0.0309	0.81	0.80
30	9092	-0.4905	0.0254	0.86	0.80
31	9092	0.0010	0.0236	1.04	1.04
32	9092	-0.4793	0.0254	0.88	0.78
33	9092	0.6687	0.0227	1.06	1.08
34	9092	0.0621	0.0235	1.05	1.11
35	9092	0.1119	0.0233	1.05	1.07
36	9092	0.2439	0.0231	1.05	1.05
37	9092	0.4250	0.0228	1.08	1.09
38	9092	-0.2415	0.0244	0.98	1.00
39	9092	0.0504	0.0235	0.99	0.99
40	9092	0.1767	0.0232	1.00	1.02
41	9092	0.2771	0.0230	1.12	1.17
42	9092	0.3115	0.0230	0.92	0.90
43	9092	0.7212	0.0227	1.01	1.02

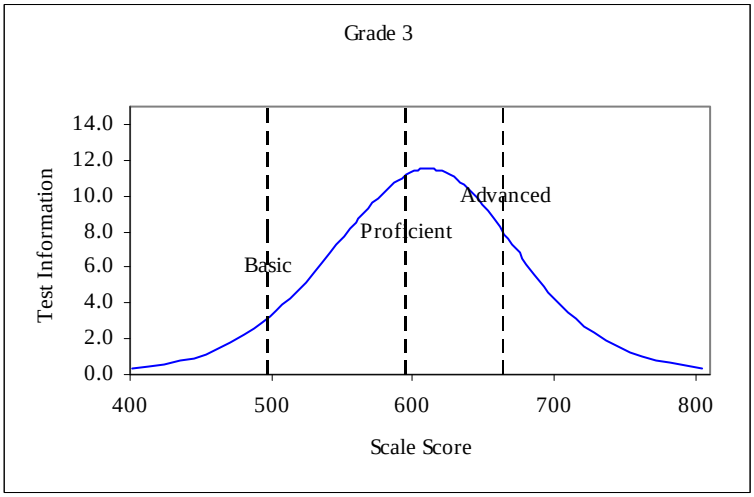
Item Number	N-count[1]	Rasch Difficulty[2]	Difficulty SE	Infit	Outfit
44	9092	1.0464	0.0229	1.17	1.24
45	9092	0.4634	0.0228	0.93	0.90
46	9092	0.8654	0.0227	1.29	1.39
47	9092	0.9743	0.0228	1.02	1.06
48	9092	0.8603	0.0227	0.91	0.90
49	9092	0.9041	0.0227	1.07	1.09
50	9092	1.4115	0.0235	1.11	1.23
51	9092	1.3691	0.0234	1.19	1.30
52	9092	0.4188	0.0228	1.05	1.08
53	9092	0.7623	0.0227	0.91	0.89
54	9092	0.6380	0.0227	1.08	1.11
55	9092	0.8952	0.0227	0.95	0.97
56	9092	1.0692	0.0229	1.07	1.13
57	9092	-0.8091	0.0272	0.93	0.88
58	9092	-0.9107	0.0278	0.97	0.94
59	9092	-0.5842	0.0259	0.96	0.97
60	9092	-0.6370	0.0262	0.92	0.82
61	9092	-0.6772	0.0264	0.85	0.73
62	9092	-0.9880	0.0284	0.87	0.75
63	9092	-0.6471	0.0262	0.93	0.87
64	9092	-0.6403	0.0262	1.05	1.17
65	9092	-0.4740	0.0253	0.89	0.82
66	9092	-0.8375	0.0273	0.82	0.67
67	9092	-0.4481	0.0252	0.90	0.81
68	9092	-0.2200	0.0243	0.97	0.98
69	9092	-0.0297	0.0237	1.00	1.00
70	9092	-0.0120	0.0236	0.93	0.89
71	9092	0.0769	0.0234	0.94	0.90
72	9092	0.6621	0.0227	1.08	1.08
73	9092	0.5864	0.0227	1.10	1.12
74	9092	0.4518	0.0228	0.88	0.85
75	9092	0.3530	0.0229	0.93	0.90
76	9092	0.8419	0.0227	1.15	1.19
77	9092	0.1853	0.0232	1.01	1.03
78	9092	0.9716	0.0228	1.02	1.04
79	9092	0.8409	0.0227	0.94	0.94
80	9092	0.7821	0.0227	1.10	1.12
81	9092	1.0068	0.0228	0.99	1.00
82	9092	0.6291	0.0227	1.13	1.17
83	9092	0.7071	0.0227	0.92	0.91
84	9092	1.4497	0.0236	1.11	1.24

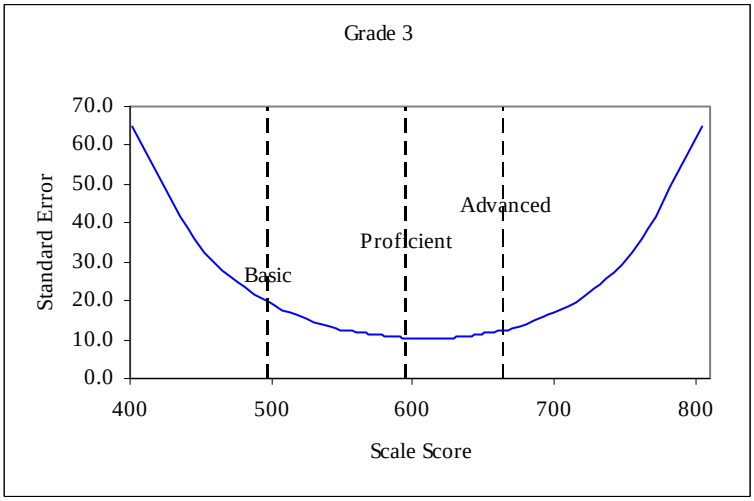
[1] Valid test scores except extreme scores were included in the calibration.
[2] Rasch difficulties were not adjusted by grade/level constant.
Data file 05/19/08

APPENDIX E: Test Characteristic, Test Information, and Conditional Standard Error Curves

Dakota STEP Reading

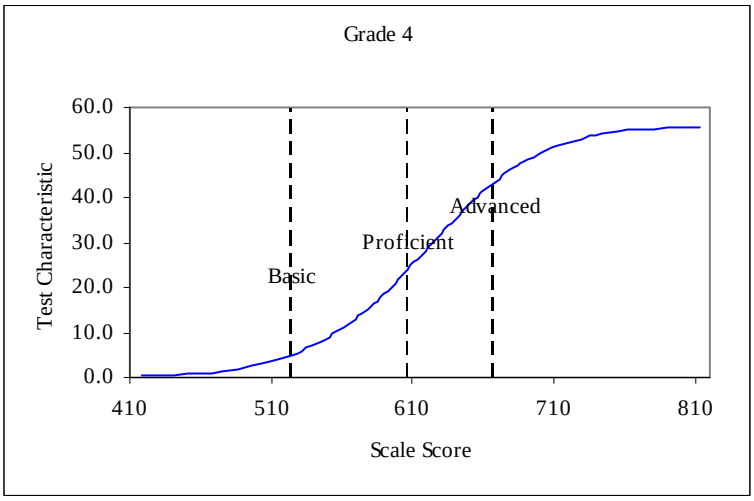


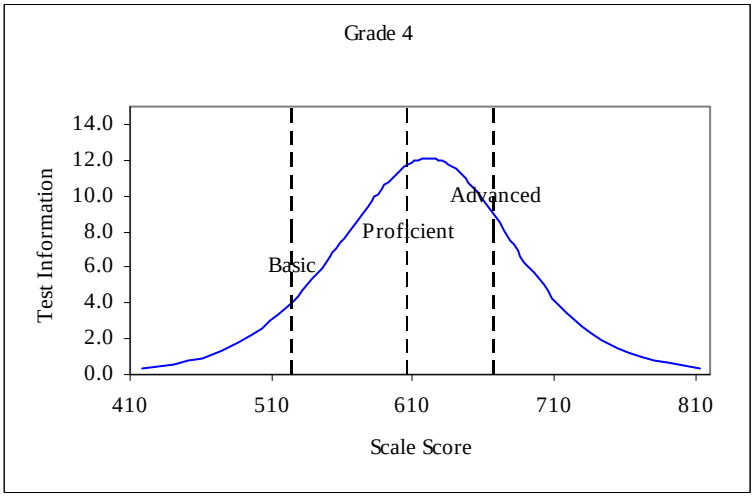


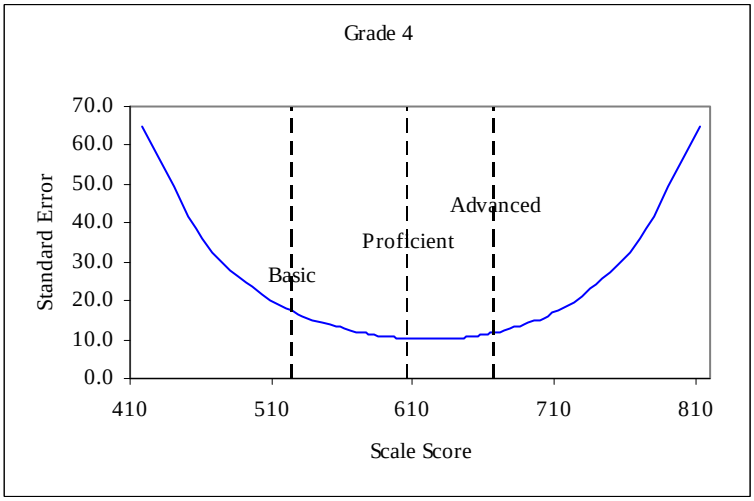


Data file 5/29/07

Dakota STEP Reading

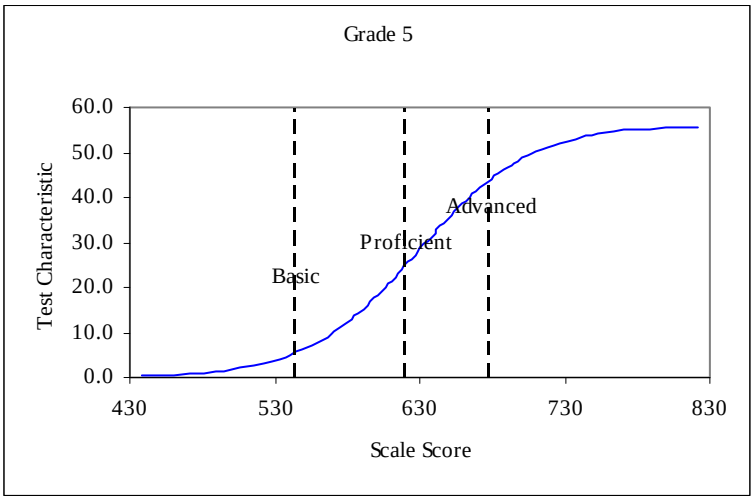


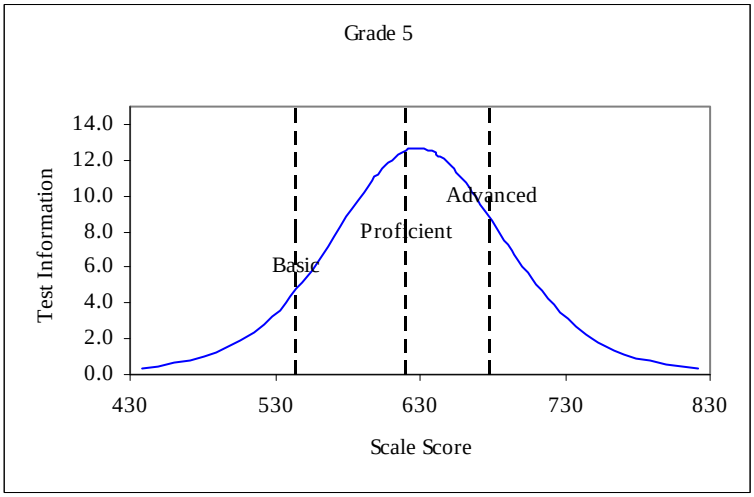


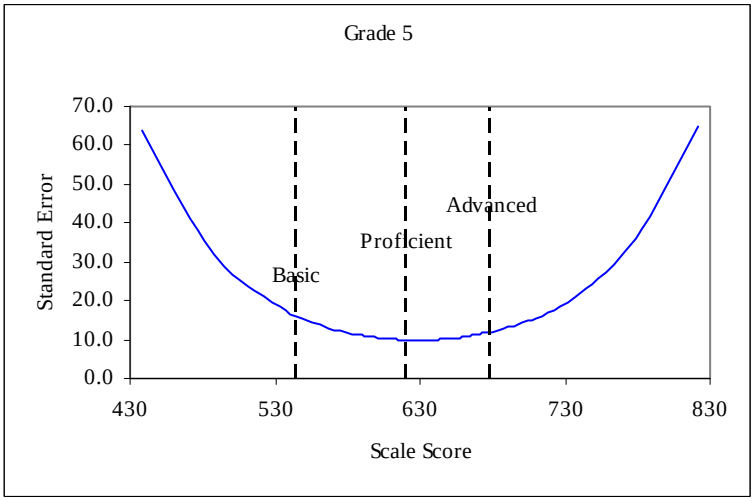


Data file 5/19/08

Dakota STEP Reading

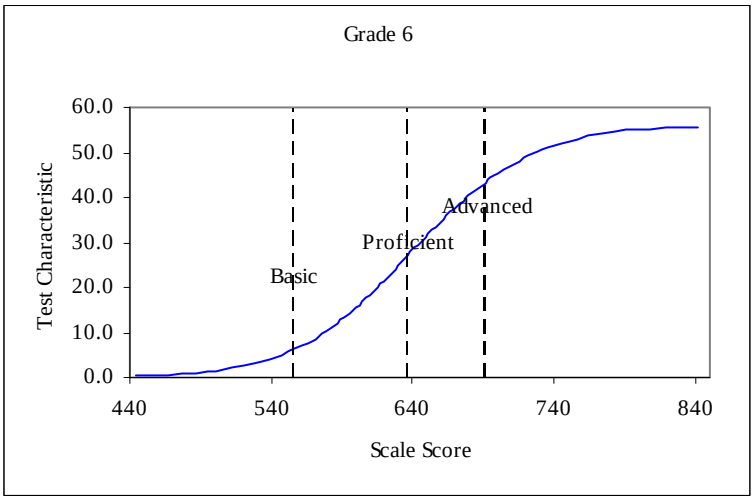


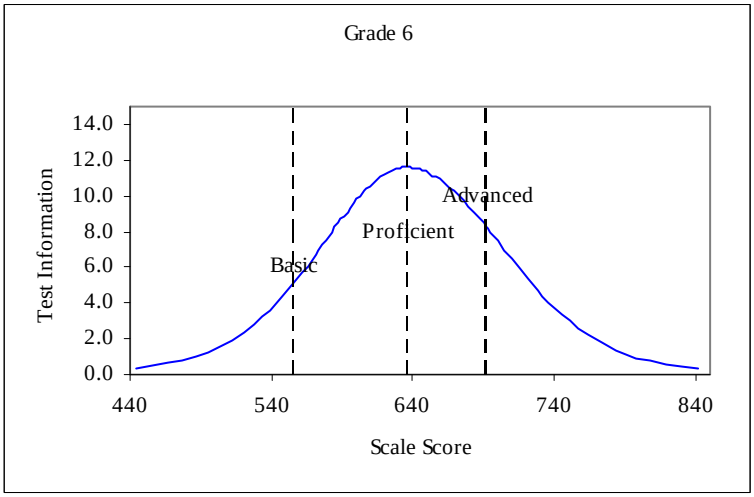


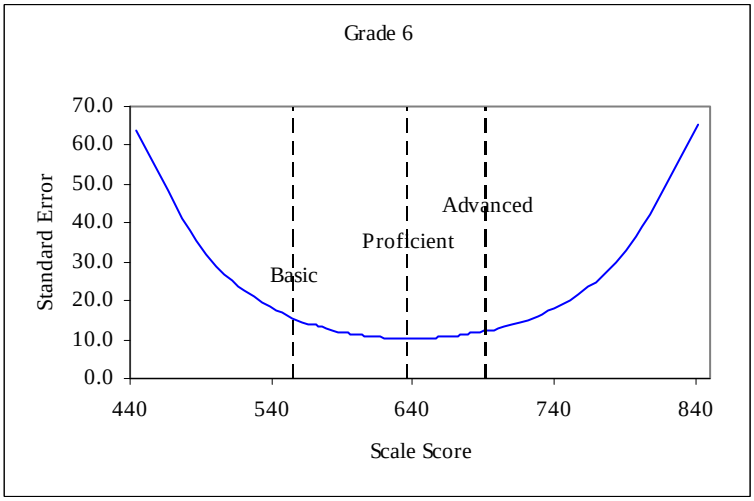


Data file 5/19/08

Dakota STEP Reading







Data file 5/19/08

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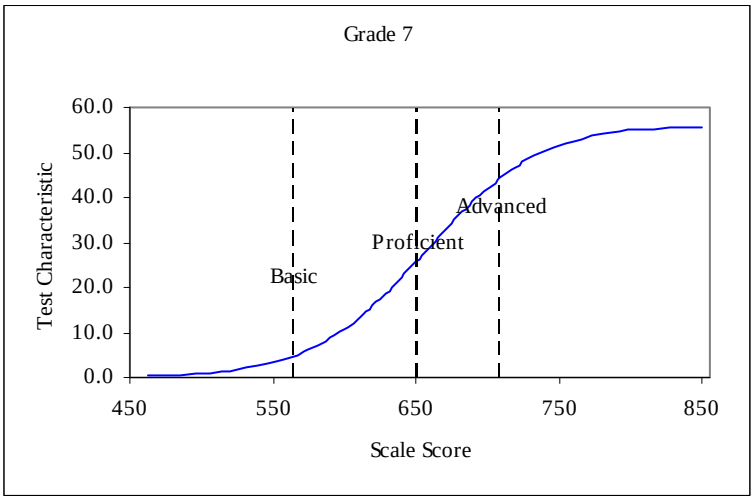

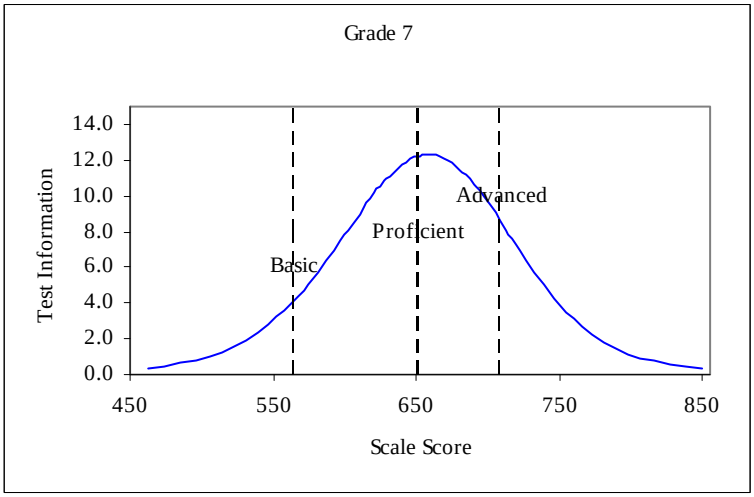

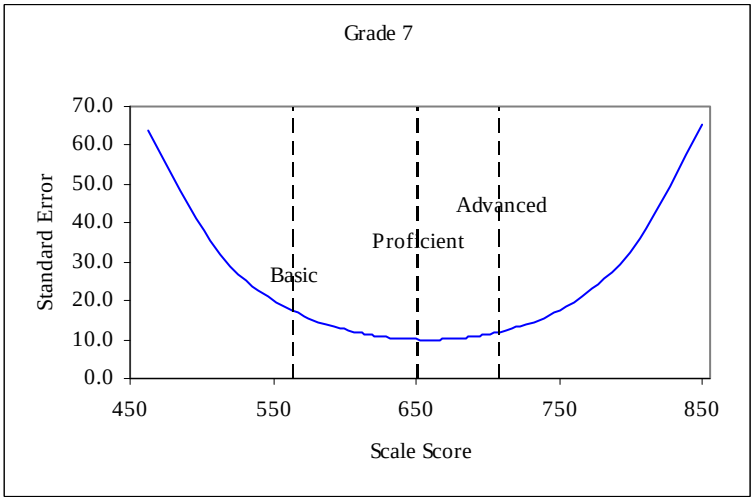

Data file 5/29/07

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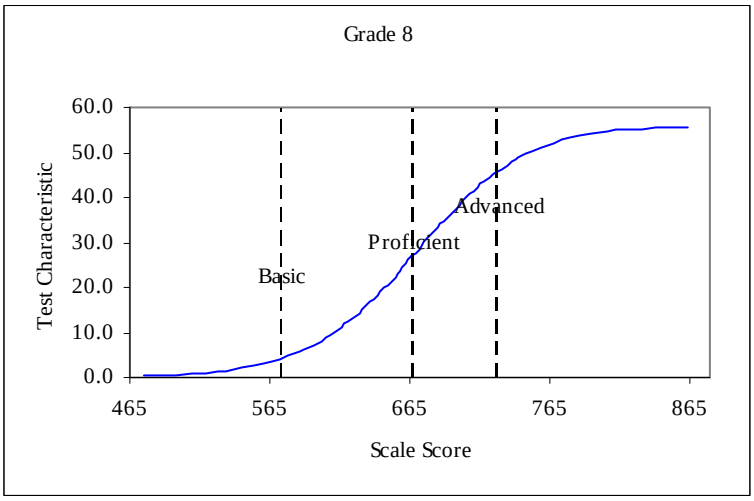

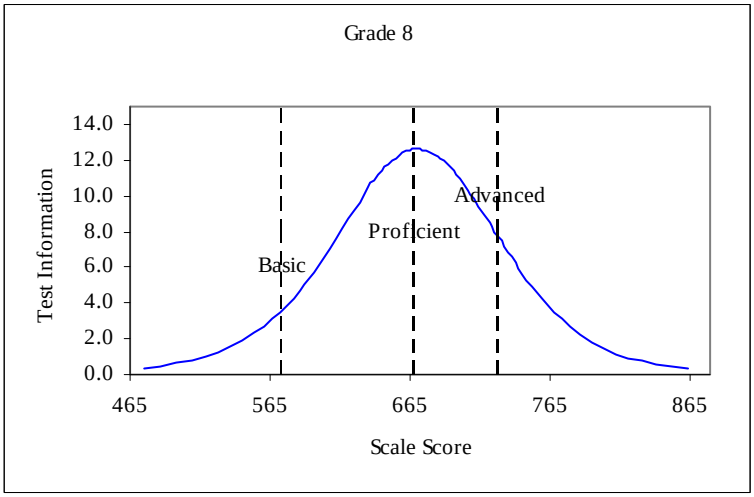

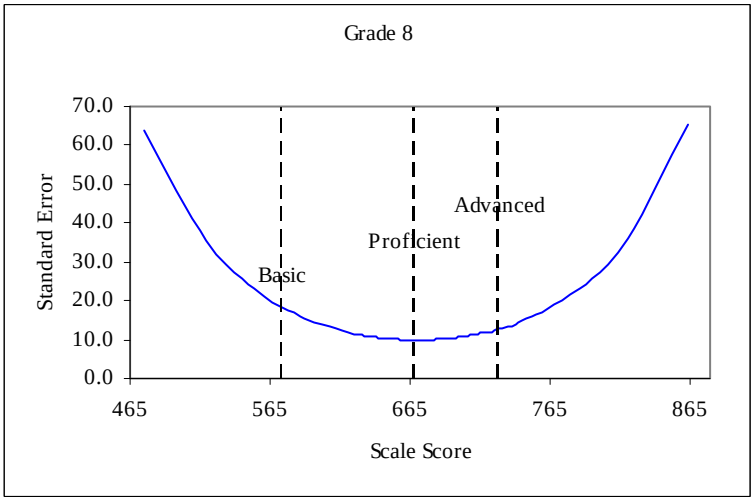

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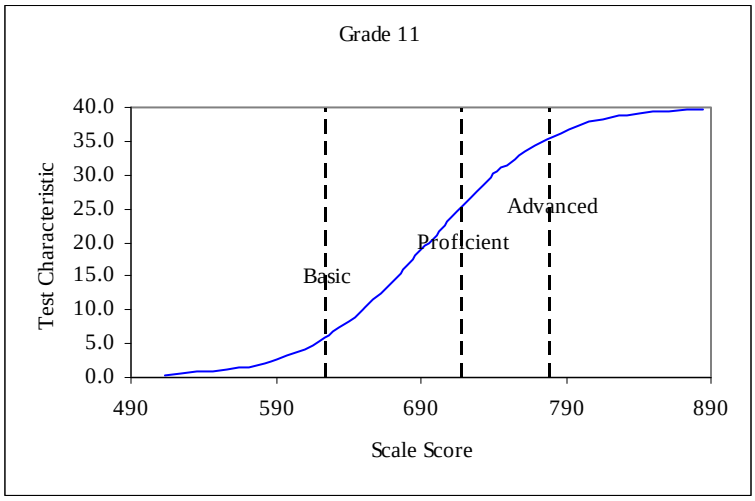

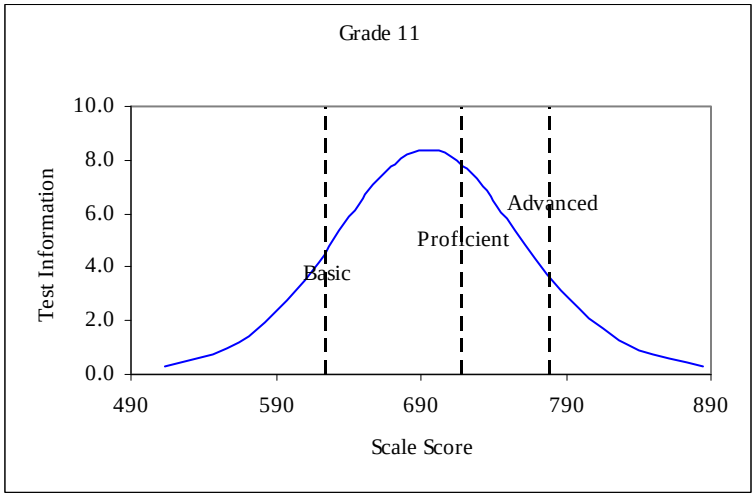

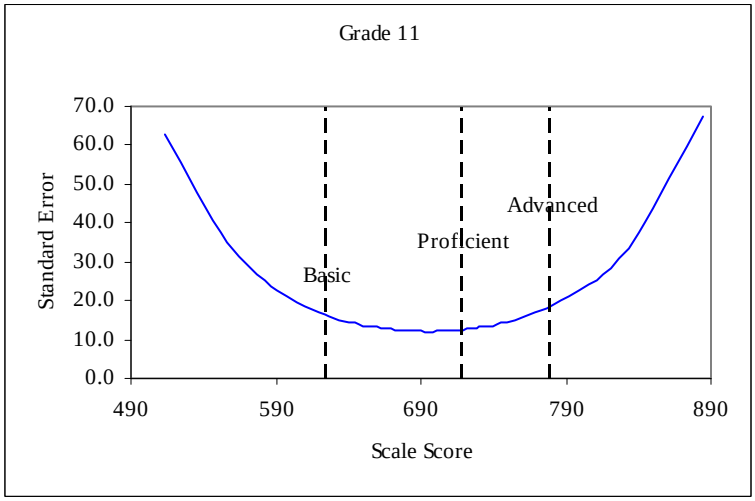

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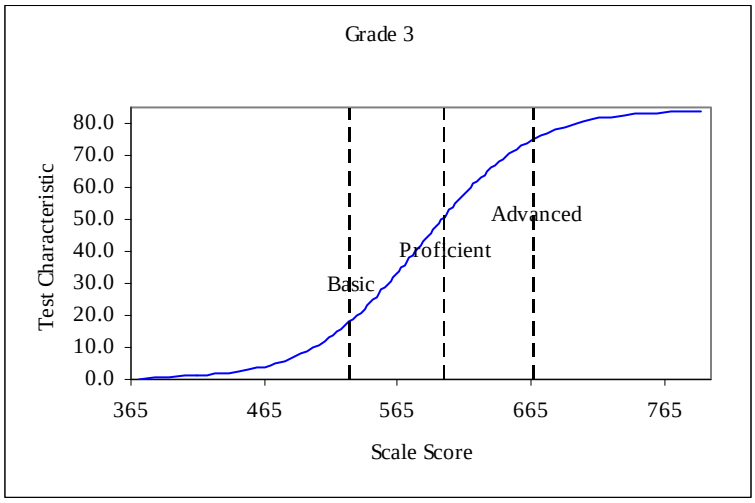

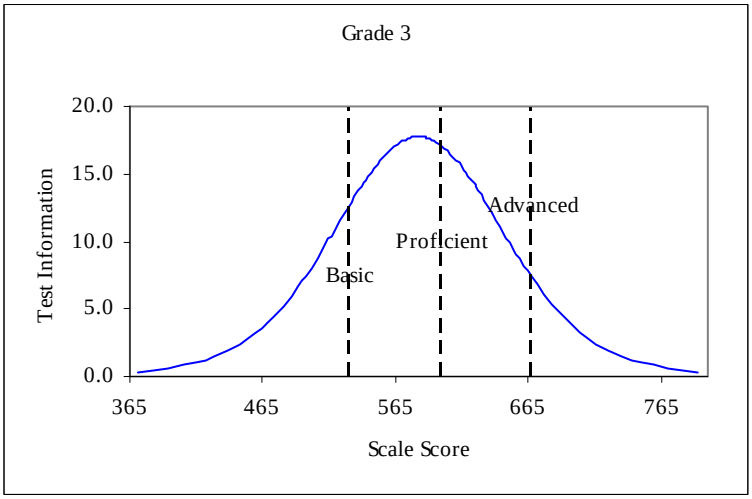

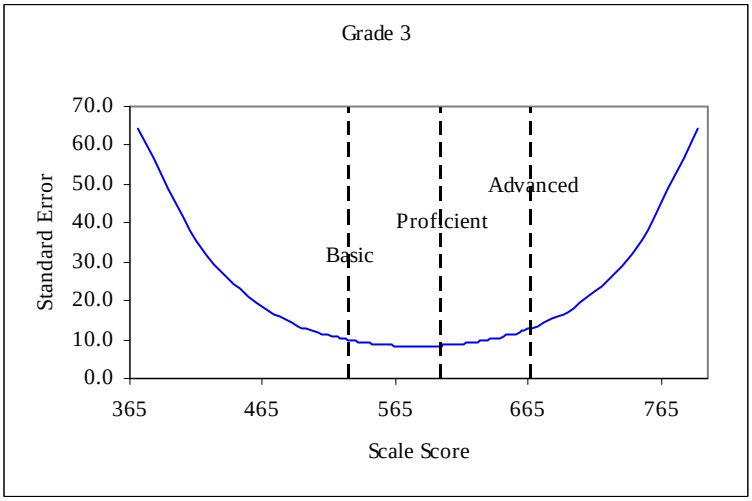

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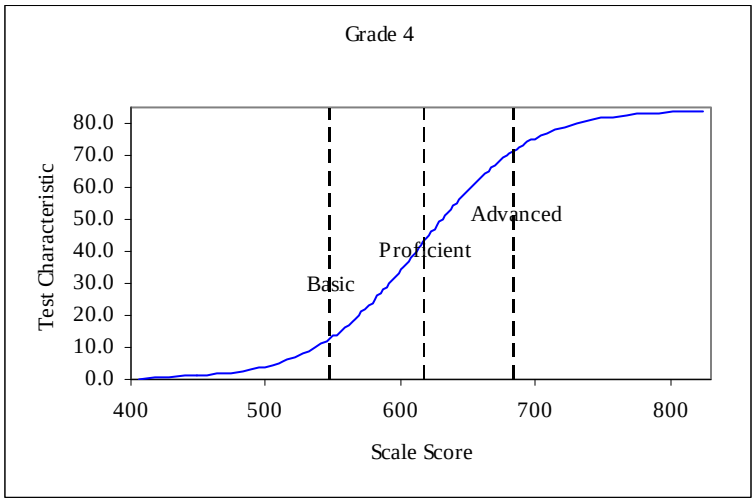

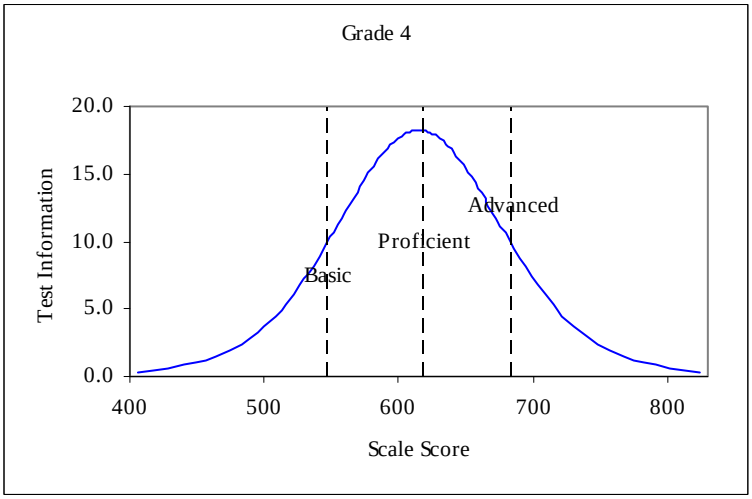

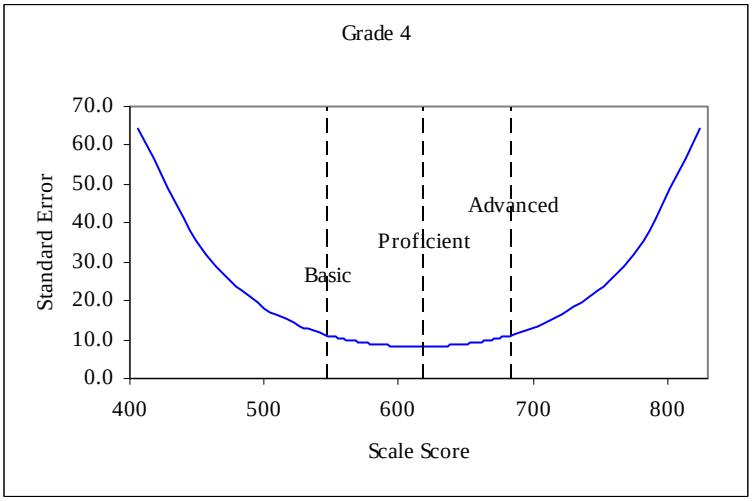

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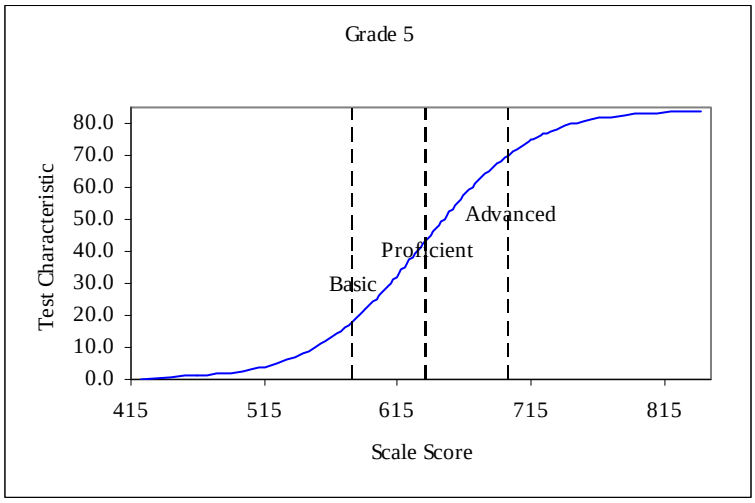

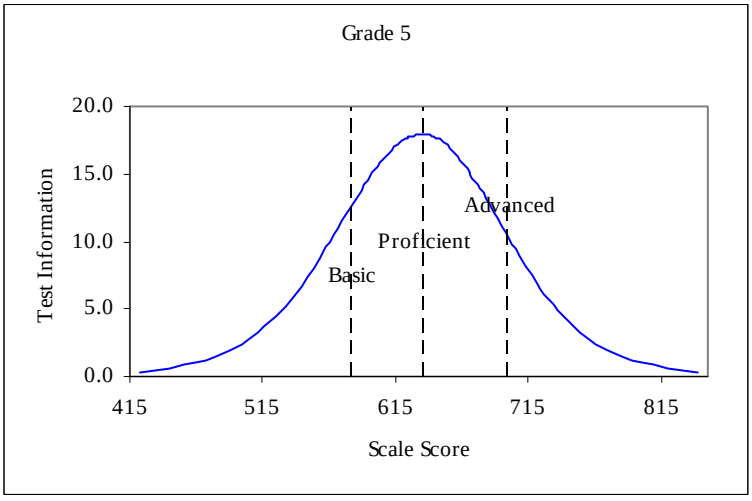

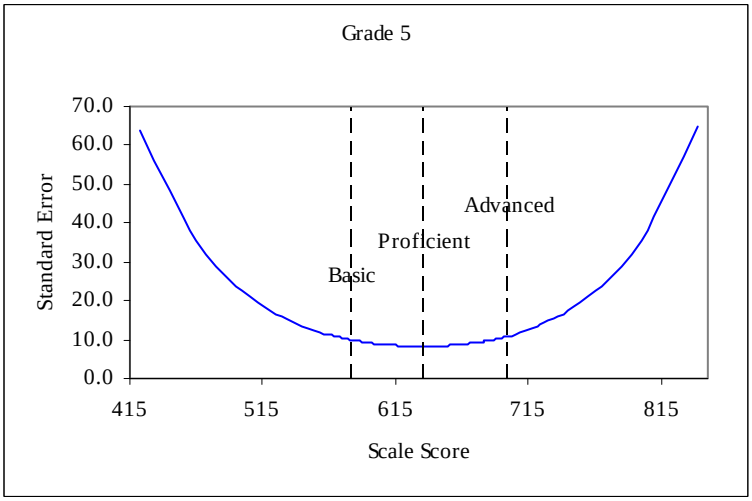

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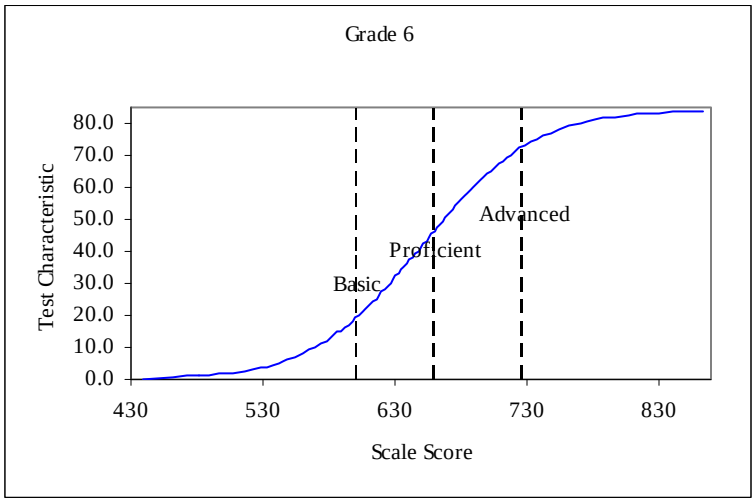

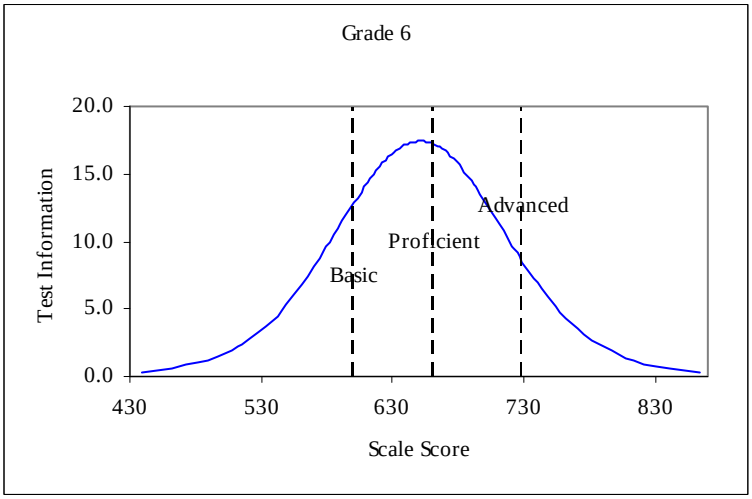

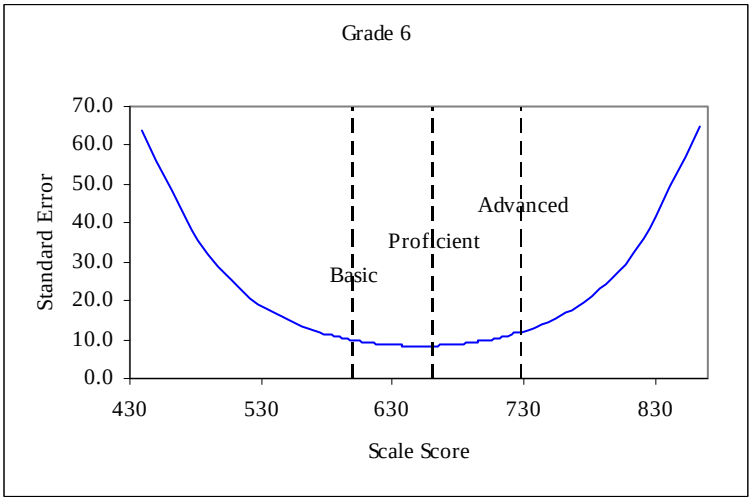

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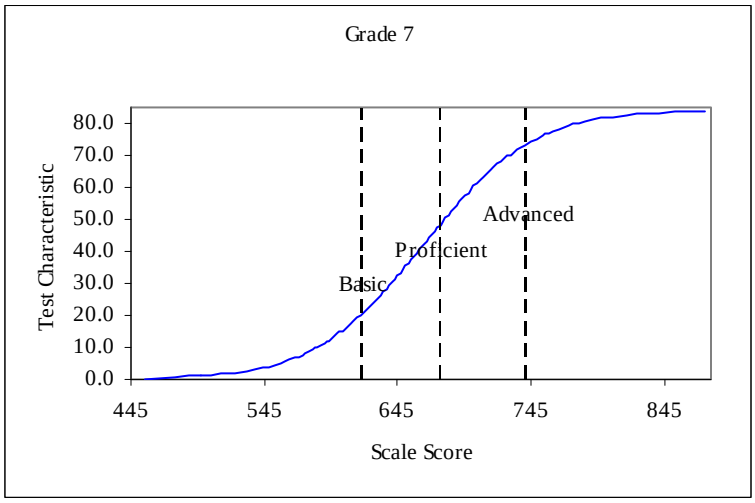

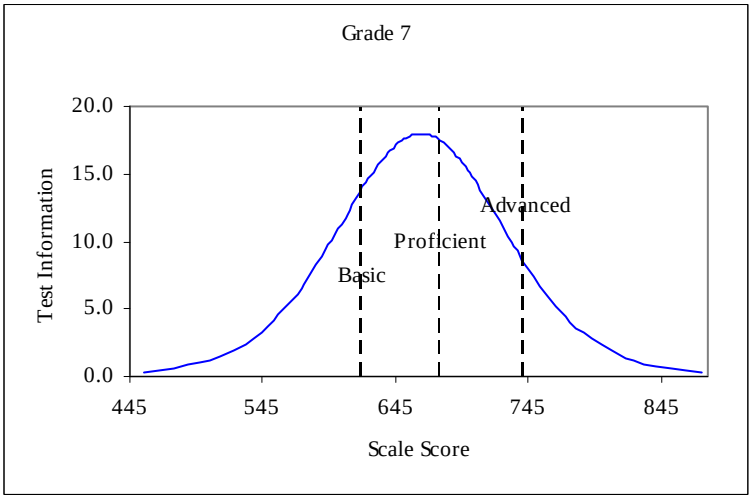

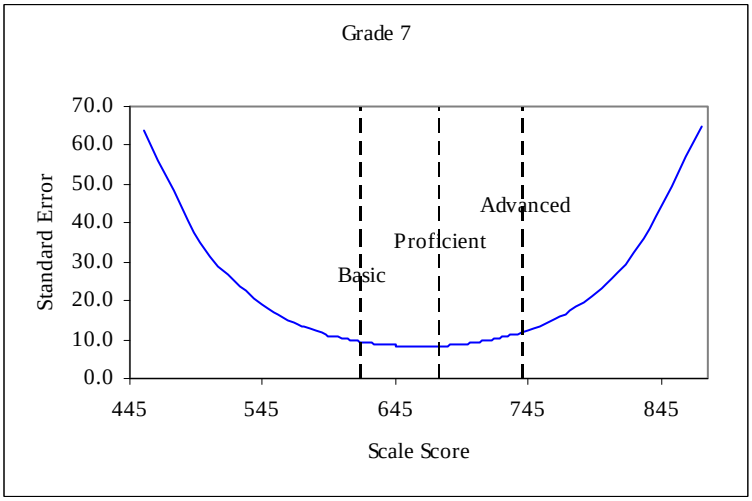

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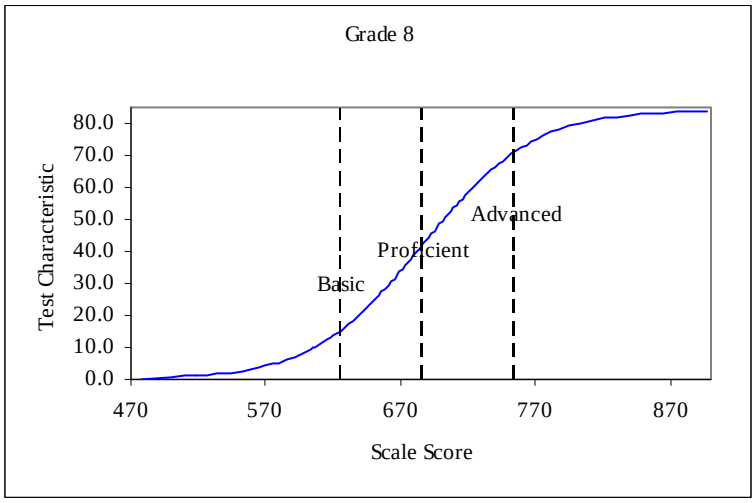

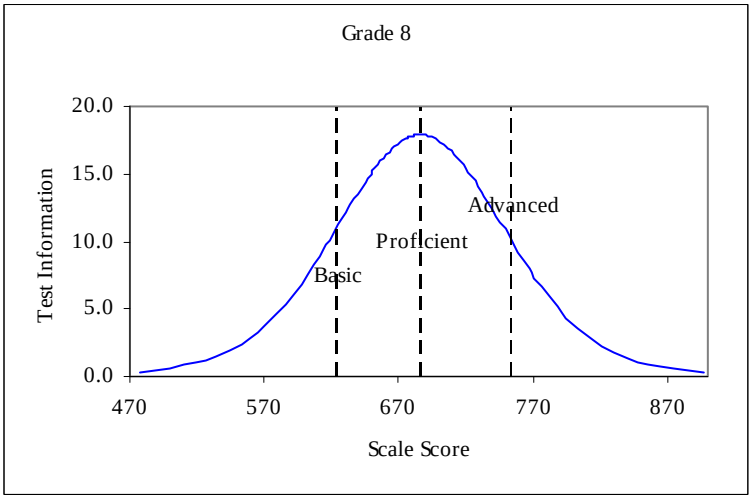

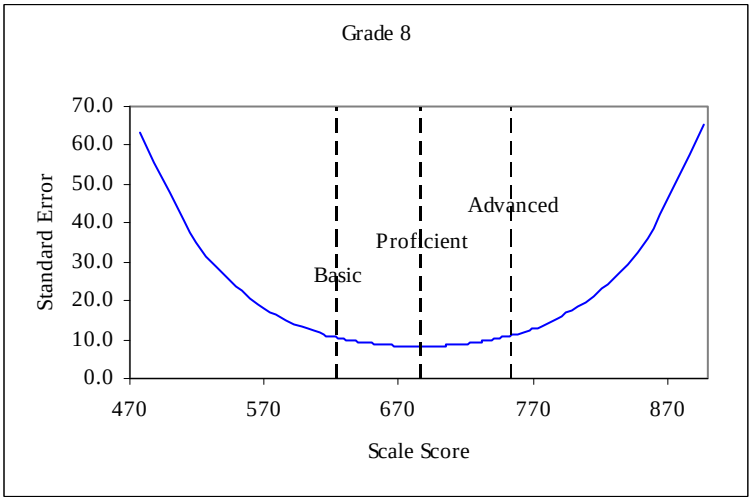

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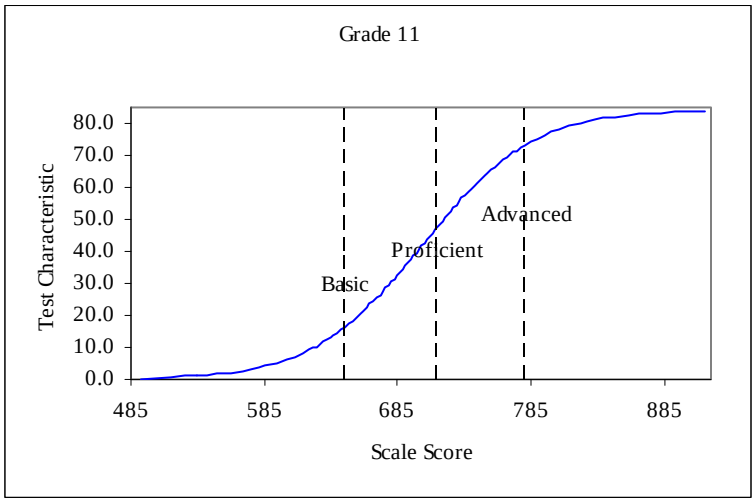

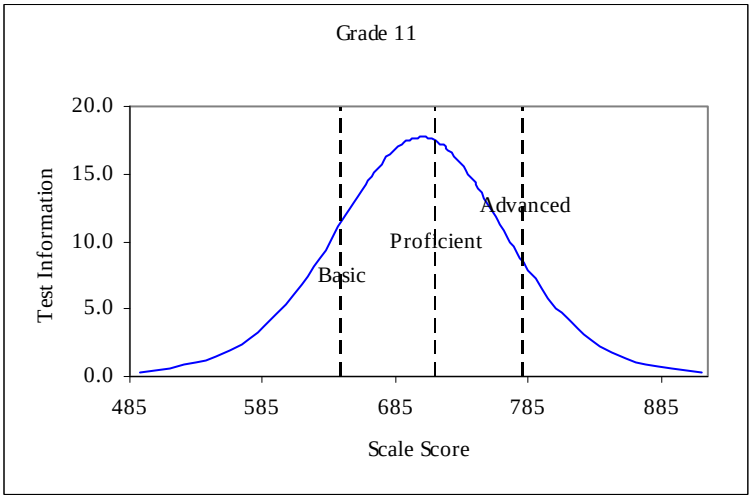

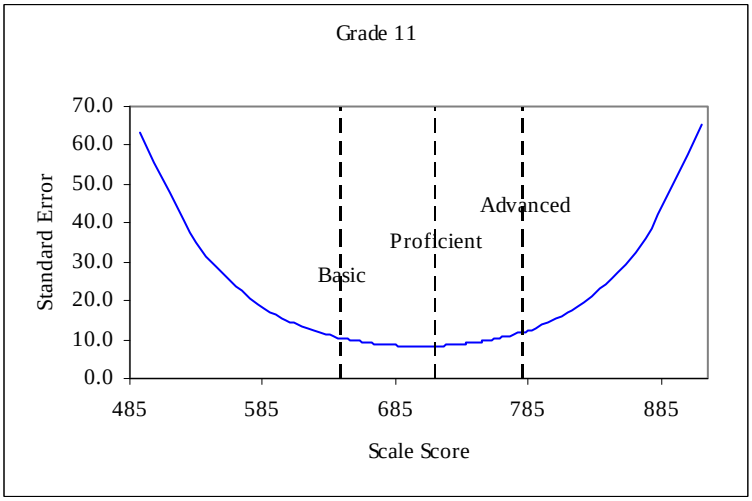

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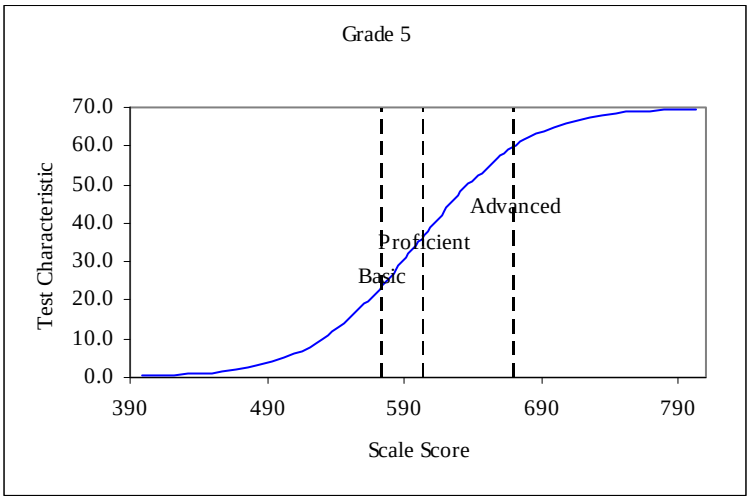

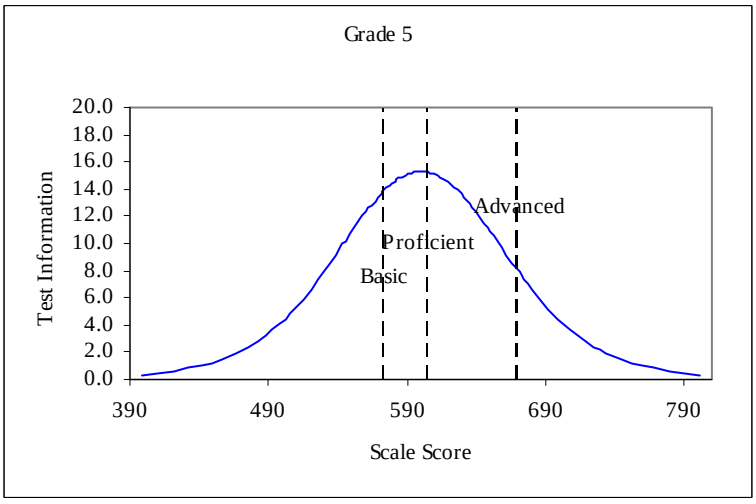

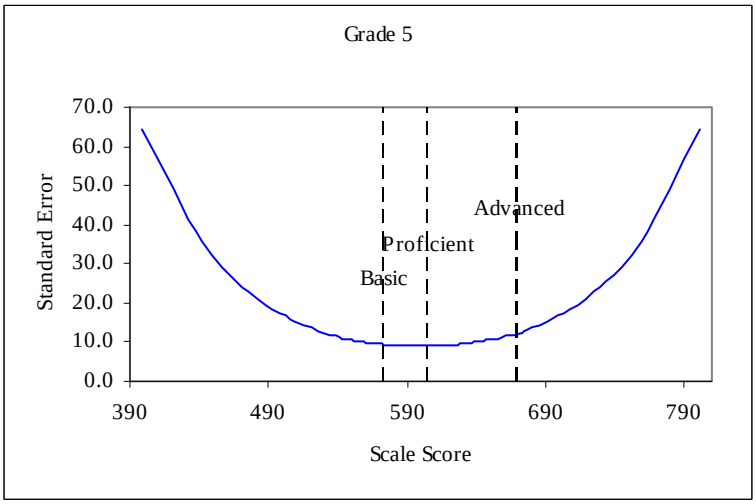

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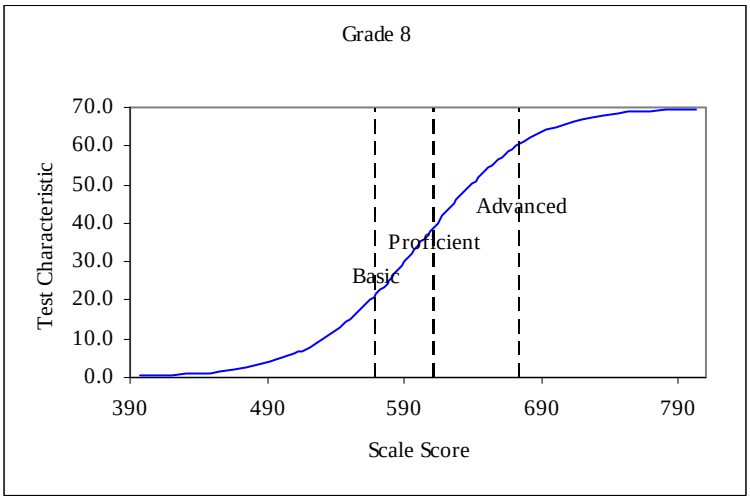

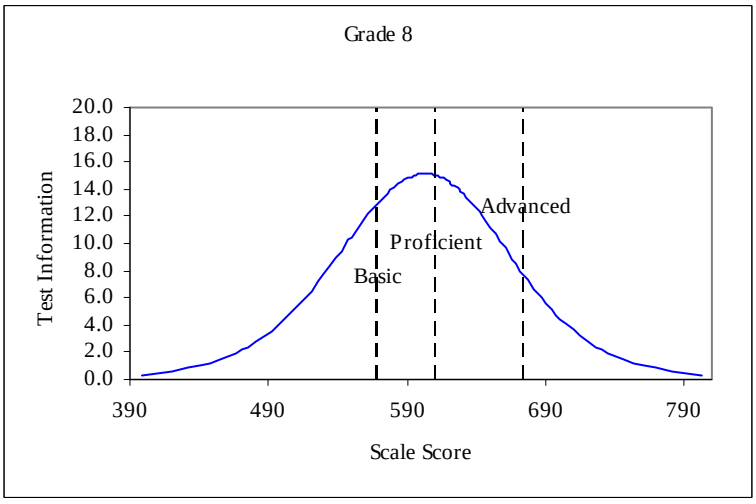

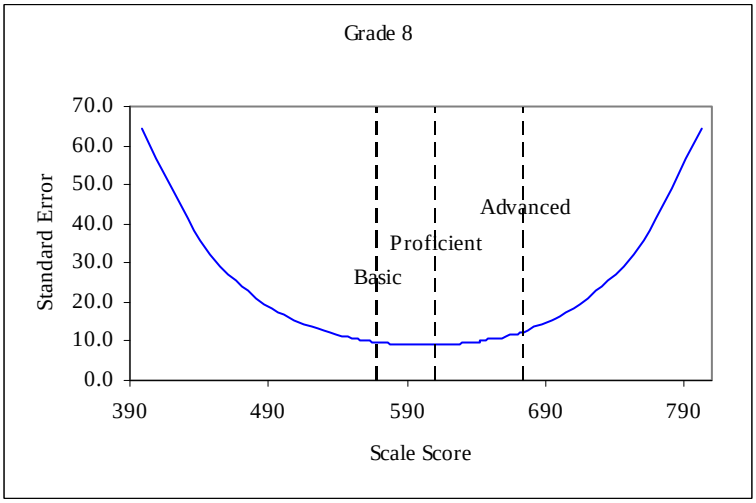

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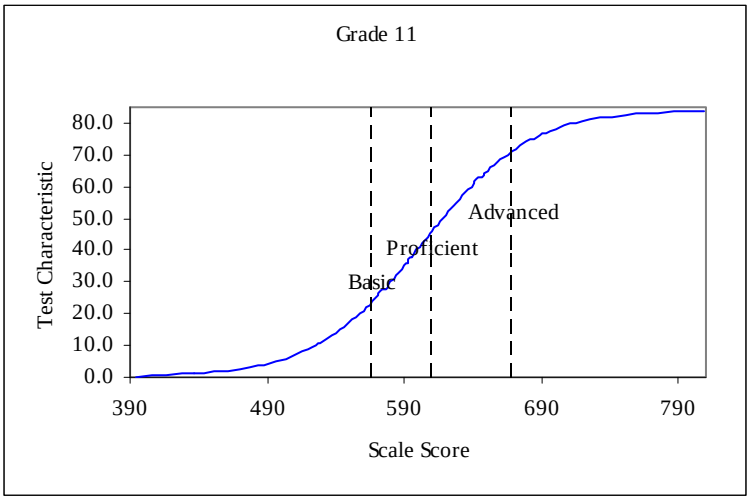

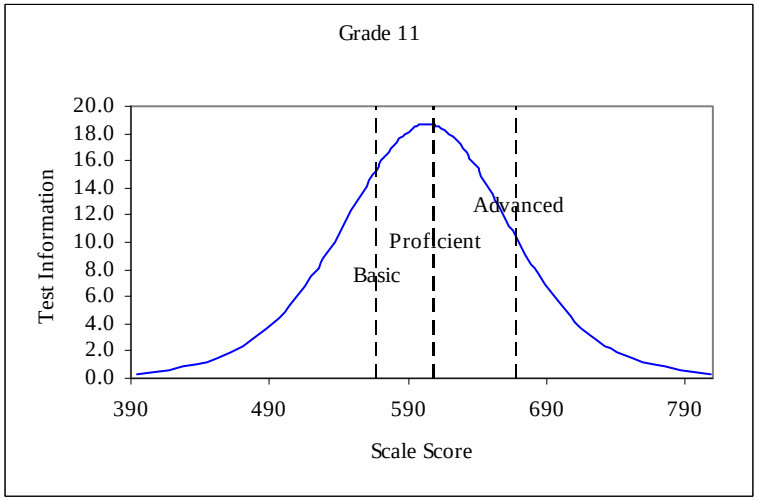

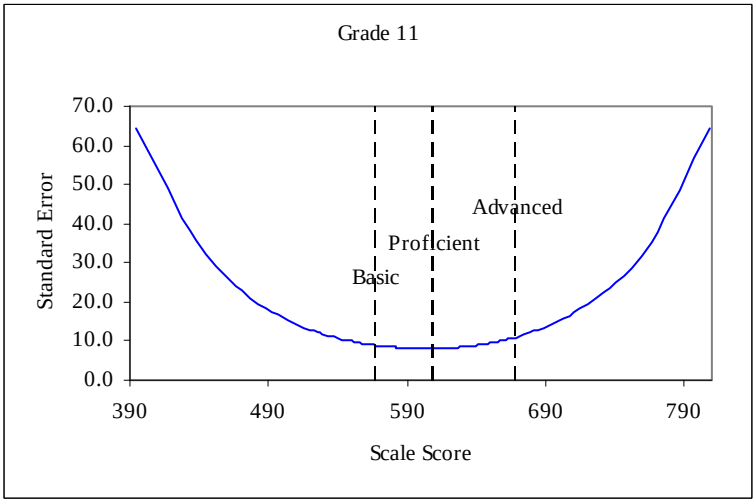

Data file 5/19/08

APPENDIX F: Raw Score to Scale Score Conversion Tables

Reading: Grade 3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	401	64	337	465	1
1	445	36	409	481	1
2	471	26	445	497	1
3	487	22	465	509	1
4	499	19	480	518	2
5	508	18	490	526	2
6	517	16	501	533	2
7	524	15	509	539	2
8	530	15	515	545	2
9	536	14	522	550	2
10	541	13	528	554	2
11	546	13	533	559	2
12	551	13	538	564	2
13	556	12	544	568	2
14	560	12	548	572	2
15	564	12	552	576	2
16	568	12	556	580	2
17	571	11	560	582	2
18	575	11	564	586	2
19	579	11	568	590	2
20	582	11	571	593	2
21	585	11	574	596	2
22	589	11	578	600	2
23	592	11	581	603	2
24	595	11	584	606	3
25	598	10	588	608	3
26	601	10	591	611	3
27	604	10	594	614	3
28	607	10	597	617	3
29	610	10	600	620	3
30	614	10	604	624	3
31	617	10	607	627	3
32	620	10	610	630	3
33	623	10	613	633	3
34	626	10	616	636	3
35	629	11	618	640	3
36	632	11	621	643	3
37	636	11	625	647	3
38	639	11	628	650	3
39	642	11	631	653	3
40	646	11	635	657	3
41	649	11	638	660	3
42	653	12	641	665	3
43	657	12	645	669	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	661	12	649	673	3
45	665	12	653	677	4
46	670	13	657	683	4
47	675	13	662	688	4
48	680	14	666	694	4
49	686	15	671	701	4
50	693	16	677	709	4
51	700	17	683	717	4
52	710	19	691	729	4
53	721	21	700	742	4
54	736	26	710	762	4
55	762	36	726	798	4
56	805	64	741	869	4

Data file 05/29/07

Reading: Grade 4

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	418	64	354	482	1
1	461	36	425	497	1
2	487	26	461	513	1
3	503	22	481	525	1
4	515	19	496	534	1
5	524	17	507	541	1
6	532	16	516	548	2
7	539	15	524	554	2
8	546	14	532	560	2
9	551	14	537	565	2
10	556	13	543	569	2
11	561	13	548	574	2
12	566	12	554	578	2
13	570	12	558	582	2
14	574	12	562	586	2
15	578	11	567	589	2
16	581	11	570	592	2
17	585	11	574	596	2
18	588	11	577	599	2
19	592	11	581	603	2
20	595	11	584	606	2
21	598	10	588	608	2
22	601	10	591	611	2
23	604	10	594	614	2
24	607	10	597	617	3
25	610	10	600	620	3
26	613	10	603	623	3
27	616	10	606	626	3
28	619	10	609	629	3
29	622	10	612	632	3
30	625	10	615	635	3
31	628	10	618	638	3
32	631	10	621	641	3
33	634	10	624	644	3
34	637	10	627	647	3
35	640	10	630	650	3
36	643	10	633	653	3
37	646	11	635	657	3
38	649	11	638	660	3
39	652	11	641	663	3
40	656	11	645	667	3
41	659	11	648	670	3
42	663	11	652	674	3
43	667	12	655	679	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	671	12	659	683	4
45	675	12	663	687	4
46	679	13	666	692	4
47	684	13	671	697	4
48	689	14	675	703	4
49	695	15	680	710	4
50	702	16	686	718	4
51	709	17	692	726	4
52	718	19	699	737	4
53	729	21	708	750	4
54	744	25	719	769	4
55	770	36	734	806	4
56	813	64	749	877	4

Data file 05/19/08

Reading: Grade 5

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	438	64	374	502	1
1	481	36	445	517	1
2	506	25	481	531	1
3	522	21	501	543	1
4	533	18	515	551	1
5	541	17	524	558	1
6	549	16	533	565	2
7	555	15	540	570	2
8	561	14	547	575	2
9	566	13	553	579	2
10	571	13	558	584	2
11	575	12	563	587	2
12	579	12	567	591	2
13	583	12	571	595	2
14	587	11	576	598	2
15	591	11	580	602	2
16	594	11	583	605	2
17	597	11	586	608	2
18	601	10	591	611	2
19	604	10	594	614	2
20	607	10	597	617	2
21	610	10	600	620	2
22	613	10	603	623	2
23	615	10	605	625	2
24	618	10	608	628	2
25	621	10	611	631	3
26	624	10	614	634	3
27	627	10	617	637	3
28	629	10	619	639	3
29	632	10	622	642	3
30	635	10	625	645	3
31	638	10	628	648	3
32	641	10	631	651	3
33	643	10	633	653	3
34	646	10	636	656	3
35	649	10	639	659	3
36	652	10	642	662	3
37	655	10	645	665	3
38	658	11	647	669	3
39	662	11	651	673	3
40	665	11	654	676	3
41	668	11	657	679	3
42	672	11	661	683	3
43	676	12	664	688	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	680	12	668	692	4
45	684	12	672	696	4
46	688	13	675	701	4
47	693	13	680	706	4
48	698	14	684	712	4
49	704	15	689	719	4
50	710	16	694	726	4
51	718	17	701	735	4
52	727	19	708	746	4
53	738	21	717	759	4
54	753	26	727	779	4
55	779	36	743	815	4
56	822	64	758	886	4

Data file 05/19/08

Reading: Grade 6

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	444	64	380	508	1
1	487	36	451	523	1
2	512	26	486	538	1
3	528	21	507	549	1
4	539	19	520	558	1
5	548	17	531	565	1
6	555	16	539	571	1
7	562	15	547	577	2
8	568	14	554	582	2
9	573	13	560	586	2
10	578	13	565	591	2
11	583	12	571	595	2
12	587	12	575	599	2
13	591	12	579	603	2
14	595	12	583	607	2
15	599	11	588	610	2
16	602	11	591	613	2
17	606	11	595	617	2
18	609	11	598	620	2
19	612	11	601	623	2
20	616	11	605	627	2
21	619	11	608	630	2
22	622	10	612	632	2
23	625	10	615	635	2
24	628	10	618	638	2
25	631	10	621	641	2
26	634	10	624	644	2
27	637	10	627	647	3
28	640	10	630	650	3
29	643	10	633	653	3
30	646	10	636	656	3
31	649	10	639	659	3
32	652	10	642	662	3
33	656	11	645	667	3
34	659	11	648	670	3
35	662	11	651	673	3
36	665	11	654	676	3
37	669	11	658	680	3
38	672	11	661	683	3
39	676	11	665	687	3
40	679	11	668	690	3
41	683	12	671	695	3
42	687	12	675	699	3
43	691	12	679	703	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	695	12	683	707	4
45	700	13	687	713	4
46	705	13	692	718	4
47	710	14	696	724	4
48	715	14	701	729	4
49	722	15	707	737	4
50	728	16	712	744	4
51	736	17	719	753	4
52	745	19	726	764	4
53	757	21	736	778	4
54	773	26	747	799	4
55	798	36	762	834	4
56	842	64	778	906	4

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Reading: Grade 7

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	463	64	399	527	1
1	506	36	470	542	1
2	531	26	505	557	1
3	547	21	526	568	1
4	558	19	539	577	1
5	567	17	550	584	2
6	574	16	558	590	2
7	581	15	566	596	2
8	587	14	573	601	2
9	592	13	579	605	2
10	597	13	584	610	2
11	602	12	590	614	2
12	606	12	594	618	2
13	610	12	598	622	2
14	614	11	603	625	2
15	618	11	607	629	2
16	621	11	610	632	2
17	624	11	613	635	2
18	628	11	617	639	2
19	631	11	620	642	2
20	634	10	624	644	2
21	637	10	627	647	2
22	640	10	630	650	2
23	643	10	633	653	2
24	646	10	636	656	2
25	649	10	639	659	2
26	652	10	642	662	3
27	655	10	645	665	3
28	658	10	648	668	3
29	661	10	651	671	3
30	663	10	653	673	3
31	666	10	656	676	3
32	669	10	659	679	3
33	672	10	662	682	3
34	675	10	665	685	3
35	678	10	668	688	3
36	681	10	671	691	3
37	684	10	674	694	3
38	687	11	676	698	3
39	690	11	679	701	3
40	694	11	683	705	3
41	697	11	686	708	3
42	701	11	690	712	3
43	705	12	693	717	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	708	12	696	720	3
45	713	12	701	725	4
46	717	13	704	730	4
47	722	13	709	735	4
48	727	14	713	741	4
49	732	14	718	746	4
50	739	15	724	754	4
51	746	17	729	763	4
52	755	18	737	773	4
53	766	21	745	787	4
54	781	25	756	806	4
55	806	35	771	841	4
56	849	64	785	913	4

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Reading: Grade 8

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	475	65	410	540	1
1	519	36	483	555	1
2	545	26	519	571	1
3	561	22	539	583	1
4	573	19	554	592	1
5	582	17	565	599	2
6	590	16	574	606	2
7	596	15	581	611	2
8	602	14	588	616	2
9	608	13	595	621	2
10	612	13	599	625	2
11	617	12	605	629	2
12	621	12	609	633	2
13	625	12	613	637	2
14	629	11	618	640	2
15	633	11	622	644	2
16	636	11	625	647	2
17	639	11	628	650	2
18	643	11	632	654	2
19	646	10	636	656	2
20	649	10	639	659	2
21	652	10	642	662	2
22	655	10	645	665	2
23	658	10	648	668	2
24	660	10	650	670	2
25	663	10	653	673	2
26	666	10	656	676	2
27	669	10	659	679	3
28	672	10	662	682	3
29	674	10	664	684	3
30	677	10	667	687	3
31	680	10	670	690	3
32	683	10	673	693	3
33	686	10	676	696	3
34	689	10	679	699	3
35	692	10	682	702	3
36	695	10	685	705	3
37	698	10	688	708	3
38	701	11	690	712	3
39	704	11	693	715	3
40	707	11	696	718	3
41	711	11	700	722	3
42	714	11	703	725	3
43	718	12	706	730	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	722	12	710	734	3
45	726	12	714	738	3
46	731	13	718	744	4
47	735	13	722	748	4
48	741	14	727	755	4
49	746	15	731	761	4
50	753	16	737	769	4
51	760	17	743	777	4
52	769	19	750	788	4
53	780	21	759	801	4
54	795	25	770	820	4
55	821	36	785	857	4
56	864	64	800	928	4

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Reading: Grade 11

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	513	64	449	577	1
1	556	36	520	592	1
2	582	26	556	608	1
3	598	22	576	620	1
4	610	19	591	629	1
5	619	17	602	636	1
6	627	16	611	643	2
7	634	15	619	649	2
8	641	15	626	656	2
9	647	14	633	661	2
10	652	14	638	666	2
11	657	13	644	670	2
12	662	13	649	675	2
13	667	13	654	680	2
14	672	13	659	685	2
15	676	12	664	688	2
16	681	12	669	693	2
17	685	12	673	697	2
18	689	12	677	701	2
19	693	12	681	705	2
20	698	12	686	710	2
21	702	12	690	714	2
22	706	12	694	718	2
23	710	12	698	722	2
24	715	12	703	727	2
25	719	12	707	731	3
26	724	13	711	737	3
27	728	13	715	741	3
28	733	13	720	746	3
29	738	13	725	751	3
30	743	14	729	757	3
31	749	14	735	763	3
32	755	15	740	770	3
33	762	16	746	778	3
34	769	16	753	785	3
35	777	18	759	795	3
36	787	19	768	806	4
37	799	22	777	821	4
38	815	26	789	841	4
39	841	36	805	877	4
40	885	64	821	949	4

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Mathematics: Grade 3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	371	64	307	435	1
1	414	35	379	449	1
2	439	25	414	464	1
3	454	21	433	475	1
4	465	18	447	483	1
5	473	17	456	490	1
6	481	15	466	496	1
7	487	14	473	501	1
8	492	13	479	505	1
9	497	13	484	510	1
10	502	12	490	514	1
11	506	12	494	518	1
12	510	11	499	521	1
13	513	11	502	524	1
14	517	11	506	528	1
15	520	11	509	531	1
16	523	10	513	533	1
17	526	10	516	536	1
18	529	10	519	539	1
19	532	10	522	542	2
20	534	10	524	544	2
21	537	9	528	546	2
22	540	9	531	549	2
23	542	9	533	551	2
24	544	9	535	553	2
25	547	9	538	556	2
26	549	9	540	558	2
27	551	9	542	560	2
28	553	9	544	562	2
29	556	9	547	565	2
30	558	9	549	567	2
31	560	9	551	569	2
32	562	9	553	571	2
33	564	8	556	572	2
34	566	8	558	574	2
35	568	8	560	576	2
36	570	8	562	578	2
37	572	8	564	580	2
38	574	8	566	582	2
39	576	8	568	584	2
40	578	8	570	586	2
41	580	8	572	588	2
42	582	8	574	590	2
43	584	8	576	592	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	586	8	578	594	2
45	588	8	580	596	2
46	590	8	582	598	2
47	592	8	584	600	2
48	594	8	586	602	2
49	596	8	588	604	2
50	598	8	590	606	2
51	600	8	592	608	3
52	602	9	593	611	3
53	604	9	595	613	3
54	606	9	597	615	3
55	608	9	599	617	3
56	611	9	602	620	3
57	613	9	604	622	3
58	615	9	606	624	3
59	617	9	608	626	3
60	620	9	611	629	3
61	622	9	613	631	3
62	625	9	616	634	3
63	627	9	618	636	3
64	630	10	620	640	3
65	632	10	622	642	3
66	635	10	625	645	3
67	638	10	628	648	3
68	641	10	631	651	3
69	644	11	633	655	3
70	647	11	636	658	3
71	651	11	640	662	3
72	654	11	643	665	3
73	658	12	646	670	3
74	662	12	650	674	3
75	667	13	654	680	3
76	672	13	659	685	4
77	677	14	663	691	4
78	683	15	668	698	4
79	691	17	674	708	4
80	699	18	681	717	4
81	710	21	689	731	4
82	725	25	700	750	4
83	750	35	715	785	4
84	793	64	729	857	4

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Mathematics: Grade 4

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	406	64	342	470	1
1	449	35	414	484	1
2	474	25	449	499	1
3	489	21	468	510	1
4	500	18	482	518	1
5	509	16	493	525	1
6	516	15	501	531	1
7	522	14	508	536	1
8	527	13	514	540	1
9	532	13	519	545	1
10	537	12	525	549	1
11	541	12	529	553	1
12	545	11	534	556	1
13	548	11	537	559	2
14	552	11	541	563	2
15	555	10	545	565	2
16	558	10	548	568	2
17	561	10	551	571	2
18	564	10	554	574	2
19	566	10	556	576	2
20	569	9	560	578	2
21	571	9	562	580	2
22	574	9	565	583	2
23	576	9	567	585	2
24	579	9	570	588	2
25	581	9	572	590	2
26	583	9	574	592	2
27	585	9	576	594	2
28	587	9	578	596	2
29	590	9	581	599	2
30	592	9	583	601	2
31	594	8	586	602	2
32	596	8	588	604	2
33	598	8	590	606	2
34	600	8	592	608	2
35	602	8	594	610	2
36	604	8	596	612	2
37	606	8	598	614	2
38	608	8	600	616	2
39	610	8	602	618	2
40	612	8	604	620	2
41	613	8	605	621	2
42	615	8	607	623	2
43	617	8	609	625	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	619	8	611	627	3
45	621	8	613	629	3
46	623	8	615	631	3
47	625	8	617	633	3
48	627	8	619	635	3
49	629	8	621	637	3
50	631	8	623	639	3
51	633	8	625	641	3
52	635	8	627	643	3
53	637	8	629	645	3
54	639	9	630	648	3
55	641	9	632	650	3
56	643	9	634	652	3
57	645	9	636	654	3
58	648	9	639	657	3
59	650	9	641	659	3
60	652	9	643	661	3
61	655	9	646	664	3
62	657	9	648	666	3
63	659	9	650	668	3
64	662	9	653	671	3
65	665	10	655	675	3
66	667	10	657	677	3
67	670	10	660	680	3
68	673	10	663	683	3
69	676	10	666	686	3
70	679	11	668	690	3
71	683	11	672	694	3
72	686	11	675	697	4
73	690	12	678	702	4
74	694	12	682	706	4
75	699	13	686	712	4
76	704	13	691	717	4
77	709	14	695	723	4
78	715	15	700	730	4
79	722	16	706	738	4
80	731	18	713	749	4
81	742	21	721	763	4
82	757	25	732	782	4
83	782	35	747	817	4
84	824	64	760	888	4

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Mathematics: Grade 5

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	422	64	358	486	1
1	465	35	430	500	1
2	490	25	465	515	1
3	505	21	484	526	1
4	516	18	498	534	1
5	525	17	508	542	1
6	532	15	517	547	1
7	538	14	524	552	1
8	544	14	530	558	1
9	549	13	536	562	1
10	553	12	541	565	1
11	558	12	546	570	1
12	561	11	550	572	1
13	565	11	554	576	1
14	569	11	558	580	1
15	572	11	561	583	1
16	575	10	565	585	1
17	578	10	568	588	1
18	581	10	571	591	1
19	584	10	574	594	2
20	586	10	576	596	2
21	589	9	580	598	2
22	591	9	582	600	2
23	594	9	585	603	2
24	596	9	587	605	2
25	599	9	590	608	2
26	601	9	592	610	2
27	603	9	594	612	2
28	605	9	596	614	2
29	608	9	599	617	2
30	610	9	601	619	2
31	612	9	603	621	2
32	614	9	605	623	2
33	616	8	608	624	2
34	618	8	610	626	2
35	620	8	612	628	2
36	622	8	614	630	2
37	624	8	616	632	2
38	626	8	618	634	2
39	628	8	620	636	2
40	630	8	622	638	2
41	632	8	624	640	2
42	634	8	626	642	2
43	636	8	628	644	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	638	8	630	646	3
45	640	8	632	648	3
46	642	8	634	650	3
47	644	8	636	652	3
48	646	8	638	654	3
49	648	8	640	656	3
50	650	8	642	658	3
51	652	8	644	660	3
52	654	8	646	662	3
53	656	9	647	665	3
54	658	9	649	667	3
55	660	9	651	669	3
56	662	9	653	671	3
57	664	9	655	673	3
58	666	9	657	675	3
59	669	9	660	678	3
60	671	9	662	680	3
61	673	9	664	682	3
62	676	9	667	685	3
63	678	9	669	687	3
64	681	9	672	690	3
65	683	10	673	693	3
66	686	10	676	696	3
67	689	10	679	699	3
68	692	10	682	702	3
69	695	10	685	705	3
70	698	11	687	709	3
71	701	11	690	712	4
72	705	11	694	716	4
73	709	12	697	721	4
74	713	12	701	725	4
75	717	13	704	730	4
76	722	13	709	735	4
77	727	14	713	741	4
78	734	15	719	749	4
79	741	16	725	757	4
80	749	18	731	767	4
81	760	21	739	781	4
82	775	25	750	800	4
83	800	35	765	835	4
84	842	64	778	906	4

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Mathematics: Grade 6

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	439	64	375	503	1
1	482	35	447	517	1
2	507	25	482	532	1
3	522	21	501	543	1
4	533	18	515	551	1
5	542	17	525	559	1
6	549	15	534	564	1
7	555	14	541	569	1
8	561	14	547	575	1
9	565	13	552	578	1
10	570	12	558	582	1
11	574	12	562	586	1
12	578	12	566	590	1
13	582	11	571	593	1
14	585	11	574	596	1
15	589	11	578	600	1
16	592	10	582	602	1
17	595	10	585	605	1
18	598	10	588	608	1
19	600	10	590	610	1
20	603	10	593	613	2
21	606	10	596	616	2
22	608	9	599	617	2
23	611	9	602	620	2
24	613	9	604	622	2
25	616	9	607	625	2
26	618	9	609	627	2
27	620	9	611	629	2
28	622	9	613	631	2
29	625	9	616	634	2
30	627	9	618	636	2
31	629	9	620	638	2
32	631	9	622	640	2
33	633	9	624	642	2
34	635	9	626	644	2
35	637	9	628	646	2
36	639	8	631	647	2
37	641	8	633	649	2
38	644	8	636	652	2
39	646	8	638	654	2
40	648	8	640	656	2
41	650	8	642	658	2
42	652	8	644	660	2
43	654	8	646	662	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	656	8	648	664	2
45	658	8	650	666	2
46	660	8	652	668	2
47	662	8	654	670	3
48	664	8	656	672	3
49	666	8	658	674	3
50	668	9	659	677	3
51	670	9	661	679	3
52	672	9	663	681	3
53	674	9	665	683	3
54	676	9	667	685	3
55	679	9	670	688	3
56	681	9	672	690	3
57	683	9	674	692	3
58	685	9	676	694	3
59	688	9	679	697	3
60	690	9	681	699	3
61	692	9	683	701	3
62	695	9	686	704	3
63	697	10	687	707	3
64	700	10	690	710	3
65	703	10	693	713	3
66	706	10	696	716	3
67	709	10	699	719	3
68	712	10	702	722	3
69	715	11	704	726	3
70	718	11	707	729	3
71	721	11	710	732	3
72	725	12	713	737	3
73	729	12	717	741	4
74	733	12	721	745	4
75	738	13	725	751	4
76	743	14	729	757	4
77	748	14	734	762	4
78	755	15	740	770	4
79	762	17	745	779	4
80	771	18	753	789	4
81	782	21	761	803	4
82	797	25	772	822	4
83	822	35	787	857	4
84	864	64	800	928	4

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Mathematics: Grade 7

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	455	64	391	519	1
1	498	35	463	533	1
2	523	25	498	548	1
3	538	21	517	559	1
4	549	18	531	567	1
5	557	16	541	573	1
6	564	15	549	579	1
7	571	14	557	585	1
8	576	13	563	589	1
9	581	13	568	594	1
10	585	12	573	597	1
11	590	12	578	602	1
12	593	11	582	604	1
13	597	11	586	608	1
14	600	11	589	611	1
15	604	10	594	614	1
16	607	10	597	617	1
17	610	10	600	620	1
18	612	10	602	622	1
19	615	10	605	625	1
20	618	10	608	628	1
21	620	9	611	629	2
22	623	9	614	632	2
23	625	9	616	634	2
24	628	9	619	637	2
25	630	9	621	639	2
26	632	9	623	641	2
27	634	9	625	643	2
28	637	9	628	646	2
29	639	9	630	648	2
30	641	9	632	650	2
31	643	9	634	652	2
32	645	8	637	653	2
33	647	8	639	655	2
34	649	8	641	657	2
35	651	8	643	659	2
36	653	8	645	661	2
37	655	8	647	663	2
38	657	8	649	665	2
39	659	8	651	667	2
40	661	8	653	669	2
41	663	8	655	671	2
42	665	8	657	673	2
43	667	8	659	675	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	669	8	661	677	2
45	671	8	663	679	2
46	673	8	665	681	2
47	675	8	667	683	2
48	677	8	669	685	2
49	679	8	671	687	3
50	681	8	673	689	3
51	683	8	675	691	3
52	685	8	677	693	3
53	687	9	678	696	3
54	689	9	680	698	3
55	691	9	682	700	3
56	693	9	684	702	3
57	695	9	686	704	3
58	698	9	689	707	3
59	700	9	691	709	3
60	702	9	693	711	3
61	705	9	696	714	3
62	707	9	698	716	3
63	709	9	700	718	3
64	712	10	702	722	3
65	715	10	705	725	3
66	717	10	707	727	3
67	720	10	710	730	3
68	723	10	713	733	3
69	726	11	715	737	3
70	730	11	719	741	3
71	733	11	722	744	3
72	737	11	726	748	3
73	740	12	728	752	3
74	745	12	733	757	4
75	749	13	736	762	4
76	754	13	741	767	4
77	759	14	745	773	4
78	766	15	751	781	4
79	773	17	756	790	4
80	781	18	763	799	4
81	792	21	771	813	4
82	807	25	782	832	4
83	832	35	797	867	4
84	875	64	811	939	4

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Mathematics: Grade 8

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	477	64	413	541	1
1	519	35	484	554	1
2	544	25	519	569	1
3	559	21	538	580	1
4	570	18	552	588	1
5	579	17	562	596	1
6	586	15	571	601	1
7	592	14	578	606	1
8	598	13	585	611	1
9	603	13	590	616	1
10	607	12	595	619	1
11	611	12	599	623	1
12	615	11	604	626	1
13	619	11	608	630	1
14	622	11	611	633	1
15	625	11	614	636	2
16	628	10	618	638	2
17	631	10	621	641	2
18	634	10	624	644	2
19	637	10	627	647	2
20	640	10	630	650	2
21	642	9	633	651	2
22	645	9	636	654	2
23	647	9	638	656	2
24	650	9	641	659	2
25	652	9	643	661	2
26	654	9	645	663	2
27	656	9	647	665	2
28	659	9	650	668	2
29	661	9	652	670	2
30	663	9	654	672	2
31	665	9	656	674	2
32	667	9	658	676	2
33	669	8	661	677	2
34	671	8	663	679	2
35	673	8	665	681	2
36	675	8	667	683	2
37	677	8	669	685	2
38	679	8	671	687	2
39	681	8	673	689	2
40	683	8	675	691	2
41	685	8	677	693	2
42	687	8	679	695	3
43	689	8	681	697	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	691	8	683	699	3
45	693	8	685	701	3
46	695	8	687	703	3
47	697	8	689	705	3
48	699	8	691	707	3
49	701	8	693	709	3
50	703	8	695	711	3
51	705	8	697	713	3
52	707	8	699	715	3
53	709	9	700	718	3
54	711	9	702	720	3
55	713	9	704	722	3
56	716	9	707	725	3
57	718	9	709	727	3
58	720	9	711	729	3
59	722	9	713	731	3
60	725	9	716	734	3
61	727	9	718	736	3
62	729	9	720	738	3
63	732	9	723	741	3
64	734	10	724	744	3
65	737	10	727	747	3
66	740	10	730	750	3
67	743	10	733	753	3
68	746	10	736	756	3
69	749	11	738	760	3
70	752	11	741	763	3
71	755	11	744	766	4
72	759	11	748	770	4
73	763	12	751	775	4
74	767	12	755	779	4
75	771	13	758	784	4
76	776	13	763	789	4
77	782	14	768	796	4
78	788	15	773	803	4
79	795	17	778	812	4
80	804	18	786	822	4
81	815	21	794	836	4
82	830	25	805	855	4
83	855	35	820	890	4
84	897	64	833	961	4

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Mathematics: Grade 11

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	492	64	428	556	1
1	535	35	500	570	1
2	560	25	535	585	1
3	575	21	554	596	1
4	586	18	568	604	1
5	595	17	578	612	1
6	602	15	587	617	1
7	608	14	594	622	1
8	614	14	600	628	1
9	619	13	606	632	1
10	624	12	612	636	1
11	628	12	616	640	1
12	632	12	620	644	1
13	635	11	624	646	1
14	639	11	628	650	1
15	642	11	631	653	1
16	645	10	635	655	2
17	648	10	638	658	2
18	651	10	641	661	2
19	654	10	644	664	2
20	657	10	647	667	2
21	659	10	649	669	2
22	662	9	653	671	2
23	664	9	655	673	2
24	667	9	658	676	2
25	669	9	660	678	2
26	672	9	663	681	2
27	674	9	665	683	2
28	676	9	667	685	2
29	678	9	669	687	2
30	680	9	671	689	2
31	683	9	674	692	2
32	685	9	676	694	2
33	687	9	678	696	2
34	689	8	681	697	2
35	691	8	683	699	2
36	693	8	685	701	2
37	695	8	687	703	2
38	697	8	689	705	2
39	699	8	691	707	2
40	701	8	693	709	2
41	703	8	695	711	2
42	705	8	697	713	2
43	707	8	699	715	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	709	8	701	717	2
45	711	8	703	719	2
46	713	8	705	721	2
47	715	8	707	723	3
48	717	8	709	725	3
49	719	8	711	727	3
50	721	8	713	729	3
51	723	8	715	731	3
52	725	9	716	734	3
53	727	9	718	736	3
54	729	9	720	738	3
55	731	9	722	740	3
56	733	9	724	742	3
57	736	9	727	745	3
58	738	9	729	747	3
59	740	9	731	749	3
60	743	9	734	752	3
61	745	9	736	754	3
62	747	9	738	756	3
63	750	9	741	759	3
64	752	10	742	762	3
65	755	10	745	765	3
66	758	10	748	768	3
67	761	10	751	771	3
68	764	10	754	774	3
69	767	11	756	778	3
70	770	11	759	781	3
71	774	11	763	785	3
72	777	11	766	788	3
73	781	12	769	793	4
74	785	12	773	797	4
75	790	13	777	803	4
76	795	14	781	809	4
77	800	14	786	814	4
78	806	15	791	821	4
79	814	17	797	831	4
80	822	18	804	840	4
81	833	21	812	854	4
82	848	25	823	873	4
83	873	35	838	908	4
84	916	64	852	980	4

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Science: Grade 5

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	399	64	335	463	1
1	442	35	407	477	1
2	467	25	442	492	1
3	482	21	461	503	1
4	493	18	475	511	1
5	502	17	485	519	1
6	509	15	494	524	1
7	515	14	501	529	1
8	521	14	507	535	1
9	526	13	513	539	1
10	530	12	518	542	1
11	534	12	522	546	1
12	538	12	526	550	1
13	542	11	531	553	1
14	546	11	535	557	1
15	549	11	538	560	1
16	552	10	542	562	1
17	555	10	545	565	1
18	558	10	548	568	1
19	561	10	551	571	1
20	564	10	554	574	1
21	567	10	557	577	1
22	569	10	559	579	1
23	572	9	563	581	1
24	574	9	565	583	2
25	577	9	568	586	2
26	579	9	570	588	2
27	582	9	573	591	2
28	584	9	575	593	2
29	586	9	577	595	2
30	589	9	580	598	2
31	591	9	582	600	2
32	593	9	584	602	2
33	596	9	587	605	2
34	598	9	589	607	2
35	600	9	591	609	2
36	603	9	594	612	2
37	605	9	596	614	3
38	607	9	598	616	3
39	609	9	600	618	3
40	612	9	603	621	3
41	614	9	605	623	3
42	617	9	608	626	3
43	619	9	610	628	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	621	9	612	630	3
45	624	9	615	633	3
46	626	9	617	635	3
47	629	9	620	638	3
48	631	10	621	641	3
49	634	10	624	644	3
50	637	10	627	647	3
51	640	10	630	650	3
52	643	10	633	653	3
53	646	10	636	656	3
54	649	11	638	660	3
55	652	11	641	663	3
56	655	11	644	666	3
57	659	11	648	670	3
58	662	12	650	674	3
59	666	12	654	678	3
60	671	12	659	683	4
61	675	13	662	688	4
62	680	14	666	694	4
63	686	14	672	700	4
64	692	15	677	707	4
65	699	17	682	716	4
66	708	18	690	726	4
67	719	21	698	740	4
68	734	25	709	759	4
69	759	35	724	794	4
70	802	64	738	866	4

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Science: Grade 8

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	398	64	334	462	1
1	441	35	406	476	1
2	466	25	441	491	1
3	481	21	460	502	1
4	492	18	474	510	1
5	501	17	484	518	1
6	509	15	494	524	1
7	515	14	501	529	1
8	521	14	507	535	1
9	526	13	513	539	1
10	530	13	517	543	1
11	535	12	523	547	1
12	539	12	527	551	1
13	543	11	532	554	1
14	546	11	535	557	1
15	550	11	539	561	1
16	553	11	542	564	1
17	556	10	546	566	1
18	559	10	549	569	1
19	562	10	552	572	1
20	565	10	555	575	1
21	568	10	558	578	1
22	570	10	560	580	2
23	573	10	563	583	2
24	576	9	567	585	2
25	578	9	569	587	2
26	581	9	572	590	2
27	583	9	574	592	2
28	586	9	577	595	2
29	588	9	579	597	2
30	590	9	581	599	2
31	593	9	584	602	2
32	595	9	586	604	2
33	597	9	588	606	2
34	600	9	591	609	2
35	602	9	593	611	2
36	604	9	595	613	2
37	607	9	598	616	2
38	609	9	600	618	2
39	611	9	602	620	3
40	614	9	605	623	3
41	616	9	607	625	3
42	618	9	609	627	3
43	621	9	612	630	3

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	623	9	614	632	3
45	626	9	617	635	3
46	628	9	619	637	3
47	631	9	622	640	3
48	633	10	623	643	3
49	636	10	626	646	3
50	639	10	629	649	3
51	642	10	632	652	3
52	644	10	634	654	3
53	647	10	637	657	3
54	650	10	640	660	3
55	654	11	643	665	3
56	657	11	646	668	3
57	661	11	650	672	3
58	664	12	652	676	3
59	668	12	656	680	3
60	672	12	660	684	3
61	677	13	664	690	4
62	682	14	668	696	4
63	687	14	673	701	4
64	694	15	679	709	4
65	701	17	684	718	4
66	710	18	692	728	4
67	720	21	699	741	4
68	735	25	710	760	4
69	761	35	726	796	4
70	803	64	739	867	4

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Science: Grade 11

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
0	394	64	330	458	1
1	437	36	401	473	1
2	462	25	437	487	1
3	477	21	456	498	1
4	488	18	470	506	1
5	497	17	480	514	1
6	504	15	489	519	1
7	510	14	496	524	1
8	516	13	503	529	1
9	520	13	507	533	1
10	525	12	513	537	1
11	529	12	517	541	1
12	533	11	522	544	1
13	537	11	526	548	1
14	540	11	529	551	1
15	543	10	533	553	1
16	546	10	536	556	1
17	549	10	539	559	1
18	552	10	542	562	1
19	555	10	545	565	1
20	557	9	548	566	1
21	560	9	551	569	1
22	562	9	553	571	1
23	565	9	556	574	1
24	567	9	558	576	2
25	569	9	560	578	2
26	571	9	562	580	2
27	573	9	564	582	2
28	576	9	567	585	2
29	578	9	569	587	2
30	580	8	572	588	2
31	582	8	574	590	2
32	584	8	576	592	2
33	586	8	578	594	2
34	588	8	580	596	2
35	590	8	582	598	2
36	592	8	584	600	2
37	593	8	585	601	2
38	595	8	587	603	2
39	597	8	589	605	2
40	599	8	591	607	2
41	601	8	593	609	2
42	603	8	595	611	2
43	605	8	597	613	2

Raw Score (RS)	Scale Score (SS)	Standard Error (SE)	SS-1SE	SS+1SE	Performance Level
44	607	8	599	615	2
45	609	8	601	617	2
46	610	8	602	618	3
47	612	8	604	620	3
48	614	8	606	622	3
49	616	8	608	624	3
50	618	8	610	626	3
51	620	8	612	628	3
52	622	8	614	630	3
53	624	8	616	632	3
54	626	8	618	634	3
55	628	8	620	636	3
56	630	9	621	639	3
57	632	9	623	641	3
58	634	9	625	643	3
59	636	9	627	645	3
60	639	9	630	648	3
61	641	9	632	650	3
62	643	9	634	652	3
63	646	9	637	655	3
64	648	9	639	657	3
65	651	9	642	660	3
66	653	10	643	663	3
67	656	10	646	666	3
68	659	10	649	669	3
69	662	10	652	672	3
70	665	11	654	676	3
71	668	11	657	679	3
72	672	11	661	683	4
73	675	12	663	687	4
74	679	12	667	691	4
75	684	13	671	697	4
76	689	13	676	702	4
77	694	14	680	708	4
78	700	15	685	715	4
79	707	16	691	723	4
80	715	18	697	733	4
81	726	21	705	747	4
82	741	25	716	766	4
83	766	35	731	801	4
84	808	64	744	872	4

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APPENDIX G: Raw Score to Scale Score Frequency Tables

Data file 07/30/08 public schools only.

Reading: Grade 3

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	401	64	1	0	0.00	0	0.00
1	445	36	1	0	0.00	0	0.00
2	471	26	1	0	0.00	0	0.00
3	487	22	1	3	0.03	3	0.03
4	499	19	2	0	0.00	3	0.03
5	508	18	2	0	0.00	3	0.03
6	517	16	2	0	0.00	3	0.03
7	524	15	2	0	0.00	3	0.03
8	530	15	2	2	0.02	5	0.06
9	536	14	2	5	0.06	10	0.11
10	541	13	2	4	0.04	14	0.16
11	546	13	2	16	0.18	30	0.34
12	551	13	2	19	0.21	49	0.55
13	556	12	2	21	0.23	70	0.78
14	560	12	2	29	0.32	99	1.11
15	564	12	2	46	0.51	145	1.62
16	568	12	2	68	0.76	213	2.38
17	571	11	2	81	0.91	294	3.29
18	575	11	2	91	1.02	385	4.30
19	579	11	2	102	1.14	487	5.44
20	582	11	2	119	1.33	606	6.78
21	585	11	2	119	1.33	725	8.11
22	589	11	2	130	1.45	855	9.56
23	592	11	2	155	1.73	1010	11.29
24	595	11	3	139	1.55	1149	12.85
25	598	10	3	188	2.10	1337	14.95
26	601	10	3	177	1.98	1514	16.93
27	604	10	3	199	2.22	1713	19.15
28	607	10	3	225	2.52	1938	21.67
29	610	10	3	245	2.74	2183	24.41
30	614	10	3	271	3.03	2454	27.44
31	617	10	3	272	3.04	2726	30.48
32	620	10	3	294	3.29	3020	33.77
33	623	10	3	268	3.00	3288	36.76
34	626	10	3	297	3.32	3585	40.08
35	629	11	3	279	3.12	3864	43.20
36	632	11	3	317	3.54	4181	46.75
37	636	11	3	337	3.77	4518	50.51
38	639	11	3	325	3.63	4843	54.15
39	642	11	3	338	3.78	5181	57.93
40	646	11	3	354	3.96	5535	61.89
41	649	11	3	349	3.90	5884	65.79
42	653	12	3	347	3.88	6231	69.67
43	657	12	3	371	4.15	6602	73.81

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	661	12	3	348	3.89	6950	77.71
45	665	12	4	331	3.70	7281	81.41
46	670	13	4	310	3.47	7591	84.87
47	675	13	4	306	3.42	7897	88.29
48	680	14	4	275	3.07	8172	91.37
49	686	15	4	242	2.71	8414	94.07
50	693	16	4	190	2.12	8604	96.20
51	700	17	4	147	1.64	8751	97.84
52	710	19	4	97	1.08	8848	98.93
53	721	21	4	57	0.64	8905	99.56
54	736	26	4	27	0.30	8932	99.87
55	762	36	4	9	0.10	8941	99.97
56	805	64	4	3	0.03	8944	100.00

Reading: Grade 4

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	418	64	1	1	0.01	1	0.01
1	461	36	1	0	0.00	1	0.01
2	487	26	1	0	0.00	1	0.01
3	503	22	1	0	0.00	1	0.01
4	515	19	1	1	0.01	2	0.02
5	524	17	1	0	0.00	2	0.02
6	532	16	2	2	0.02	4	0.05
7	539	15	2	1	0.01	5	0.06
8	546	14	2	2	0.02	7	0.08
9	551	14	2	6	0.07	13	0.15
10	556	13	2	8	0.09	21	0.24
11	561	13	2	9	0.10	30	0.34
12	566	12	2	15	0.17	45	0.51
13	570	12	2	22	0.25	67	0.75
14	574	12	2	35	0.39	102	1.15
15	578	11	2	48	0.54	150	1.69
16	581	11	2	50	0.56	200	2.25
17	585	11	2	74	0.83	274	3.08
18	588	11	2	71	0.80	345	3.88
19	592	11	2	95	1.07	440	4.95
20	595	11	2	107	1.20	547	6.16
21	598	10	2	127	1.43	674	7.59
22	601	10	2	136	1.53	810	9.12
23	604	10	2	133	1.50	943	10.62
24	607	10	3	137	1.54	1080	12.16
25	610	10	3	191	2.15	1271	14.31
26	613	10	3	187	2.11	1458	16.42
27	616	10	3	163	1.84	1621	18.25
28	619	10	3	226	2.54	1847	20.79
29	622	10	3	220	2.48	2067	23.27
30	625	10	3	230	2.59	2297	25.86
31	628	10	3	250	2.81	2547	28.68
32	631	10	3	235	2.65	2782	31.32
33	634	10	3	266	2.99	3048	34.32
34	637	10	3	264	2.97	3312	37.29
35	640	10	3	302	3.40	3614	40.69
36	643	10	3	331	3.73	3945	44.42
37	646	11	3	341	3.84	4286	48.25
38	649	11	3	312	3.51	4598	51.77
39	652	11	3	349	3.93	4947	55.70
40	656	11	3	315	3.55	5262	59.24
41	659	11	3	349	3.93	5611	63.17
42	663	11	3	374	4.21	5985	67.38
43	667	12	3	355	4.00	6340	71.38

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	671	12	4	374	4.21	6714	75.59
45	675	12	4	327	3.68	7041	79.27
46	679	13	4	345	3.88	7386	83.16
47	684	13	4	318	3.58	7704	86.74
48	689	14	4	263	2.96	7967	89.70
49	695	15	4	266	2.99	8233	92.69
50	702	16	4	232	2.61	8465	95.31
51	709	17	4	158	1.78	8623	97.08
52	718	19	4	115	1.29	8738	98.38
53	729	21	4	78	0.88	8816	99.26
54	744	25	4	40	0.45	8856	99.71
55	770	36	4	18	0.20	8874	99.91
56	813	64	4	8	0.09	8882	100.00

Reading: Grade 5

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	438	64	1	2	0.02	2	0.02
1	481	36	1	0	0.00	2	0.02
2	506	25	1	0	0.00	2	0.02
3	522	21	1	0	0.00	2	0.02
4	533	18	1	0	0.00	2	0.02
5	541	17	1	2	0.02	4	0.04
6	549	16	2	1	0.01	5	0.06
7	555	15	2	0	0.00	5	0.06
8	561	14	2	0	0.00	5	0.06
9	566	13	2	4	0.04	9	0.10
10	571	13	2	8	0.09	17	0.19
11	575	12	2	18	0.20	35	0.39
12	579	12	2	26	0.29	61	0.68
13	583	12	2	41	0.46	102	1.13
14	587	11	2	41	0.46	143	1.59
15	591	11	2	67	0.74	210	2.33
16	594	11	2	52	0.58	262	2.91
17	597	11	2	68	0.76	330	3.67
18	601	10	2	91	1.01	421	4.68
19	604	10	2	94	1.04	515	5.72
20	607	10	2	121	1.34	636	7.06
21	610	10	2	140	1.55	776	8.62
22	613	10	2	118	1.31	894	9.93
23	615	10	2	148	1.64	1042	11.57
24	618	10	2	183	2.03	1225	13.61
25	621	10	3	169	1.88	1394	15.48
26	624	10	3	186	2.07	1580	17.55
27	627	10	3	196	2.18	1776	19.72
28	629	10	3	204	2.27	1980	21.99
29	632	10	3	222	2.47	2202	24.46
30	635	10	3	237	2.63	2439	27.09
31	638	10	3	247	2.74	2686	29.83
32	641	10	3	286	3.18	2972	33.01
33	643	10	3	298	3.31	3270	36.32
34	646	10	3	311	3.45	3581	39.77
35	649	10	3	323	3.59	3904	43.36
36	652	10	3	325	3.61	4229	46.97
37	655	10	3	353	3.92	4582	50.89
38	658	11	3	350	3.89	4932	54.78
39	662	11	3	344	3.82	5276	58.60
40	665	11	3	394	4.38	5670	62.97
41	668	11	3	367	4.08	6037	67.05
42	672	11	3	365	4.05	6402	71.10
43	676	12	3	363	4.03	6765	75.13

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	680	12	4	360	4.00	7125	79.13
45	684	12	4	334	3.71	7459	82.84
46	688	13	4	327	3.63	7786	86.47
47	693	13	4	287	3.19	8073	89.66
48	698	14	4	253	2.81	8326	92.47
49	704	15	4	206	2.29	8532	94.76
50	710	16	4	162	1.80	8694	96.56
51	718	17	4	136	1.51	8830	98.07
52	727	19	4	74	0.82	8904	98.89
53	738	21	4	60	0.67	8964	99.56
54	753	26	4	26	0.29	8990	99.84
55	779	36	4	10	0.11	9000	99.96
56	822	64	4	4	0.04	9004	100.00

Reading: Grade 6

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	444	64	1	0	0.00	0	0.00
1	487	36	1	0	0.00	0	0.00
2	512	26	1	0	0.00	0	0.00
3	528	21	1	0	0.00	0	0.00
4	539	19	1	0	0.00	0	0.00
5	548	17	1	1	0.01	1	0.01
6	555	16	1	1	0.01	2	0.02
7	562	15	2	1	0.01	3	0.03
8	568	14	2	4	0.04	7	0.08
9	573	13	2	6	0.07	13	0.14
10	578	13	2	12	0.13	25	0.28
11	583	12	2	23	0.25	48	0.53
12	587	12	2	29	0.32	77	0.85
13	591	12	2	33	0.37	110	1.22
14	595	12	2	51	0.56	161	1.78
15	599	11	2	70	0.77	231	2.56
16	602	11	2	73	0.81	304	3.36
17	606	11	2	93	1.03	397	4.39
18	609	11	2	90	1.00	487	5.39
19	612	11	2	92	1.02	579	6.41
20	616	11	2	113	1.25	692	7.66
21	619	11	2	109	1.21	801	8.87
22	622	10	2	99	1.10	900	9.96
23	625	10	2	115	1.27	1015	11.23
24	628	10	2	122	1.35	1137	12.58
25	631	10	2	144	1.59	1281	14.18
26	634	10	2	160	1.77	1441	15.95
27	637	10	3	146	1.62	1587	17.57
28	640	10	3	182	2.01	1769	19.58
29	643	10	3	180	1.99	1949	21.57
30	646	10	3	177	1.96	2126	23.53
31	649	10	3	192	2.13	2318	25.66
32	652	10	3	209	2.31	2527	27.97
33	656	11	3	271	3.00	2798	30.97
34	659	11	3	290	3.21	3088	34.18
35	662	11	3	275	3.04	3363	37.22
36	665	11	3	269	2.98	3632	40.20
37	669	11	3	342	3.79	3974	43.98
38	672	11	3	331	3.66	4305	47.65
39	676	11	3	393	4.35	4698	52.00
40	679	11	3	415	4.59	5113	56.59
41	683	12	3	390	4.32	5503	60.91
42	687	12	3	414	4.58	5917	65.49
43	691	12	3	396	4.38	6313	69.87

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	695	12	4	451	4.99	6764	74.86
45	700	13	4	412	4.56	7176	79.42
46	705	13	4	410	4.54	7586	83.96
47	710	14	4	332	3.67	7918	87.64
48	715	14	4	332	3.67	8250	91.31
49	722	15	4	251	2.78	8501	94.09
50	728	16	4	183	2.03	8684	96.12
51	736	17	4	155	1.72	8839	97.83
52	745	19	4	96	1.06	8935	98.89
53	757	21	4	66	0.73	9001	99.62
54	773	26	4	26	0.29	9027	99.91
55	798	36	4	4	0.04	9031	99.96
56	842	64	4	4	0.04	9035	100.00

Reading: Grade 7

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	463	64	1	0	0.00	0	0.00
1	506	36	1	1	0.01	1	0.01
2	531	26	1	0	0.00	1	0.01
3	547	21	1	0	0.00	1	0.01
4	558	19	1	1	0.01	2	0.02
5	567	17	2	1	0.01	3	0.03
6	574	16	2	1	0.01	4	0.04
7	581	15	2	2	0.02	6	0.07
8	587	14	2	7	0.08	13	0.14
9	592	13	2	10	0.11	23	0.25
10	597	13	2	10	0.11	33	0.36
11	602	12	2	21	0.23	54	0.59
12	606	12	2	25	0.27	79	0.86
13	610	12	2	29	0.32	108	1.18
14	614	11	2	50	0.55	158	1.73
15	618	11	2	74	0.81	232	2.54
16	621	11	2	79	0.86	311	3.40
17	624	11	2	95	1.04	406	4.44
18	628	11	2	97	1.06	503	5.50
19	631	11	2	100	1.09	603	6.60
20	634	10	2	122	1.33	725	7.93
21	637	10	2	139	1.52	864	9.45
22	640	10	2	148	1.62	1012	11.07
23	643	10	2	166	1.82	1178	12.89
24	646	10	2	173	1.89	1351	14.78
25	649	10	2	167	1.83	1518	16.61
26	652	10	3	213	2.33	1731	18.94
27	655	10	3	181	1.98	1912	20.92
28	658	10	3	233	2.55	2145	23.47
29	661	10	3	201	2.20	2346	25.66
30	663	10	3	241	2.64	2587	28.30
31	666	10	3	250	2.73	2837	31.04
32	669	10	3	293	3.21	3130	34.24
33	672	10	3	297	3.25	3427	37.49
34	675	10	3	275	3.01	3702	40.50
35	678	10	3	327	3.58	4029	44.08
36	681	10	3	323	3.53	4352	47.61
37	684	10	3	339	3.71	4691	51.32
38	687	11	3	341	3.73	5032	55.05
39	690	11	3	356	3.89	5388	58.94
40	694	11	3	362	3.96	5750	62.90
41	697	11	3	368	4.03	6118	66.93
42	701	11	3	371	4.06	6489	70.99
43	705	12	3	351	3.84	6840	74.83

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	708	12	3	370	4.05	7210	78.88
45	713	12	4	327	3.58	7537	82.45
46	717	13	4	341	3.73	7878	86.18
47	722	13	4	288	3.15	8166	89.33
48	727	14	4	269	2.94	8435	92.28
49	732	14	4	209	2.29	8644	94.56
50	739	15	4	165	1.81	8809	96.37
51	746	17	4	151	1.65	8960	98.02
52	755	18	4	77	0.84	9037	98.86
53	766	21	4	59	0.65	9096	99.51
54	781	25	4	38	0.42	9134	99.92
55	806	35	4	6	0.07	9140	99.99
56	849	64	4	1	0.01	9141	100.00

Reading: Grade 8

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	475	65	1	1	0.01	1	0.01
1	519	36	1	0	0.00	1	0.01
2	545	26	1	0	0.00	1	0.01
3	561	22	1	1	0.01	2	0.02
4	573	19	1	0	0.00	2	0.02
5	582	17	2	0	0.00	2	0.02
6	590	16	2	2	0.02	4	0.04
7	596	15	2	2	0.02	6	0.06
8	602	14	2	1	0.01	7	0.08
9	608	13	2	5	0.05	12	0.13
10	612	13	2	7	0.08	19	0.20
11	617	12	2	15	0.16	34	0.37
12	621	12	2	15	0.16	49	0.53
13	625	12	2	28	0.30	77	0.83
14	629	11	2	51	0.55	128	1.38
15	633	11	2	65	0.70	193	2.07
16	636	11	2	79	0.85	272	2.92
17	639	11	2	81	0.87	353	3.79
18	643	11	2	108	1.16	461	4.95
19	646	10	2	141	1.52	602	6.47
20	649	10	2	129	1.39	731	7.86
21	652	10	2	161	1.73	892	9.59
22	655	10	2	159	1.71	1051	11.30
23	658	10	2	203	2.18	1254	13.48
24	660	10	2	215	2.31	1469	15.79
25	663	10	2	210	2.26	1679	18.04
26	666	10	2	222	2.39	1901	20.43
27	669	10	3	244	2.62	2145	23.05
28	672	10	3	226	2.43	2371	25.48
29	674	10	3	244	2.62	2615	28.10
30	677	10	3	275	2.96	2890	31.06
31	680	10	3	320	3.44	3210	34.50
32	683	10	3	318	3.42	3528	37.92
33	686	10	3	288	3.10	3816	41.01
34	689	10	3	313	3.36	4129	44.37
35	692	10	3	350	3.76	4479	48.14
36	695	10	3	335	3.60	4814	51.74
37	698	10	3	363	3.90	5177	55.64
38	701	11	3	397	4.27	5574	59.90
39	704	11	3	383	4.12	5957	64.02
40	707	11	3	386	4.15	6343	68.17
41	711	11	3	401	4.31	6744	72.48
42	714	11	3	386	4.15	7130	76.63
43	718	12	3	373	4.01	7503	80.63

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	722	12	3	328	3.52	7831	84.16
45	726	12	3	357	3.84	8188	88.00
46	731	13	4	285	3.06	8473	91.06
47	735	13	4	262	2.82	8735	93.87
48	741	14	4	179	1.92	8914	95.80
49	746	15	4	140	1.50	9054	97.30
50	753	16	4	116	1.25	9170	98.55
51	760	17	4	73	0.78	9243	99.33
52	769	19	4	37	0.40	9280	99.73
53	780	21	4	20	0.21	9300	99.95
54	795	25	4	5	0.05	9305	100.00
55	821	36	4	0	0.00	9305	100.00
56	864	64	4	0	0.00	9305	100.00

Reading: Grade 11

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	513	64	1	0	0.00	0	0.00
1	556	36	1	1	0.01	1	0.01
2	582	26	1	0	0.00	1	0.01
3	598	22	1	0	0.00	1	0.01
4	610	19	1	2	0.02	3	0.04
5	619	17	1	0	0.00	3	0.04
6	627	16	2	5	0.06	8	0.10
7	634	15	2	7	0.08	15	0.18
8	641	15	2	19	0.23	34	0.41
9	647	14	2	30	0.36	64	0.77
10	652	14	2	46	0.55	110	1.32
11	657	13	2	64	0.77	174	2.09
12	662	13	2	80	0.96	254	3.06
13	667	13	2	94	1.13	348	4.19
14	672	13	2	95	1.14	443	5.33
15	676	12	2	116	1.40	559	6.72
16	681	12	2	114	1.37	673	8.10
17	685	12	2	155	1.86	828	9.96
18	689	12	2	180	2.17	1008	12.13
19	693	12	2	204	2.45	1212	14.58
20	698	12	2	237	2.85	1449	17.43
21	702	12	2	259	3.12	1708	20.55
22	706	12	2	304	3.66	2012	24.20
23	710	12	2	286	3.44	2298	27.64
24	715	12	2	362	4.35	2660	32.00
25	719	12	3	379	4.56	3039	36.56
26	724	13	3	431	5.18	3470	41.74
27	728	13	3	444	5.34	3914	47.08
28	733	13	3	486	5.85	4400	52.93
29	738	13	3	504	6.06	4904	58.99
30	743	14	3	510	6.13	5414	65.13
31	749	14	3	445	5.35	5859	70.48
32	755	15	3	468	5.63	6327	76.11
33	762	16	3	478	5.75	6805	81.86
34	769	16	3	391	4.70	7196	86.56
35	777	18	3	337	4.05	7533	90.62
36	787	19	4	299	3.60	7832	94.21
37	799	22	4	218	2.62	8050	96.84
38	815	26	4	151	1.82	8201	98.65
39	841	36	4	95	1.14	8296	99.80
40	885	64	4	17	0.20	8313	100.00

Mathematics: Grade 3

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	371	64	1	1	0.01	1	0.01
1	414	35	1	5	0.06	6	0.07
2	439	25	1	1	0.01	7	0.08
3	454	21	1	1	0.01	8	0.09
4	465	18	1	2	0.02	10	0.11
5	473	17	1	0	0.00	10	0.11
6	481	15	1	0	0.00	10	0.11
7	487	14	1	0	0.00	10	0.11
8	492	13	1	0	0.00	10	0.11
9	497	13	1	0	0.00	10	0.11
10	502	12	1	0	0.00	10	0.11
11	506	12	1	0	0.00	10	0.11
12	510	11	1	1	0.01	11	0.12
13	513	11	1	0	0.00	11	0.12
14	517	11	1	0	0.00	11	0.12
15	520	11	1	1	0.01	12	0.13
16	523	10	1	5	0.06	17	0.19
17	526	10	1	1	0.01	18	0.20
18	529	10	1	4	0.04	22	0.25
19	532	10	2	7	0.08	29	0.32
20	534	10	2	10	0.11	39	0.44
21	537	9	2	11	0.12	50	0.56
22	540	9	2	21	0.23	71	0.79
23	542	9	2	22	0.25	93	1.04
24	544	9	2	23	0.26	116	1.29
25	547	9	2	19	0.21	135	1.51
26	549	9	2	40	0.45	175	1.95
27	551	9	2	26	0.29	201	2.24
28	553	9	2	33	0.37	234	2.61
29	556	9	2	37	0.41	271	3.02
30	558	9	2	37	0.41	308	3.44
31	560	9	2	42	0.47	350	3.90
32	562	9	2	41	0.46	391	4.36
33	564	8	2	40	0.45	431	4.81
34	566	8	2	39	0.44	470	5.24
35	568	8	2	57	0.64	527	5.88
36	570	8	2	62	0.69	589	6.57
37	572	8	2	57	0.64	646	7.21
38	574	8	2	58	0.65	704	7.85
39	576	8	2	70	0.78	774	8.64
40	578	8	2	71	0.79	845	9.43
41	580	8	2	70	0.78	915	10.21
42	582	8	2	83	0.93	998	11.13
43	584	8	2	78	0.87	1076	12.00

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	586	8	2	100	1.12	1176	13.12
45	588	8	2	97	1.08	1273	14.20
46	590	8	2	97	1.08	1370	15.29
47	592	8	2	93	1.04	1463	16.32
48	594	8	2	104	1.16	1567	17.48
49	596	8	2	100	1.12	1667	18.60
50	598	8	2	116	1.29	1783	19.89
51	600	8	3	106	1.18	1889	21.08
52	602	9	3	128	1.43	2017	22.50
53	604	9	3	125	1.39	2142	23.90
54	606	9	3	150	1.67	2292	25.57
55	608	9	3	151	1.68	2443	27.26
56	611	9	3	156	1.74	2599	29.00
57	613	9	3	181	2.02	2780	31.02
58	615	9	3	176	1.96	2956	32.98
59	617	9	3	167	1.86	3123	34.84
60	620	9	3	195	2.18	3318	37.02
61	622	9	3	189	2.11	3507	39.13
62	625	9	3	224	2.50	3731	41.63
63	627	9	3	226	2.52	3957	44.15
64	630	10	3	212	2.37	4169	46.51
65	632	10	3	247	2.76	4416	49.27
66	635	10	3	210	2.34	4626	51.61
67	638	10	3	267	2.98	4893	54.59
68	641	10	3	286	3.19	5179	57.78
69	644	11	3	261	2.91	5440	60.69
70	647	11	3	290	3.24	5730	63.93
71	651	11	3	297	3.31	6027	67.24
72	654	11	3	279	3.11	6306	70.36
73	658	12	3	287	3.20	6593	73.56
74	662	12	3	342	3.82	6935	77.37
75	667	13	3	328	3.66	7263	81.03
76	672	13	4	264	2.95	7527	83.98
77	677	14	4	283	3.16	7810	87.14
78	683	15	4	246	2.74	8056	89.88
79	691	17	4	244	2.72	8300	92.60
80	699	18	4	222	2.48	8522	95.08
81	710	21	4	189	2.11	8711	97.19
82	725	25	4	139	1.55	8850	98.74
83	750	35	4	70	0.78	8920	99.52
84	793	64	4	43	0.48	8963	100.00

Mathematics: Grade 4

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	406	64	1	1	0.01	1	0.01
1	449	35	1	2	0.02	3	0.03
2	474	25	1	0	0.00	3	0.03
3	489	21	1	0	0.00	3	0.03
4	500	18	1	0	0.00	3	0.03
5	509	16	1	0	0.00	3	0.03
6	516	15	1	0	0.00	3	0.03
7	522	14	1	1	0.01	4	0.04
8	527	13	1	1	0.01	5	0.06
9	532	13	1	0	0.00	5	0.06
10	537	12	1	0	0.00	5	0.06
11	541	12	1	2	0.02	7	0.08
12	545	11	1	0	0.00	7	0.08
13	548	11	2	0	0.00	7	0.08
14	552	11	2	4	0.04	11	0.12
15	555	10	2	3	0.03	14	0.16
16	558	10	2	5	0.06	19	0.21
17	561	10	2	5	0.06	24	0.27
18	564	10	2	12	0.13	36	0.40
19	566	10	2	13	0.15	49	0.55
20	569	9	2	35	0.39	84	0.94
21	571	9	2	32	0.36	116	1.30
22	574	9	2	30	0.34	146	1.64
23	576	9	2	50	0.56	196	2.20
24	579	9	2	45	0.51	241	2.71
25	581	9	2	45	0.51	286	3.21
26	583	9	2	59	0.66	345	3.88
27	585	9	2	59	0.66	404	4.54
28	587	9	2	55	0.62	459	5.16
29	590	9	2	70	0.79	529	5.95
30	592	9	2	62	0.70	591	6.64
31	594	8	2	73	0.82	664	7.46
32	596	8	2	89	1.00	753	8.46
33	598	8	2	83	0.93	836	9.40
34	600	8	2	82	0.92	918	10.32
35	602	8	2	86	0.97	1004	11.29
36	604	8	2	99	1.11	1103	12.40
37	606	8	2	80	0.90	1183	13.30
38	608	8	2	106	1.19	1289	14.49
39	610	8	2	113	1.27	1402	15.76
40	612	8	2	118	1.33	1520	17.09
41	613	8	2	114	1.28	1634	18.37
42	615	8	2	134	1.51	1768	19.87
43	617	8	2	120	1.35	1888	21.22

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	619	8	3	121	1.36	2009	22.58
45	621	8	3	119	1.34	2128	23.92
46	623	8	3	146	1.64	2274	25.56
47	625	8	3	145	1.63	2419	27.19
48	627	8	3	147	1.65	2566	28.84
49	629	8	3	165	1.85	2731	30.70
50	631	8	3	147	1.65	2878	32.35
51	633	8	3	164	1.84	3042	34.20
52	635	8	3	160	1.80	3202	35.99
53	637	8	3	205	2.30	3407	38.30
54	639	9	3	175	1.97	3582	40.27
55	641	9	3	199	2.24	3781	42.50
56	643	9	3	181	2.03	3962	44.54
57	645	9	3	200	2.25	4162	46.79
58	648	9	3	200	2.25	4362	49.03
59	650	9	3	190	2.14	4552	51.17
60	652	9	3	226	2.54	4778	53.71
61	655	9	3	224	2.52	5002	56.23
62	657	9	3	221	2.48	5223	58.71
63	659	9	3	248	2.79	5471	61.50
64	662	9	3	232	2.61	5703	64.11
65	665	10	3	223	2.51	5926	66.61
66	667	10	3	232	2.61	6158	69.22
67	670	10	3	251	2.82	6409	72.04
68	673	10	3	225	2.53	6634	74.57
69	676	10	3	218	2.45	6852	77.02
70	679	11	3	221	2.48	7073	79.51
71	683	11	3	238	2.68	7311	82.18
72	686	11	4	193	2.17	7504	84.35
73	690	12	4	192	2.16	7696	86.51
74	694	12	4	189	2.12	7885	88.64
75	699	13	4	195	2.19	8080	90.83
76	704	13	4	179	2.01	8259	92.84
77	709	14	4	144	1.62	8403	94.46
78	715	15	4	153	1.72	8556	96.18
79	722	16	4	116	1.30	8672	97.48
80	731	18	4	93	1.05	8765	98.53
81	742	21	4	60	0.67	8825	99.20
82	757	25	4	48	0.54	8873	99.74
83	782	35	4	15	0.17	8888	99.91
84	824	64	4	8	0.09	8896	100.00

Mathematics: Grade 5

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	422	64	1	1	0.01	1	0.01
1	465	35	1	1	0.01	2	0.02
2	490	25	1	2	0.02	4	0.04
3	505	21	1	3	0.03	7	0.08
4	516	18	1	3	0.03	10	0.11
5	525	17	1	0	0.00	10	0.11
6	532	15	1	2	0.02	12	0.13
7	538	14	1	0	0.00	12	0.13
8	544	14	1	2	0.02	14	0.16
9	549	13	1	0	0.00	14	0.16
10	553	12	1	0	0.00	14	0.16
11	558	12	1	1	0.01	15	0.17
12	561	11	1	0	0.00	15	0.17
13	565	11	1	1	0.01	16	0.18
14	569	11	1	2	0.02	18	0.20
15	572	11	1	3	0.03	21	0.23
16	575	10	1	3	0.03	24	0.27
17	578	10	1	6	0.07	30	0.33
18	581	10	1	6	0.07	36	0.40
19	584	10	2	10	0.11	46	0.51
20	586	10	2	12	0.13	58	0.64
21	589	9	2	18	0.20	76	0.84
22	591	9	2	31	0.34	107	1.19
23	594	9	2	43	0.48	150	1.66
24	596	9	2	39	0.43	189	2.10
25	599	9	2	41	0.45	230	2.55
26	601	9	2	50	0.55	280	3.10
27	603	9	2	62	0.69	342	3.79
28	605	9	2	56	0.62	398	4.41
29	608	9	2	73	0.81	471	5.22
30	610	9	2	84	0.93	555	6.15
31	612	9	2	99	1.10	654	7.25
32	614	9	2	89	0.99	743	8.24
33	616	8	2	85	0.94	828	9.18
34	618	8	2	103	1.14	931	10.32
35	620	8	2	103	1.14	1034	11.46
36	622	8	2	101	1.12	1135	12.58
37	624	8	2	117	1.30	1252	13.88
38	626	8	2	140	1.55	1392	15.43
39	628	8	2	130	1.44	1522	16.88
40	630	8	2	123	1.36	1645	18.24
41	632	8	2	118	1.31	1763	19.55
42	634	8	2	150	1.66	1913	21.21
43	636	8	2	172	1.91	2085	23.12

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	638	8	3	165	1.83	2250	24.95
45	640	8	3	176	1.95	2426	26.90
46	642	8	3	152	1.69	2578	28.58
47	644	8	3	157	1.74	2735	30.32
48	646	8	3	181	2.01	2916	32.33
49	648	8	3	196	2.17	3112	34.50
50	650	8	3	183	2.03	3295	36.53
51	652	8	3	206	2.28	3501	38.82
52	654	8	3	175	1.94	3676	40.76
53	656	9	3	211	2.34	3887	43.10
54	658	9	3	224	2.48	4111	45.58
55	660	9	3	172	1.91	4283	47.49
56	662	9	3	185	2.05	4468	49.54
57	664	9	3	198	2.20	4666	51.74
58	666	9	3	226	2.51	4892	54.24
59	669	9	3	205	2.27	5097	56.51
60	671	9	3	218	2.42	5315	58.93
61	673	9	3	242	2.68	5557	61.61
62	676	9	3	205	2.27	5762	63.89
63	678	9	3	192	2.13	5954	66.02
64	681	9	3	207	2.30	6161	68.31
65	683	10	3	199	2.21	6360	70.52
66	686	10	3	226	2.51	6586	73.02
67	689	10	3	208	2.31	6794	75.33
68	692	10	3	200	2.22	6994	77.55
69	695	10	3	204	2.26	7198	79.81
70	698	11	3	207	2.30	7405	82.10
71	701	11	4	156	1.73	7561	83.83
72	705	11	4	187	2.07	7748	85.91
73	709	12	4	197	2.18	7945	88.09
74	713	12	4	183	2.03	8128	90.12
75	717	13	4	186	2.06	8314	92.18
76	722	13	4	134	1.49	8448	93.67
77	727	14	4	146	1.62	8594	95.29
78	734	15	4	125	1.39	8719	96.67
79	741	16	4	100	1.11	8819	97.78
80	749	18	4	83	0.92	8902	98.70
81	760	21	4	59	0.65	8961	99.36
82	775	25	4	36	0.40	8997	99.76
83	800	35	4	16	0.18	9013	99.93
84	842	64	4	6	0.07	9019	100.00

Mathematics: Grade 6

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	439	64	1	0	0.00	0	0.00
1	482	35	1	0	0.00	0	0.00
2	507	25	1	0	0.00	0	0.00
3	522	21	1	1	0.01	1	0.01
4	533	18	1	0	0.00	1	0.01
5	542	17	1	0	0.00	1	0.01
6	549	15	1	0	0.00	1	0.01
7	555	14	1	0	0.00	1	0.01
8	561	14	1	0	0.00	1	0.01
9	565	13	1	2	0.02	3	0.03
10	570	12	1	0	0.00	3	0.03
11	574	12	1	0	0.00	3	0.03
12	578	12	1	1	0.01	4	0.04
13	582	11	1	3	0.03	7	0.08
14	585	11	1	3	0.03	10	0.11
15	589	11	1	2	0.02	12	0.13
16	592	10	1	4	0.04	16	0.18
17	595	10	1	4	0.04	20	0.22
18	598	10	1	8	0.09	28	0.31
19	600	10	1	9	0.10	37	0.41
20	603	10	2	18	0.20	55	0.61
21	606	10	2	14	0.15	69	0.76
22	608	9	2	25	0.28	94	1.04
23	611	9	2	31	0.34	125	1.38
24	613	9	2	40	0.44	165	1.82
25	616	9	2	38	0.42	203	2.24
26	618	9	2	53	0.59	256	2.83
27	620	9	2	72	0.80	328	3.63
28	622	9	2	53	0.59	381	4.21
29	625	9	2	41	0.45	422	4.67
30	627	9	2	60	0.66	482	5.33
31	629	9	2	74	0.82	556	6.15
32	631	9	2	67	0.74	623	6.89
33	633	9	2	80	0.88	703	7.77
34	635	9	2	89	0.98	792	8.76
35	637	9	2	70	0.77	862	9.53
36	639	8	2	95	1.05	957	10.58
37	641	8	2	103	1.14	1060	11.72
38	644	8	2	90	1.00	1150	12.72
39	646	8	2	106	1.17	1256	13.89
40	648	8	2	104	1.15	1360	15.04
41	650	8	2	113	1.25	1473	16.29
42	652	8	2	126	1.39	1599	17.68
43	654	8	2	158	1.75	1757	19.43

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	656	8	2	126	1.39	1883	20.82
45	658	8	2	121	1.34	2004	22.16
46	660	8	2	137	1.51	2141	23.68
47	662	8	3	135	1.49	2276	25.17
48	664	8	3	161	1.78	2437	26.95
49	666	8	3	161	1.78	2598	28.73
50	668	9	3	158	1.75	2756	30.48
51	670	9	3	159	1.76	2915	32.23
52	672	9	3	181	2.00	3096	34.24
53	674	9	3	142	1.57	3238	35.81
54	676	9	3	184	2.03	3422	37.84
55	679	9	3	215	2.38	3637	40.22
56	681	9	3	209	2.31	3846	42.53
57	683	9	3	210	2.32	4056	44.85
58	685	9	3	250	2.76	4306	47.62
59	688	9	3	229	2.53	4535	50.15
60	690	9	3	206	2.28	4741	52.43
61	692	9	3	242	2.68	4983	55.10
62	695	9	3	233	2.58	5216	57.68
63	697	10	3	242	2.68	5458	60.36
64	700	10	3	236	2.61	5694	62.97
65	703	10	3	217	2.40	5911	65.37
66	706	10	3	240	2.65	6151	68.02
67	709	10	3	251	2.78	6402	70.80
68	712	10	3	225	2.49	6627	73.28
69	715	11	3	232	2.57	6859	75.85
70	718	11	3	276	3.05	7135	78.90
71	721	11	3	224	2.48	7359	81.38
72	725	12	3	204	2.26	7563	83.63
73	729	12	4	193	2.13	7756	85.77
74	733	12	4	233	2.58	7989	88.34
75	738	13	4	196	2.17	8185	90.51
76	743	14	4	183	2.02	8368	92.54
77	748	14	4	184	2.03	8552	94.57
78	755	15	4	134	1.48	8686	96.05
79	762	17	4	123	1.36	8809	97.41
80	771	18	4	91	1.01	8900	98.42
81	782	21	4	61	0.67	8961	99.09
82	797	25	4	37	0.41	8998	99.50
83	822	35	4	34	0.38	9032	99.88
84	864	64	4	11	0.12	9043	100.00

Mathematics: Grade 7

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	455	64	1	0	0.00	0	0.00
1	498	35	1	0	0.00	0	0.00
2	523	25	1	0	0.00	0	0.00
3	538	21	1	0	0.00	0	0.00
4	549	18	1	0	0.00	0	0.00
5	557	16	1	0	0.00	0	0.00
6	564	15	1	0	0.00	0	0.00
7	571	14	1	0	0.00	0	0.00
8	576	13	1	0	0.00	0	0.00
9	581	13	1	0	0.00	0	0.00
10	585	12	1	1	0.01	1	0.01
11	590	12	1	1	0.01	2	0.02
12	593	11	1	1	0.01	3	0.03
13	597	11	1	1	0.01	4	0.04
14	600	11	1	1	0.01	5	0.05
15	604	10	1	1	0.01	6	0.07
16	607	10	1	7	0.08	13	0.14
17	610	10	1	8	0.09	21	0.23
18	612	10	1	14	0.15	35	0.38
19	615	10	1	21	0.23	56	0.61
20	618	10	1	24	0.26	80	0.87
21	620	9	2	32	0.35	112	1.22
22	623	9	2	39	0.43	151	1.65
23	625	9	2	42	0.46	193	2.11
24	628	9	2	54	0.59	247	2.70
25	630	9	2	65	0.71	312	3.41
26	632	9	2	56	0.61	368	4.02
27	634	9	2	64	0.70	432	4.72
28	637	9	2	73	0.80	505	5.51
29	639	9	2	68	0.74	573	6.25
30	641	9	2	75	0.82	648	7.07
31	643	9	2	58	0.63	706	7.71
32	645	8	2	71	0.78	777	8.48
33	647	8	2	71	0.78	848	9.26
34	649	8	2	82	0.90	930	10.15
35	651	8	2	83	0.91	1013	11.06
36	653	8	2	86	0.94	1099	12.00
37	655	8	2	85	0.93	1184	12.92
38	657	8	2	94	1.03	1278	13.95
39	659	8	2	103	1.12	1381	15.07
40	661	8	2	99	1.08	1480	16.16
41	663	8	2	109	1.19	1589	17.35
42	665	8	2	101	1.10	1690	18.45
43	667	8	2	117	1.28	1807	19.72

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	669	8	2	108	1.18	1915	20.90
45	671	8	2	122	1.33	2037	22.24
46	673	8	2	123	1.34	2160	23.58
47	675	8	2	116	1.27	2276	24.84
48	677	8	2	139	1.52	2415	26.36
49	679	8	3	139	1.52	2554	27.88
50	681	8	3	140	1.53	2694	29.41
51	683	8	3	144	1.57	2838	30.98
52	685	8	3	141	1.54	2979	32.52
53	687	9	3	150	1.64	3129	34.16
54	689	9	3	162	1.77	3291	35.92
55	691	9	3	171	1.87	3462	37.79
56	693	9	3	192	2.10	3654	39.89
57	695	9	3	182	1.99	3836	41.87
58	698	9	3	193	2.11	4029	43.98
59	700	9	3	215	2.35	4244	46.33
60	702	9	3	203	2.22	4447	48.54
61	705	9	3	221	2.41	4668	50.96
62	707	9	3	204	2.23	4872	53.18
63	709	9	3	233	2.54	5105	55.73
64	712	10	3	248	2.71	5353	58.43
65	715	10	3	222	2.42	5575	60.86
66	717	10	3	246	2.69	5821	63.54
67	720	10	3	227	2.48	6048	66.02
68	723	10	3	211	2.30	6259	68.32
69	726	11	3	246	2.69	6505	71.01
70	730	11	3	258	2.82	6763	73.82
71	733	11	3	274	2.99	7037	76.81
72	737	11	3	256	2.79	7293	79.61
73	740	12	3	251	2.74	7544	82.35
74	745	12	4	221	2.41	7765	84.76
75	749	13	4	227	2.48	7992	87.24
76	754	13	4	233	2.54	8225	89.78
77	759	14	4	216	2.36	8441	92.14
78	766	15	4	191	2.08	8632	94.23
79	773	17	4	165	1.80	8797	96.03
80	781	18	4	122	1.33	8919	97.36
81	792	21	4	108	1.18	9027	98.54
82	807	25	4	57	0.62	9084	99.16
83	832	35	4	59	0.64	9143	99.80
84	875	64	4	18	0.20	9161	100.00

Mathematics: Grade 8

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	477	64	1	0	0.00	0	0.00
1	519	35	1	0	0.00	0	0.00
2	544	25	1	0	0.00	0	0.00
3	559	21	1	0	0.00	0	0.00
4	570	18	1	1	0.01	1	0.01
5	579	17	1	0	0.00	1	0.01
6	586	15	1	0	0.00	1	0.01
7	592	14	1	0	0.00	1	0.01
8	598	13	1	0	0.00	1	0.01
9	603	13	1	0	0.00	1	0.01
10	607	12	1	0	0.00	1	0.01
11	611	12	1	0	0.00	1	0.01
12	615	11	1	1	0.01	2	0.02
13	619	11	1	5	0.05	7	0.08
14	622	11	1	5	0.05	12	0.13
15	625	11	2	11	0.12	23	0.25
16	628	10	2	10	0.11	33	0.35
17	631	10	2	17	0.18	50	0.54
18	634	10	2	22	0.24	72	0.77
19	637	10	2	36	0.39	108	1.16
20	640	10	2	34	0.36	142	1.52
21	642	9	2	38	0.41	180	1.93
22	645	9	2	71	0.76	251	2.69
23	647	9	2	55	0.59	306	3.28
24	650	9	2	75	0.80	381	4.09
25	652	9	2	75	0.80	456	4.89
26	654	9	2	85	0.91	541	5.80
27	656	9	2	84	0.90	625	6.70
28	659	9	2	85	0.91	710	7.61
29	661	9	2	113	1.21	823	8.83
30	663	9	2	116	1.24	939	10.07
31	665	9	2	123	1.32	1062	11.39
32	667	9	2	119	1.28	1181	12.66
33	669	8	2	101	1.08	1282	13.75
34	671	8	2	126	1.35	1408	15.10
35	673	8	2	106	1.14	1514	16.24
36	675	8	2	120	1.29	1634	17.52
37	677	8	2	145	1.55	1779	19.08
38	679	8	2	127	1.36	1906	20.44
39	681	8	2	121	1.30	2027	21.74
40	683	8	2	132	1.42	2159	23.15
41	685	8	2	143	1.53	2302	24.69
42	687	8	3	136	1.46	2438	26.14
43	689	8	3	165	1.77	2603	27.91

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	691	8	3	156	1.67	2759	29.59
45	693	8	3	187	2.01	2946	31.59
46	695	8	3	163	1.75	3109	33.34
47	697	8	3	179	1.92	3288	35.26
48	699	8	3	188	2.02	3476	37.28
49	701	8	3	190	2.04	3666	39.31
50	703	8	3	187	2.01	3853	41.32
51	705	8	3	183	1.96	4036	43.28
52	707	8	3	196	2.10	4232	45.38
53	709	9	3	199	2.13	4431	47.52
54	711	9	3	218	2.34	4649	49.86
55	713	9	3	199	2.13	4848	51.99
56	716	9	3	185	1.98	5033	53.97
57	718	9	3	225	2.41	5258	56.39
58	720	9	3	193	2.07	5451	58.46
59	722	9	3	211	2.26	5662	60.72
60	725	9	3	199	2.13	5861	62.85
61	727	9	3	196	2.10	6057	64.95
62	729	9	3	188	2.02	6245	66.97
63	732	9	3	179	1.92	6424	68.89
64	734	10	3	194	2.08	6618	70.97
65	737	10	3	192	2.06	6810	73.03
66	740	10	3	180	1.93	6990	74.96
67	743	10	3	208	2.23	7198	77.19
68	746	10	3	196	2.10	7394	79.29
69	749	11	3	177	1.90	7571	81.19
70	752	11	3	189	2.03	7760	83.22
71	755	11	4	191	2.05	7951	85.27
72	759	11	4	170	1.82	8121	87.09
73	763	12	4	180	1.93	8301	89.02
74	767	12	4	135	1.45	8436	90.47
75	771	13	4	150	1.61	8586	92.08
76	776	13	4	147	1.58	8733	93.65
77	782	14	4	121	1.30	8854	94.95
78	788	15	4	125	1.34	8979	96.29
79	795	17	4	100	1.07	9079	97.36
80	804	18	4	80	0.86	9159	98.22
81	815	21	4	64	0.69	9223	98.91
82	830	25	4	53	0.57	9276	99.47
83	855	35	4	32	0.34	9308	99.82
84	897	64	4	17	0.18	9325	100.00

Mathematics: Grade 11

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	492	64	1	1	0.01	1	0.01
1	535	35	1	0	0.00	1	0.01
2	560	25	1	0	0.00	1	0.01
3	575	21	1	0	0.00	1	0.01
4	586	18	1	0	0.00	1	0.01
5	595	17	1	0	0.00	1	0.01
6	602	15	1	0	0.00	1	0.01
7	608	14	1	1	0.01	2	0.02
8	614	14	1	0	0.00	2	0.02
9	619	13	1	0	0.00	2	0.02
10	624	12	1	0	0.00	2	0.02
11	628	12	1	2	0.02	4	0.05
12	632	12	1	0	0.00	4	0.05
13	635	11	1	1	0.01	5	0.06
14	639	11	1	5	0.06	10	0.12
15	642	11	1	8	0.10	18	0.22
16	645	10	2	12	0.14	30	0.36
17	648	10	2	14	0.17	44	0.53
18	651	10	2	15	0.18	59	0.71
19	654	10	2	34	0.41	93	1.12
20	657	10	2	28	0.34	121	1.46
21	659	10	2	39	0.47	160	1.93
22	662	9	2	49	0.59	209	2.52
23	664	9	2	53	0.64	262	3.15
24	667	9	2	68	0.82	330	3.97
25	669	9	2	85	1.02	415	4.99
26	672	9	2	63	0.76	478	5.75
27	674	9	2	79	0.95	557	6.70
28	676	9	2	85	1.02	642	7.73
29	678	9	2	78	0.94	720	8.67
30	680	9	2	96	1.16	816	9.82
31	683	9	2	85	1.02	901	10.84
32	685	9	2	125	1.50	1026	12.35
33	687	9	2	121	1.46	1147	13.80
34	689	8	2	110	1.32	1257	15.13
35	691	8	2	115	1.38	1372	16.51
36	693	8	2	107	1.29	1479	17.80
37	695	8	2	103	1.24	1582	19.04
38	697	8	2	127	1.53	1709	20.57
39	699	8	2	105	1.26	1814	21.83
40	701	8	2	132	1.59	1946	23.42
41	703	8	2	131	1.58	2077	25.00
42	705	8	2	140	1.68	2217	26.68
43	707	8	2	163	1.96	2380	28.64

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	709	8	2	135	1.62	2515	30.27
45	711	8	2	148	1.78	2663	32.05
46	713	8	2	156	1.88	2819	33.93
47	715	8	3	148	1.78	2967	35.71
48	717	8	3	179	2.15	3146	37.86
49	719	8	3	165	1.99	3311	39.85
50	721	8	3	153	1.84	3464	41.69
51	723	8	3	147	1.77	3611	43.46
52	725	9	3	175	2.11	3786	45.57
53	727	9	3	162	1.95	3948	47.51
54	729	9	3	156	1.88	4104	49.39
55	731	9	3	178	2.14	4282	51.53
56	733	9	3	197	2.37	4479	53.91
57	736	9	3	163	1.96	4642	55.87
58	738	9	3	169	2.03	4811	57.90
59	740	9	3	179	2.15	4990	60.06
60	743	9	3	182	2.19	5172	62.25
61	745	9	3	159	1.91	5331	64.16
62	747	9	3	187	2.25	5518	66.41
63	750	9	3	184	2.21	5702	68.62
64	752	10	3	179	2.15	5881	70.78
65	755	10	3	183	2.20	6064	72.98
66	758	10	3	178	2.14	6242	75.12
67	761	10	3	168	2.02	6410	77.15
68	764	10	3	179	2.15	6589	79.30
69	767	11	3	163	1.96	6752	81.26
70	770	11	3	157	1.89	6909	83.15
71	774	11	3	145	1.75	7054	84.90
72	777	11	3	165	1.99	7219	86.88
73	781	12	4	145	1.75	7364	88.63
74	785	12	4	148	1.78	7512	90.41
75	790	13	4	168	2.02	7680	92.43
76	795	14	4	132	1.59	7812	94.02
77	800	14	4	105	1.26	7917	95.28
78	806	15	4	110	1.32	8027	96.61
79	814	17	4	98	1.18	8125	97.79
80	822	18	4	61	0.73	8186	98.52
81	833	21	4	55	0.66	8241	99.18
82	848	25	4	37	0.45	8278	99.63
83	873	35	4	20	0.24	8298	99.87
84	916	64	4	11	0.13	8309	100.00

Science: Grade 5

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	399	64	1	0	0.00	0	0.00
1	442	35	1	0	0.00	0	0.00
2	467	25	1	0	0.00	0	0.00
3	482	21	1	0	0.00	0	0.00
4	493	18	1	0	0.00	0	0.00
5	502	17	1	0	0.00	0	0.00
6	509	15	1	0	0.00	0	0.00
7	515	14	1	0	0.00	0	0.00
8	521	14	1	1	0.01	1	0.01
9	526	13	1	1	0.01	2	0.02
10	530	12	1	3	0.03	5	0.06
11	534	12	1	3	0.03	8	0.09
12	538	12	1	2	0.02	10	0.11
13	542	11	1	3	0.03	13	0.14
14	546	11	1	6	0.07	19	0.21
15	549	11	1	3	0.03	22	0.24
16	552	10	1	10	0.11	32	0.36
17	555	10	1	13	0.14	45	0.50
18	558	10	1	17	0.19	62	0.69
19	561	10	1	37	0.41	99	1.10
20	564	10	1	35	0.39	134	1.49
21	567	10	1	36	0.40	170	1.89
22	569	10	1	53	0.59	223	2.48
23	572	9	1	65	0.72	288	3.20
24	574	9	2	74	0.82	362	4.02
25	577	9	2	76	0.84	438	4.87
26	579	9	2	76	0.84	514	5.71
27	582	9	2	100	1.11	614	6.82
28	584	9	2	102	1.13	716	7.95
29	586	9	2	96	1.07	812	9.02
30	589	9	2	111	1.23	923	10.25
31	591	9	2	117	1.30	1040	11.55
32	593	9	2	137	1.52	1177	13.07
33	596	9	2	158	1.75	1335	14.83
34	598	9	2	140	1.56	1475	16.38
35	600	9	2	150	1.67	1625	18.05
36	603	9	2	162	1.80	1787	19.85
37	605	9	3	186	2.07	1973	21.91
38	607	9	3	183	2.03	2156	23.95
39	609	9	3	210	2.33	2366	26.28
40	612	9	3	227	2.52	2593	28.80
41	614	9	3	244	2.71	2837	31.51
42	617	9	3	243	2.70	3080	34.21
43	619	9	3	222	2.47	3302	36.68

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	621	9	3	261	2.90	3563	39.58
45	624	9	3	273	3.03	3836	42.61
46	626	9	3	276	3.07	4112	45.67
47	629	9	3	338	3.75	4450	49.43
48	631	10	3	323	3.59	4773	53.02
49	634	10	3	296	3.29	5069	56.30
50	637	10	3	298	3.31	5367	59.61
51	640	10	3	310	3.44	5677	63.06
52	643	10	3	313	3.48	5990	66.53
53	646	10	3	292	3.24	6282	69.78
54	649	11	3	268	2.98	6550	72.75
55	652	11	3	323	3.59	6873	76.34
56	655	11	3	307	3.41	7180	79.75
57	659	11	3	294	3.27	7474	83.02
58	662	12	3	245	2.72	7719	85.74
59	666	12	3	252	2.80	7971	88.54
60	671	12	4	237	2.63	8208	91.17
61	675	13	4	207	2.30	8415	93.47
62	680	14	4	152	1.69	8567	95.16
63	686	14	4	124	1.38	8691	96.53
64	692	15	4	102	1.13	8793	97.67
65	699	17	4	72	0.80	8865	98.47
66	708	18	4	61	0.68	8926	99.14
67	719	21	4	46	0.51	8972	99.66
68	734	25	4	21	0.23	8993	99.89
69	759	35	4	8	0.09	9001	99.98
70	802	64	4	2	0.02	9003	100.00

Science: Grade 8

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	398	64	1	0	0.00	0	0.00
1	441	35	1	1	0.01	1	0.01
2	466	25	1	0	0.00	1	0.01
3	481	21	1	0	0.00	1	0.01
4	492	18	1	0	0.00	1	0.01
5	501	17	1	0	0.00	1	0.01
6	509	15	1	0	0.00	1	0.01
7	515	14	1	0	0.00	1	0.01
8	521	14	1	1	0.01	2	0.02
9	526	13	1	0	0.00	2	0.02
10	530	13	1	1	0.01	3	0.03
11	535	12	1	2	0.02	5	0.05
12	539	12	1	3	0.03	8	0.09
13	543	11	1	3	0.03	11	0.12
14	546	11	1	14	0.15	25	0.27
15	550	11	1	12	0.13	37	0.40
16	553	11	1	24	0.26	61	0.66
17	556	10	1	25	0.27	86	0.92
18	559	10	1	31	0.33	117	1.26
19	562	10	1	46	0.49	163	1.75
20	565	10	1	51	0.55	214	2.30
21	568	10	1	63	0.68	277	2.98
22	570	10	2	66	0.71	343	3.69
23	573	10	2	79	0.85	422	4.53
24	576	9	2	89	0.96	511	5.49
25	578	9	2	79	0.85	590	6.34
26	581	9	2	128	1.38	718	7.72
27	583	9	2	95	1.02	813	8.74
28	586	9	2	101	1.09	914	9.82
29	588	9	2	135	1.45	1049	11.27
30	590	9	2	140	1.50	1189	12.78
31	593	9	2	139	1.49	1328	14.27
32	595	9	2	144	1.55	1472	15.82
33	597	9	2	160	1.72	1632	17.54
34	600	9	2	191	2.05	1823	19.59
35	602	9	2	160	1.72	1983	21.31
36	604	9	2	170	1.83	2153	23.14
37	607	9	2	191	2.05	2344	25.19
38	609	9	2	212	2.28	2556	27.47
39	611	9	3	232	2.49	2788	29.96
40	614	9	3	197	2.12	2985	32.08
41	616	9	3	231	2.48	3216	34.56
42	618	9	3	237	2.55	3453	37.11
43	621	9	3	237	2.55	3690	39.65

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	623	9	3	245	2.63	3935	42.28
45	626	9	3	247	2.65	4182	44.94
46	628	9	3	285	3.06	4467	48.00
47	631	9	3	282	3.03	4749	51.03
48	633	10	3	255	2.74	5004	53.77
49	636	10	3	267	2.87	5271	56.64
50	639	10	3	291	3.13	5562	59.77
51	642	10	3	293	3.15	5855	62.92
52	644	10	3	283	3.04	6138	65.96
53	647	10	3	291	3.13	6429	69.08
54	650	10	3	281	3.02	6710	72.10
55	654	11	3	295	3.17	7005	75.27
56	657	11	3	313	3.36	7318	78.64
57	661	11	3	263	2.83	7581	81.46
58	664	12	3	261	2.80	7842	84.27
59	668	12	3	264	2.84	8106	87.11
60	672	12	3	224	2.41	8330	89.51
61	677	13	4	208	2.24	8538	91.75
62	682	14	4	178	1.91	8716	93.66
63	687	14	4	174	1.87	8890	95.53
64	694	15	4	136	1.46	9026	96.99
65	701	17	4	98	1.05	9124	98.04
66	710	18	4	69	0.74	9193	98.79
67	720	21	4	58	0.62	9251	99.41
68	735	25	4	37	0.40	9288	99.81
69	761	35	4	14	0.15	9302	99.96
70	803	64	4	4	0.04	9306	100.00

Science: Grade 11

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
0	394	64	1	0	0.00	0	0.00
1	437	36	1	1	0.01	1	0.01
2	462	25	1	0	0.00	1	0.01
3	477	21	1	0	0.00	1	0.01
4	488	18	1	0	0.00	1	0.01
5	497	17	1	0	0.00	1	0.01
6	504	15	1	0	0.00	1	0.01
7	510	14	1	0	0.00	1	0.01
8	516	13	1	1	0.01	2	0.02
9	520	13	1	2	0.02	4	0.05
10	525	12	1	1	0.01	5	0.06
11	529	12	1	0	0.00	5	0.06
12	533	11	1	1	0.01	6	0.07
13	537	11	1	2	0.02	8	0.10
14	540	11	1	4	0.05	12	0.14
15	543	10	1	9	0.11	21	0.25
16	546	10	1	5	0.06	26	0.31
17	549	10	1	8	0.10	34	0.41
18	552	10	1	14	0.17	48	0.58
19	555	10	1	15	0.18	63	0.76
20	557	9	1	21	0.25	84	1.01
21	560	9	1	30	0.36	114	1.37
22	562	9	1	38	0.46	152	1.83
23	565	9	1	39	0.47	191	2.30
24	567	9	2	57	0.69	248	2.98
25	569	9	2	62	0.75	310	3.73
26	571	9	2	67	0.81	377	4.54
27	573	9	2	77	0.93	454	5.46
28	576	9	2	82	0.99	536	6.45
29	578	9	2	82	0.99	618	7.44
30	580	8	2	101	1.22	719	8.65
31	582	8	2	95	1.14	814	9.80
32	584	8	2	86	1.03	900	10.83
33	586	8	2	94	1.13	994	11.96
34	588	8	2	109	1.31	1103	13.27
35	590	8	2	101	1.22	1204	14.49
36	592	8	2	120	1.44	1324	15.93
37	593	8	2	100	1.20	1424	17.14
38	595	8	2	116	1.40	1540	18.53
39	597	8	2	122	1.47	1662	20.00
40	599	8	2	107	1.29	1769	21.29
41	601	8	2	159	1.91	1928	23.20
42	603	8	2	121	1.46	2049	24.66
43	605	8	2	145	1.74	2194	26.40

Raw Score	Scale Score	Standard Error	Performance Level	Frequency	Percent	Cumulative Frequency	Cumulative Percent
44	607	8	2	145	1.74	2339	28.15
45	609	8	2	150	1.81	2489	29.95
46	610	8	3	148	1.78	2637	31.73
47	612	8	3	184	2.21	2821	33.95
48	614	8	3	183	2.20	3004	36.15
49	616	8	3	177	2.13	3181	38.28
50	618	8	3	166	2.00	3347	40.28
51	620	8	3	175	2.11	3522	42.38
52	622	8	3	203	2.44	3725	44.83
53	624	8	3	207	2.49	3932	47.32
54	626	8	3	207	2.49	4139	49.81
55	628	8	3	227	2.73	4366	52.54
56	630	9	3	212	2.55	4578	55.09
57	632	9	3	223	2.68	4801	57.77
58	634	9	3	187	2.25	4988	60.02
59	636	9	3	218	2.62	5206	62.65
60	639	9	3	225	2.71	5431	65.35
61	641	9	3	209	2.52	5640	67.87
62	643	9	3	222	2.67	5862	70.54
63	646	9	3	206	2.48	6068	73.02
64	648	9	3	202	2.43	6270	75.45
65	651	9	3	182	2.19	6452	77.64
66	653	10	3	202	2.43	6654	80.07
67	656	10	3	169	2.03	6823	82.11
68	659	10	3	217	2.61	7040	84.72
69	662	10	3	166	2.00	7206	86.71
70	665	11	3	170	2.05	7376	88.76
71	668	11	3	165	1.99	7541	90.75
72	672	11	4	124	1.49	7665	92.24
73	675	12	4	130	1.56	7795	93.80
74	679	12	4	97	1.17	7892	94.97
75	684	13	4	95	1.14	7987	96.11
76	689	13	4	92	1.11	8079	97.22
77	694	14	4	74	0.89	8153	98.11
78	700	15	4	56	0.67	8209	98.78
79	707	16	4	40	0.48	8249	99.27
80	715	18	4	28	0.34	8277	99.60
81	726	21	4	20	0.24	8297	99.84
82	741	25	4	8	0.10	8305	99.94
83	766	35	4	4	0.05	8309	99.99
84	808	64	4	1	0.01	8310	100.00

APPENDIX H: Scaled Rasch Item Difficulty Parameter Summary

Scaled Rasch Item Difficulty Parameter Summary

	Grade		Below Basic	Basic	Proficient	Advanced
Reading	3*	No. of Items	0	18	36	2
		%	0.00	32.14	64.29	3.57
	4	No. of Items	0	13	40	3
		%	0.00	23.21	71.43	5.36
	5	No. of Items	0	19	35	2
		%	0.00	33.93	62.50	3.57
	6	No. of Items	0	28	24	4
		%	0.00	50.00	42.86	7.14
	7*	No. of Items	0	21	35	0
		%	0.00	37.50	62.50	0.00
	8*	No. of Items	1	26	28	1
		%	1.79	46.43	50.00	1.79
	11*	No. of Items	0	31	9	0
		%	0.00	77.50	22.50	0.00
Mathematics	3	No. of Items	4	52	28	0
		%	4.76	61.90	33.33	0.00
	4	No. of Items	1	46	37	0
		%	1.19	54.76	44.05	0.00
	5	No. of Items	5	35	44	0
		%	5.95	41.67	52.38	0.00
	6	No. of Items	4	45	34	1
		%	4.76	53.57	40.48	1.19
	7	No. of Items	8	50	26	0
		%	9.52	59.52	30.95	0.00
	8	No. of Items	1	42	41	0
		%	1.19	50.00	48.81	0.00
	11	No. of Items	3	52	29	0
		%	3.57	61.90	34.52	0.00
Science	5	No. of Items	15	25	30	0
		%	21.43	35.71	42.86	0.00
	8	No. of Items	9	36	25	0
		%	12.86	51.43	35.71	0.00
	11	No. of Items	7	41	36	0
		%	8.33	48.81	42.86	0.00

* Data file 05/29/07
Data file 05/19/08

APPENDIX I: Item Statistics

Data file 07/30/08 public schools only.

Grade 3 Reading and Mathematics Item Statistics

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.91	0.174	1	0.71	0.431
2	0.94	0.307	2	0.95	0.233
3	0.86	0.357	3	0.87	0.247
4	0.87	0.370	4	0.61	0.414
5	0.70	0.481	5	0.55	0.365
6	0.48	0.426	6	0.67	0.498
7	0.64	0.412	7	0.87	0.417
8	0.42	0.257	8	0.81	0.430
9	0.60	0.382	9	0.84	0.298
10	0.80	0.400	10	0.92	0.345
11	0.94	0.341	11	0.64	0.372
12	0.91	0.298	12	0.83	0.516
13	0.65	0.323	13	0.55	0.349
14	0.52	0.406	14	0.44	0.398
15	0.84	0.321	15	0.85	0.433
16	0.89	0.301	16	0.92	0.387
17	0.73	0.343	17	0.73	0.335
18	0.66	0.392	18	0.66	0.507
19	0.80	0.550	19	0.47	0.397
20	0.69	0.359	20	0.77	0.435
21	0.61	0.307	21	0.65	0.377
22	0.70	0.176	22	0.62	0.464
23	0.59	0.326	23	0.88	0.441
24	0.51	0.406	24	0.85	0.481
25	0.86	0.371	25	0.75	0.315
26	0.69	0.460	26	0.87	0.479
27	0.42	0.215	27	0.51	0.447
28	0.54	0.406	28	0.91	0.416
29	0.42	0.279	29	0.86	0.328
30	0.43	0.458	30	0.87	0.407
31	0.79	0.520	31	0.95	0.310
32	0.47	0.430	32	0.67	0.513
33	0.65	0.457	33	0.87	0.371
34	0.76	0.443	34	0.84	0.511
35	0.40	0.321	35	0.89	0.427
36	0.29	0.213	36	0.59	0.458
37	0.48	0.279	37	0.76	0.534
38	0.54	0.399	38	0.86	0.465
39	0.81	0.374	39	0.71	0.337
40	0.76	0.540	40	0.62	0.468
41	0.69	0.510	41	0.81	0.535
42	0.79	0.494	42	0.61	0.407
43	0.72	0.425	43	0.90	0.361

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.59	0.353	44	0.86	0.460
45	0.64	0.469	45	0.84	0.344
46	0.53	0.475	46	0.52	0.375
47	0.52	0.375	47	0.77	0.399
48	0.35	0.285	48	0.79	0.472
49	0.64	0.446	49	0.93	0.446
50	0.74	0.462	50	0.71	0.481
51	0.63	0.240	51	0.50	0.381
52	0.58	0.439	52	0.85	0.518
53	0.48	0.350	53	0.76	0.388
54	0.49	0.350	54	0.74	0.370
55	0.73	0.478	55	0.62	0.346
56	0.65	0.461	56	0.73	0.481
			57	0.73	0.437
			58	0.95	0.389
			59	0.80	0.489
			60	0.84	0.486
			61	0.83	0.406
			62	0.81	0.541
			63	0.71	0.325
			64	0.76	0.470
			65	0.71	0.519
			66	0.57	0.394
			67	0.64	0.329
			68	0.58	0.499
			69	0.83	0.518
			70	0.81	0.323
			71	0.63	0.429
			72	0.75	0.342
			73	0.86	0.379
			74	0.76	0.257
			75	0.66	0.452
			76	0.87	0.469
			77	0.77	0.541
			78	0.63	0.522
			79	0.79	0.329
			80	0.56	0.468
			81	0.51	0.453
			82	0.42	0.462
			83	0.86	0.319
			84	0.85	0.386

Grade 4 Reading and Mathematics Item Statistics

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.87	0.350	1	0.80	0.508
2	0.94	0.266	2	0.94	0.208
3	0.81	0.439	3	0.55	0.317
4	0.72	0.459	4	0.78	0.439
5	0.60	0.442	5	0.86	0.418
6	0.82	0.385	6	0.36	0.394
7	0.67	0.207	7	0.83	0.402
8	0.67	0.413	8	0.78	0.468
9	0.55	0.427	9	0.42	0.313
10	0.60	0.205	10	0.90	0.339
11	0.88	0.462	11	0.59	0.360
12	0.44	0.257	12	0.54	0.477
13	0.54	0.462	13	0.72	0.333
14	0.45	0.401	14	0.43	0.341
15	0.61	0.521	15	0.56	0.418
16	0.61	0.398	16	0.66	0.445
17	0.85	0.334	17	0.47	0.431
18	0.69	0.279	18	0.65	0.285
19	0.61	0.409	19	0.71	0.418
20	0.85	0.478	20	0.78	0.466
21	0.75	0.390	21	0.89	0.448
22	0.70	0.466	22	0.77	0.484
23	0.96	0.211	23	0.80	0.506
24	0.71	0.385	24	0.63	0.471
25	0.39	0.270	25	0.76	0.335
26	0.81	0.410	26	0.45	0.356
27	0.46	0.408	27	0.74	0.566
28	0.79	0.504	28	0.86	0.309
29	0.84	0.503	29	0.75	0.378
30	0.66	0.531	30	0.71	0.395
31	0.76	0.450	31	0.49	0.247
32	0.70	0.317	32	0.68	0.368
33	0.60	0.437	33	0.45	0.319
34	0.79	0.402	34	0.49	0.353
35	0.55	0.231	35	0.85	0.374
36	0.55	0.322	36	0.69	0.386
37	0.73	0.390	37	0.67	0.394
38	0.71	0.383	38	0.78	0.380
39	0.56	0.480	39	0.57	0.406
40	0.70	0.300	40	0.65	0.503
41	0.70	0.489	41	0.67	0.545
42	0.29	0.191	42	0.75	0.536
43	0.49	0.415	43	0.64	0.462

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.53	0.353	44	0.41	0.329
45	0.70	0.469	45	0.77	0.466
46	0.64	0.401	46	0.45	0.362
47	0.56	0.279	47	0.73	0.290
48	0.63	0.492	48	0.66	0.390
49	0.56	0.341	49	0.85	0.451
50	0.54	0.472	50	0.68	0.453
51	0.49	0.337	51	0.36	0.203
52	0.36	0.229	52	0.62	0.485
53	0.58	0.371	53	0.74	0.459
54	0.82	0.532	54	0.74	0.438
55	0.52	0.282	55	0.79	0.449
56	0.91	0.375	56	0.73	0.399
			57	0.70	0.499
			58	0.57	0.401
			59	0.60	0.403
			60	0.75	0.449
			61	0.88	0.306
			62	0.65	0.341
			63	0.85	0.409
			64	0.80	0.279
			65	0.55	0.477
			66	0.62	0.419
			67	0.41	0.363
			68	0.83	0.486
			69	0.61	0.377
			70	0.76	0.368
			71	0.86	0.465
			72	0.71	0.370
			73	0.54	0.437
			74	0.70	0.495
			75	0.79	0.492
			76	0.69	0.521
			77	0.82	0.470
			78	0.59	0.289
			79	0.50	0.531
			80	0.85	0.468
			81	0.37	0.468
			82	0.60	0.498
			83	0.76	0.353
			84	0.67	0.397

Grade 5 Reading, Mathematics, and Science Item Statistics

Reading			Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.75	0.387	1	0.95	0.312	1	0.78	0.475
2	0.80	0.329	2	0.76	0.339	2	0.81	0.372
3	0.92	0.376	3	0.84	0.351	3	0.82	0.315
4	0.56	0.383	4	0.92	0.339	4	0.91	0.339
5	0.73	0.446	5	0.50	0.359	5	0.75	0.251
6	0.65	0.386	6	0.91	0.329	6	0.79	0.311
7	0.81	0.320	7	0.70	0.372	7	0.70	0.444
8	0.81	0.365	8	0.67	0.464	8	0.68	0.444
9	0.72	0.310	9	0.41	0.263	9	0.77	0.335
10	0.65	0.503	10	0.61	0.181	10	0.74	0.409
11	0.25	0.149	11	0.42	0.248	11	0.76	0.340
12	0.68	0.255	12	0.77	0.429	12	0.73	0.357
13	0.70	0.453	13	0.58	0.488	13	0.75	0.367
14	0.64	0.394	14	0.80	0.240	14	0.68	0.366
15	0.46	0.336	15	0.39	0.317	15	0.43	0.308
16	0.63	0.368	16	0.50	0.366	16	0.62	0.318
17	0.60	0.437	17	0.52	0.427	17	0.84	0.472
18	0.49	0.367	18	0.62	0.435	18	0.49	0.411
19	0.58	0.295	19	0.44	0.271	19	0.37	0.299
20	0.83	0.461	20	0.74	0.514	20	0.51	0.420
21	0.77	0.532	21	0.69	0.410	21	0.34	0.274
22	0.51	0.253	22	0.77	0.357	22	0.52	0.449
23	0.51	0.420	23	0.56	0.398	23	0.50	0.227
24	0.38	0.389	24	0.63	0.523	24	0.56	0.287
25	0.76	0.453	25	0.86	0.380	25	0.84	0.402
26	0.60	0.292	26	0.64	0.462	26	0.85	0.407
27	0.47	0.240	27	0.75	0.425	27	0.71	0.441
28	0.63	0.170	28	0.78	0.331	28	0.76	0.273
29	0.43	0.328	29	0.85	0.432	29	0.83	0.298
30	0.63	0.329	30	0.38	0.432	30	0.78	0.401
31	0.63	0.412	31	0.71	0.413	31	0.82	0.311
32	0.54	0.327	32	0.78	0.297	32	0.73	0.471
33	0.60	0.376	33	0.89	0.352	33	0.73	0.476
34	0.75	0.343	34	0.79	0.424	34	0.74	0.468
35	0.68	0.469	35	0.89	0.479	35	0.71	0.447
36	0.82	0.409	36	0.74	0.311	36	0.74	0.432
37	0.64	0.348	37	0.65	0.435	37	0.67	0.501
38	0.77	0.415	38	0.49	0.425	38	0.60	0.390
39	0.63	0.262	39	0.42	0.298	39	0.41	0.283
40	0.82	0.491	40	0.44	0.326	40	0.31	0.207
41	0.84	0.439	41	0.34	0.339	41	0.36	0.124
42	0.61	0.447	42	0.62	0.406	42	0.53	0.282
43	0.67	0.448	43	0.46	0.207	43	0.55	0.476

Reading			Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.59	0.368	44	0.55	0.447	44	0.64	0.329
45	0.64	0.418	45	0.75	0.463	45	0.56	0.301
46	0.76	0.421	46	0.62	0.468	46	0.56	0.378
47	0.60	0.357	47	0.59	0.477	47	0.58	0.282
48	0.64	0.382	48	0.48	0.280	48	0.91	0.254
49	0.65	0.318	49	0.77	0.475	49	0.90	0.278
50	0.68	0.327	50	0.86	0.463	50	0.82	0.303
51	0.68	0.396	51	0.56	0.435	51	0.86	0.374
52	0.51	0.341	52	0.65	0.571	52	0.80	0.287
53	0.34	0.280	53	0.74	0.341	53	0.82	0.548
54	0.60	0.355	54	0.44	0.396	54	0.73	0.387
55	0.83	0.441	55	0.65	0.398	55	0.60	0.518
56	0.64	0.456	56	0.59	0.444	56	0.71	0.413
			57	0.52	0.508	57	0.78	0.470
			58	0.79	0.437	58	0.55	0.100
			59	0.81	0.229	59	0.58	0.425
			60	0.85	0.448	60	0.69	0.293
			61	0.48	0.365	61	0.44	0.428
			62	0.87	0.343	62	0.71	0.352
			63	0.66	0.439	63	0.53	0.351
			64	0.74	0.163	64	0.62	0.295
			65	0.50	0.446	65	0.40	0.227
			66	0.58	0.460	66	0.64	0.356
			67	0.52	0.474	67	0.59	0.368
			68	0.84	0.469	68	0.58	0.411
			69	0.87	0.398	69	0.83	0.440
			70	0.65	0.472	70	0.44	0.372
			71	0.60	0.411			
			72	0.63	0.387			
			73	0.62	0.422			
			74	0.80	0.350			
			75	0.65	0.492			
			76	0.81	0.455			
			77	0.83	0.439			
			78	0.68	0.510			
			79	0.71	0.393			
			80	0.47	0.574			
			81	0.57	0.480			
			82	0.69	0.464			
			83	0.56	0.371			
			84	0.65	0.471			

Grade 6 Reading and Mathematics Item Statistics

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.63	0.263	1	0.82	0.342
2	0.82	0.489	2	0.77	0.511
3	0.74	0.401	3	0.94	0.285
4	0.55	0.373	4	0.63	0.389
5	0.64	0.513	5	0.71	0.398
6	0.70	0.425	6	0.67	0.439
7	0.86	0.404	7	0.42	0.249
8	0.77	0.367	8	0.76	0.437
9	0.16	0.059	9	0.52	0.351
10	0.58	0.361	10	0.33	0.263
11	0.86	0.364	11	0.77	0.489
12	0.36	0.270	12	0.74	0.346
13	0.83	0.389	13	0.43	0.340
14	0.78	0.530	14	0.69	0.467
15	0.81	0.466	15	0.66	0.390
16	0.50	0.422	16	0.55	0.335
17	0.83	0.488	17	0.28	0.396
18	0.84	0.450	18	0.83	0.322
19	0.71	0.454	19	0.55	0.518
20	0.70	0.454	20	0.59	0.381
21	0.79	0.419	21	0.40	0.308
22	0.41	0.350	22	0.48	0.480
23	0.75	0.429	23	0.75	0.431
24	0.84	0.483	24	0.68	0.413
25	0.67	0.485	25	0.71	0.318
26	0.78	0.537	26	0.89	0.332
27	0.42	0.281	27	0.89	0.479
28	0.41	0.371	28	0.66	0.420
29	0.75	0.463	29	0.88	0.444
30	0.60	0.435	30	0.44	0.258
31	0.30	0.254	31	0.60	0.060
32	0.59	0.402	32	0.47	0.376
33	0.53	0.276	33	0.83	0.464
34	0.84	0.471	34	0.71	0.293
35	0.82	0.299	35	0.78	0.377
36	0.43	0.206	36	0.71	0.490
37	0.57	0.371	37	0.88	0.496
38	0.68	0.480	38	0.91	0.426
39	0.45	0.326	39	0.74	0.513
40	0.42	0.334	40	0.89	0.296
41	0.83	0.448	41	0.74	0.419
42	0.75	0.319	42	0.74	0.416
43	0.47	0.350	43	0.75	0.548

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.43	0.209	44	0.83	0.484
45	0.73	0.488	45	0.87	0.489
46	0.47	0.208	46	0.69	0.486
47	0.70	0.380	47	0.69	0.464
48	0.92	0.389	48	0.64	0.544
49	0.83	0.476	49	0.82	0.432
50	0.83	0.550	50	0.85	0.436
51	0.67	0.481	51	0.83	0.455
52	0.84	0.596	52	0.90	0.419
53	0.84	0.502	53	0.58	0.360
54	0.77	0.440	54	0.30	0.342
55	0.50	0.405	55	0.89	0.327
56	0.85	0.545	56	0.44	0.489
			57	0.61	0.420
			58	0.82	0.380
			59	0.46	0.470
			60	0.57	0.468
			61	0.69	0.327
			62	0.73	0.447
			63	0.59	0.301
			64	0.49	0.382
			65	0.58	0.348
			66	0.70	0.501
			67	0.82	0.411
			68	0.87	0.393
			69	0.90	0.408
			70	0.92	0.418
			71	0.52	0.323
			72	0.63	0.372
			73	0.59	0.417
			74	0.67	0.453
			75	0.48	0.448
			76	0.64	0.399
			77	0.83	0.412
			78	0.53	0.510
			79	0.54	0.556
			80	0.62	0.495
			81	0.78	0.420
			82	0.85	0.488
			83	0.84	0.307
			84	0.63	0.386

Grade 7 Reading and Mathematics Item Statistics

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.91	0.358	1	0.77	0.357
2	0.58	0.400	2	0.65	0.414
3	0.59	0.436	3	0.73	0.237
4	0.70	0.368	4	0.68	0.547
5	0.67	0.334	5	0.36	0.219
6	0.80	0.428	6	0.88	0.392
7	0.56	0.301	7	0.88	0.204
8	0.56	0.287	8	0.47	0.329
9	0.56	0.376	9	0.67	0.431
10	0.72	0.423	10	0.72	0.377
11	0.51	0.341	11	0.46	0.540
12	0.57	0.350	12	0.45	0.392
13	0.47	0.267	13	0.84	0.425
14	0.69	0.456	14	0.69	0.385
15	0.80	0.479	15	0.64	0.417
16	0.55	0.447	16	0.70	0.262
17	0.71	0.362	17	0.88	0.456
18	0.36	0.219	18	0.81	0.482
19	0.52	0.410	19	0.66	0.359
20	0.47	0.362	20	0.73	0.509
21	0.67	0.444	21	0.59	0.388
22	0.62	0.533	22	0.65	0.439
23	0.80	0.403	23	0.90	0.412
24	0.77	0.532	24	0.72	0.467
25	0.81	0.443	25	0.74	0.503
26	0.72	0.474	26	0.90	0.432
27	0.71	0.504	27	0.79	0.348
28	0.61	0.503	28	0.78	0.452
29	0.49	0.382	29	0.82	0.390
30	0.57	0.252	30	0.92	0.374
31	0.46	0.316	31	0.54	0.467
32	0.57	0.479	32	0.65	0.525
33	0.91	0.395	33	0.89	0.333
34	0.80	0.501	34	0.71	0.325
35	0.45	0.235	35	0.84	0.472
36	0.80	0.442	36	0.60	0.483
37	0.57	0.424	37	0.76	0.419
38	0.87	0.436	38	0.38	0.376
39	0.54	0.379	39	0.58	0.406
40	0.71	0.300	40	0.80	0.484
41	0.46	0.286	41	0.60	0.485
42	0.50	0.318	42	0.79	0.272
43	0.48	0.317	43	0.91	0.425

Reading			Mathematics		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.60	0.362	44	0.90	0.317
45	0.84	0.409	45	0.66	0.584
46	0.63	0.346	46	0.58	0.412
47	0.80	0.431	47	0.87	0.496
48	0.43	0.258	48	0.78	0.365
49	0.57	0.333	49	0.67	0.434
50	0.45	0.323	50	0.62	0.524
51	0.67	0.472	51	0.41	0.298
52	0.54	0.399	52	0.56	0.466
53	0.89	0.306	53	0.37	0.307
54	0.68	0.480	54	0.83	0.429
55	0.72	0.297	55	0.78	0.525
56	0.89	0.345	56	0.79	0.614
			57	0.47	0.289
			58	0.52	0.482
			59	0.63	0.412
			60	0.70	0.412
			61	0.54	0.476
			62	0.75	0.446
			63	0.62	0.594
			64	0.43	0.225
			65	0.57	0.463
			66	0.74	0.606
			67	0.63	0.460
			68	0.69	0.469
			69	0.82	0.427
			70	0.55	0.558
			71	0.90	0.417
			72	0.79	0.454
			73	0.58	0.488
			74	0.67	0.453
			75	0.64	0.400
			76	0.85	0.492
			77	0.78	0.574
			78	0.78	0.580
			79	0.76	0.509
			80	0.71	0.512
			81	0.88	0.458
			82	0.76	0.575
			83	0.52	0.378
			84	0.50	0.347

Grade 8 Reading, Mathematics, and Science Item Statistics

Reading			Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.96	0.187	1	0.31	0.329	1	0.94	0.348
2	0.54	0.231	2	0.57	0.263	2	0.90	0.401
3	0.79	0.219	3	0.75	0.373	3	0.80	0.361
4	0.49	0.100	4	0.59	0.530	4	0.83	0.329
5	0.29	0.163	5	0.77	0.480	5	0.89	0.467
6	0.64	0.354	6	0.66	0.401	6	0.83	0.361
7	0.70	0.481	7	0.85	0.476	7	0.78	0.355
8	0.50	0.386	8	0.89	0.398	8	0.78	0.421
9	0.33	0.302	9	0.84	0.416	9	0.83	0.307
10	0.36	0.235	10	0.62	0.536	10	0.84	0.457
11	0.66	0.295	11	0.88	0.333	11	0.61	0.407
12	0.45	0.280	12	0.73	0.426	12	0.67	0.334
13	0.80	0.383	13	0.62	0.496	13	0.75	0.420
14	0.61	0.349	14	0.78	0.446	14	0.71	0.296
15	0.62	0.415	15	0.66	0.483	15	0.57	0.296
16	0.52	0.230	16	0.74	0.443	16	0.59	0.436
17	0.64	0.364	17	0.66	0.226	17	0.71	0.452
18	0.53	0.434	18	0.72	0.458	18	0.66	0.508
19	0.53	0.182	19	0.72	0.371	19	0.69	0.388
20	0.76	0.379	20	0.54	0.347	20	0.46	0.414
21	0.48	0.304	21	0.74	0.589	21	0.42	0.415
22	0.66	0.338	22	0.73	0.309	22	0.42	0.290
23	0.81	0.442	23	0.52	0.517	23	0.63	0.471
24	0.82	0.336	24	0.40	0.361	24	0.48	0.297
25	0.78	0.510	25	0.65	0.560	25	0.86	0.402
26	0.73	0.357	26	0.84	0.389	26	0.80	0.272
27	0.76	0.505	27	0.41	0.316	27	0.73	0.414
28	0.59	0.475	28	0.89	0.447	28	0.81	0.435
29	0.67	0.292	29	0.69	0.411	29	0.75	0.338
30	0.52	0.281	30	0.62	0.376	30	0.81	0.291
31	0.59	0.355	31	0.91	0.321	31	0.73	0.446
32	0.65	0.405	32	0.87	0.427	32	0.82	0.467
33	0.65	0.431	33	0.40	0.339	33	0.53	0.443
34	0.67	0.363	34	0.70	0.539	34	0.69	0.518
35	0.51	0.494	35	0.64	0.509	35	0.64	0.329
36	0.73	0.482	36	0.64	0.447	36	0.65	0.417
37	0.54	0.446	37	0.58	0.341	37	0.67	0.453
38	0.69	0.302	38	0.42	0.390	38	0.56	0.344
39	0.64	0.537	39	0.85	0.380	39	0.44	0.539
40	0.72	0.542	40	0.66	0.391	40	0.67	0.525
41	0.54	0.362	41	0.76	0.500	41	0.44	0.374
42	0.74	0.453	42	0.48	0.374	42	0.49	0.364
43	0.65	0.397	43	0.82	0.518	43	0.36	0.240

Reading			Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.40	0.392	44	0.89	0.349	44	0.54	0.384
45	0.38	0.225	45	0.51	0.554	45	0.40	0.287
46	0.49	0.146	46	0.48	0.382	46	0.67	0.260
47	0.68	0.462	47	0.40	0.358	47	0.50	0.399
48	0.76	0.397	48	0.54	0.293	48	0.54	0.376
49	0.74	0.481	49	0.65	0.467	49	0.65	0.419
50	0.64	0.385	50	0.89	0.378	50	0.43	0.325
51	0.68	0.391	51	0.54	0.448	51	0.79	0.385
52	0.86	0.432	52	0.60	0.462	52	0.91	0.335
53	0.55	0.251	53	0.67	0.580	53	0.87	0.440
54	0.73	0.434	54	0.31	0.121	54	0.66	0.476
55	0.74	0.447	55	0.54	0.414	55	0.74	0.485
56	0.42	0.107	56	0.29	0.290	56	0.64	0.479
			57	0.73	0.504	57	0.52	0.376
			58	0.55	0.464	58	0.73	0.471
			59	0.72	0.383	59	0.78	0.441
			60	0.62	0.377	60	0.67	0.464
			61	0.84	0.387	61	0.64	0.408
			62	0.33	0.307	62	0.65	0.360
			63	0.59	0.509	63	0.53	0.327
			64	0.42	0.342	64	0.82	0.311
			65	0.78	0.490	65	0.44	0.285
			66	0.76	0.329	66	0.42	0.262
			67	0.69	0.441	67	0.54	0.435
			68	0.50	0.360	68	0.49	0.246
			69	0.63	0.416	69	0.55	0.326
			70	0.73	0.420	70	0.49	0.334
			71	0.46	0.521			
			72	0.56	0.524			
			73	0.61	0.466			
			74	0.72	0.415			
			75	0.78	0.533			
			76	0.41	0.305			
			77	0.46	0.540			
			78	0.79	0.495			
			79	0.33	0.408			
			80	0.60	0.523			
			81	0.66	0.499			
			82	0.52	0.516			
			83	0.54	0.408			
			84	0.68	0.455			

Grade 11 Reading, Mathematics, and Science Item Statistics

Reading			Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
1	0.87	0.416	1	0.69	0.404	1	0.96	0.213
2	0.77	0.304	2	0.84	0.421	2	0.89	0.364
3	0.77	0.363	3	0.43	0.317	3	0.83	0.368
4	0.41	0.425	4	0.58	0.369	4	0.80	0.415
5	0.85	0.335	5	0.60	0.604	5	0.71	0.384
6	0.62	0.349	6	0.58	0.408	6	0.77	0.466
7	0.69	0.468	7	0.75	0.506	7	0.78	0.483
8	0.79	0.448	8	0.50	0.369	8	0.78	0.261
9	0.62	0.456	9	0.65	0.359	9	0.83	0.513
10	0.44	0.226	10	0.85	0.332	10	0.70	0.272
11	0.90	0.369	11	0.69	0.419	11	0.83	0.452
12	0.60	0.311	12	0.64	0.524	12	0.79	0.399
13	0.73	0.345	13	0.47	0.400	13	0.61	0.366
14	0.60	0.394	14	0.87	0.420	14	0.69	0.418
15	0.88	0.410	15	0.90	0.364	15	0.67	0.381
16	0.72	0.362	16	0.77	0.522	16	0.69	0.360
17	0.74	0.449	17	0.53	0.285	17	0.67	0.341
18	0.61	0.335	18	0.79	0.450	18	0.69	0.430
19	0.80	0.358	19	0.71	0.422	19	0.69	0.499
20	0.66	0.334	20	0.74	0.423	20	0.57	0.391
21	0.88	0.470	21	0.91	0.417	21	0.65	0.282
22	0.29	0.413	22	0.68	0.621	22	0.66	0.452
23	0.68	0.402	23	0.65	0.489	23	0.56	0.430
24	0.87	0.426	24	0.61	0.497	24	0.67	0.251
25	0.90	0.283	25	0.56	0.484	25	0.46	0.387
26	0.53	0.480	26	0.82	0.523	26	0.52	0.395
27	0.75	0.499	27	0.50	0.347	27	0.53	0.251
28	0.26	0.287	28	0.81	0.354	28	0.44	0.336
29	0.49	0.386	29	0.50	0.315	29	0.89	0.318
30	0.45	0.250	30	0.63	0.520	30	0.79	0.395
31	0.90	0.405	31	0.81	0.363	31	0.66	0.332
32	0.74	0.470	32	0.56	0.374	32	0.75	0.496
33	0.55	0.486	33	0.49	0.358	33	0.57	0.339
34	0.85	0.515	34	0.72	0.494	34	0.64	0.330
35	0.52	0.297	35	0.63	0.573	35	0.62	0.355
36	0.62	0.476	36	0.73	0.544	36	0.61	0.345
37	0.73	0.510	37	0.67	0.477	37	0.57	0.320
38	0.53	0.408	38	0.70	0.475	38	0.70	0.397
39	0.61	0.378	39	0.42	0.265	39	0.65	0.402
40	0.87	0.486	40	0.44	0.331	40	0.65	0.351
			41	0.78	0.415	41	0.60	0.279
			42	0.49	0.375	42	0.60	0.482
			43	0.62	0.465	43	0.51	0.380

Mathematics			Science		
Item Number	***P*-value**	**Point-Biserial**	**Item Number**	***P*-value**	**Point-Biserial**
44	0.42	0.580	44	0.43	0.207
45	0.38	0.448	45	0.56	0.473
46	0.75	0.578	46	0.48	0.107
47	0.85	0.410	47	0.45	0.357
48	0.63	0.540	48	0.48	0.477
49	0.57	0.361	49	0.47	0.324
50	0.45	0.341	50	0.36	0.251
51	0.86	0.452	51	0.37	0.183
52	0.48	0.449	52	0.53	0.367
53	0.60	0.264	53	0.50	0.488
54	0.71	0.515	54	0.52	0.318
55	0.63	0.587	55	0.46	0.441
56	0.80	0.438	56	0.40	0.300
57	0.39	0.369	57	0.80	0.408
58	0.47	0.360	58	0.81	0.357
59	0.60	0.485	59	0.76	0.398
60	0.49	0.366	60	0.76	0.465
61	0.60	0.262	61	0.78	0.520
62	0.45	0.568	62	0.83	0.470
63	0.95	0.350	63	0.78	0.416
64	0.85	0.384	64	0.77	0.279
65	0.89	0.348	65	0.74	0.479
66	0.25	0.412	66	0.80	0.552
67	0.82	0.416	67	0.72	0.521
68	0.32	0.215	68	0.68	0.440
69	0.80	0.464	69	0.66	0.396
70	0.59	0.417	70	0.66	0.466
71	0.28	0.463	71	0.66	0.433
72	0.72	0.427	72	0.49	0.325
73	0.26	0.130	73	0.53	0.289
74	0.70	0.482	74	0.60	0.510
75	0.67	0.322	75	0.57	0.484
76	0.63	0.550	76	0.48	0.240
77	0.45	0.314	77	0.61	0.384
78	0.66	0.399	78	0.45	0.370
79	0.61	0.301	79	0.48	0.453
80	0.66	0.503	80	0.49	0.303
81	0.78	0.534	81	0.47	0.420
82	0.87	0.433	82	0.52	0.267
83	0.60	0.502	83	0.51	0.475
84	0.65	0.480	84	0.35	0.246

APPENDIX J: Differential Item Functioning (DIF) Classification

Note that the DIF classifications have three categories: "A" represents no or negligible DIF, "B" represents intermediate DIF, and "C" represents large DIF. For these results the Mantel-Haenszel approach for DIF was used for the multiple-choice items, and the classifications of A, B, and C for the multiple-choice items were based on the DIF classification rules commonly referred to as the "ETS DIF Classification Rules"[1]. The symbols ">" and "<" represent the direction of DIF; ">" means the item favors the reference group while "<" means the item favors the focal group. Items with the classification of A do not show the direction because items with classifications of B or C are the ones flagged. The DIF analysis was conducted for EFRPL (Eligible for Free or Reduced Priced Lunch; focal group) versus Not-EFRPL (not Eligible for Free or Reduced Priced Lunch; reference group); Female (focal) versus Male (reference), American Indian (focal) versus White (reference), and IEP (focal) versus Non-IEP (reference) group comparisons.

Note: A few items were flagged as having large DIF (C). However, after reviewing the content of the items, no obvious reasons of flagging were found. In order to fulfill the test blueprint requirements, those items were included in the 2008 operational tests until the size of the item bank gets bigger.

Data file 07/30/08 public schools only.

[1] Zieky, M. (1993). Practical questions in the use of DIF statistics in item development. In P.W. Holland & H. Wainer (Eds.), *Differential item functioning: Theory and practice*. (pp.337-364). Hillsdale, NJ: Lawrence Erlbaum.

DIF Classification for Grade 3 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
2	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
3	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
4	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
5	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
6	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
7	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
8	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
9	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
10	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
11	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
12	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
13	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
14	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
15	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
16	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
17	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
18	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
19	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
20	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
21	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
22	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
23	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
24	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
25	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
26	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
27	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
28	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
29	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
30	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
31	8944	3011	5933	A	4278	4666	A	1364	7580	<B	1171	7224	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
33	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
34	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
35	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
36	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
37	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
38	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
39	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	>B
40	8944	3011	5933	A	4278	4666	A	1364	7580	<B	1171	7224	A
41	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
42	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
43	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
44	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
45	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
46	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
47	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
48	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
49	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
50	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
51	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
52	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
53	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
54	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
55	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A
56	8944	3011	5933	A	4278	4666	A	1364	7580	A	1171	7224	A

DIF Classification for Grade 4 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8882	2975	5907	A	4376	4506	A	1317	7565	<B	1146	7192	A
2	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	>B
3	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
4	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
5	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
6	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
7	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
8	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
9	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
10	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
11	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
12	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
13	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
14	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
15	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
16	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
17	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
18	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
19	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
20	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	>B
21	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
22	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
23	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
24	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
25	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
26	8882	2975	5907	A	4376	4506	A	1317	7565	<B	1146	7192	A
27	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
28	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
29	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	>B
30	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
31	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
33	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
34	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
35	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
36	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
37	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
38	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
39	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
40	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
41	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
42	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
43	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
44	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
45	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
46	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
47	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
48	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
49	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
50	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
51	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
52	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
53	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
54	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
55	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A
56	8882	2975	5907	A	4376	4506	A	1317	7565	A	1146	7192	A

DIF Classification for Grade 5 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
2	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
3	9004	2909	6095	A	4391	4613	A	1205	7799	<B	1094	7372	A
4	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
5	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
6	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
7	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
8	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	>B
9	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
10	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
11	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
12	9004	2909	6095	A	4391	4613	<B	1205	7799	A	1094	7372	A
13	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
14	9004	2909	6095	A	4391	4613	>B	1205	7799	A	1094	7372	A
15	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
16	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
17	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
18	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
19	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
20	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
21	9004	2909	6095	A	4391	4613	>B	1205	7799	<B	1094	7372	A
22	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
23	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
24	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
25	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
26	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
27	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
28	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
29	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
30	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	>B
31	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
33	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
34	9004	2909	6095	A	4391	4613	A	1205	7799	<B	1094	7372	A
35	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
36	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
37	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
38	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	>B
39	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
40	9004	2909	6095	A	4391	4613	<B	1205	7799	A	1094	7372	A
41	9004	2909	6095	A	4391	4613	<B	1205	7799	A	1094	7372	A
42	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
43	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
44	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
45	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
46	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
47	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
48	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
49	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
50	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
51	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
52	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
53	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
54	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A
55	9004	2909	6095	A	4391	4613	A	1205	7799	<B	1094	7372	A
56	9004	2909	6095	A	4391	4613	A	1205	7799	A	1094	7372	A

DIF Classification for Grade 6 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
2	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
3	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
4	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
5	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
6	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
7	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	>B
8	9035	2900	6135	A	4408	4627	A	1070	7965	<B	1112	7422	A
9	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
10	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
11	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
12	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
13	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
14	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	>B
15	9035	2900	6135	A	4408	4627	<B	1070	7965	<B	1112	7422	A
16	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
17	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
18	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
19	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
20	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
21	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
22	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
23	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
24	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
25	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
26	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	>C
27	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
28	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
29	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
30	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
31	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
33	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
34	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
35	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
36	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
37	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
38	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
39	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
40	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
41	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
42	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
43	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
44	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
45	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
46	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
47	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
48	9035	2900	6135	A	4408	4627	<B	1070	7965	<B	1112	7422	A
49	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
50	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
51	9035	2900	6135	A	4408	4627	>C	1070	7965	A	1112	7422	A
52	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	>B
53	9035	2900	6135	A	4408	4627	<B	1070	7965	A	1112	7422	>B
54	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
55	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	A
56	9035	2900	6135	A	4408	4627	A	1070	7965	A	1112	7422	>B

DIF Classification for Grade 7 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
2	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
3	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
4	9141	2774	6367	A	4433	4708	>B	975	8166	A	1042	7596	A
5	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
6	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
7	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
8	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
9	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
10	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
11	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
12	9141	2774	6367	A	4433	4708	>B	975	8166	A	1042	7596	A
13	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
14	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
15	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
16	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
17	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
18	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
19	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
20	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
21	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
22	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
23	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
24	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
25	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
26	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
27	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
28	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
29	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
30	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
31	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
33	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
34	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
35	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
36	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
37	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
38	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	>B
39	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
40	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
41	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
42	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
43	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
44	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
45	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
46	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
47	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
48	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
49	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
50	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
51	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
52	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
53	9141	2774	6367	A	4433	4708	A	975	8166	<B	1042	7596	A
54	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
55	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A
56	9141	2774	6367	A	4433	4708	A	975	8166	A	1042	7596	A

DIF Classification for Grade 8 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
2	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
3	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
4	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
5	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
6	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
7	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
8	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
9	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
10	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
11	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
12	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
13	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
14	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
15	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
16	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
17	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
18	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
19	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
20	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
21	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
22	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
23	9305	2730	6575	A	4487	4818	A	923	8382	<B	1034	7743	A
24	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
25	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
26	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
27	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
28	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	>B
29	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
30	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
31	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
33	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
34	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
35	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
36	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
37	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
38	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
39	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
40	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	>B
41	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
42	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
43	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
44	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
45	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
46	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
47	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
48	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
49	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
50	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
51	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
52	9305	2730	6575	A	4487	4818	<C	923	8382	A	1034	7743	A
53	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
54	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
55	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A
56	9305	2730	6575	A	4487	4818	A	923	8382	A	1034	7743	A

DIF Classification for Grade 11 Reading Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	<B
2	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
3	8313	1593	6720	A	4109	4204	<C	714	7599	A	612	7326	A
4	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
5	8313	1593	6720	A	4109	4204	A	714	7599	<B	612	7326	A
6	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
7	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
8	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
9	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
10	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
11	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
12	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
13	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
14	8313	1593	6720	A	4109	4204	>B	714	7599	A	612	7326	A
15	8313	1593	6720	A	4109	4204	>B	714	7599	A	612	7326	A
16	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
17	8313	1593	6720	A	4109	4204	A	714	7599	<B	612	7326	A
18	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
19	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
20	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
21	8313	1593	6720	A	4109	4204	A	714	7599	<C	612	7326	>C
22	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
23	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
24	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
25	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
26	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
27	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
28	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
29	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
30	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
31	8313	1593	6720	A	4109	4204	A	714	7599	<B	612	7326	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8313	1593	6720	A	4109	4204	A	714	7599	<B	612	7326	A
33	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
34	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
35	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
36	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
37	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
38	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
39	8313	1593	6720	A	4109	4204	A	714	7599	A	612	7326	A
40	8313	1593	6720	A	4109	4204	<B	714	7599	<B	612	7326	>B

DIF Classification for Grade 3 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
2	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
3	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
4	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
5	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
6	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
7	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
8	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
9	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
10	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
11	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
12	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
13	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
14	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
15	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
16	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
17	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
18	8963	3016	5947	A	4284	4679	>B	1364	7599	A	1171	7227	A
19	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
20	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
21	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
22	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
23	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
24	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
25	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
26	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
27	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
28	8963	3016	5947	A	4284	4679	A	1364	7599	<B	1171	7227	A
29	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
30	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
31	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
33	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
34	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
35	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
36	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
37	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
38	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
39	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
40	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
41	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
42	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
43	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
44	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
45	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
46	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
47	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
48	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
49	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
50	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
51	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
52	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
53	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
54	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
55	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
56	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
57	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
58	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
59	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
60	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
61	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
62	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
63	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
65	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
66	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
67	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
68	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
69	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
70	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
71	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
72	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
73	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
74	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
75	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
76	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
77	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	>B
78	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
79	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
80	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
81	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
82	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
83	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A
84	8963	3016	5947	A	4284	4679	A	1364	7599	A	1171	7227	A

DIF Classification for Grade 4 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>B
2	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
3	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
4	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
5	8896	2978	5918	A	4380	4516	A	1317	7579	<B	1146	7195	A
6	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
7	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>B
8	8896	2978	5918	A	4380	4516	A	1317	7579	<B	1146	7195	A
9	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
10	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
11	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
12	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
13	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
14	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
15	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
16	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
17	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
18	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
19	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
20	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
21	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
22	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
23	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>B
24	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
25	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
26	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
27	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
28	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>B
29	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
30	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
31	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
33	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
34	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
35	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
36	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
37	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
38	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
39	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
40	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
41	8896	2978	5918	A	4380	4516	>B	1317	7579	A	1146	7195	A
42	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
43	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
44	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
45	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
46	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
47	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
48	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
49	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
50	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
51	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
52	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
53	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
54	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
55	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
56	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
57	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
58	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>C
59	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
60	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
61	8896	2978	5918	A	4380	4516	<B	1317	7579	A	1146	7195	A
62	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
63	8896	2978	5918	A	4380	4516	<B	1317	7579	A	1146	7195	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
65	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
66	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
67	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
68	8896	2978	5918	A	4380	4516	A	1317	7579	<B	1146	7195	A
69	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
70	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
71	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	>B
72	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
73	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
74	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
75	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
76	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
77	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
78	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
79	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
80	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
81	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
82	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
83	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A
84	8896	2978	5918	A	4380	4516	A	1317	7579	A	1146	7195	A

DIF Classification for Grade 5 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9019	2915	6104	A	4396	4623	A	1206	7813	<C	1094	7375	>B
2	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
3	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
4	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
5	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
6	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	>C
7	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
8	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
9	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
10	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
11	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
12	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
13	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
14	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
15	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
16	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
17	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
18	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
19	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
20	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
21	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
22	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
23	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
24	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
25	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
26	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
27	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
28	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
29	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
30	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
31	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
33	9019	2915	6104	A	4396	4623	<B	1206	7813	<B	1094	7375	A
34	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
35	9019	2915	6104	A	4396	4623	A	1206	7813	<C	1094	7375	A
36	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
37	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
38	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
39	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
40	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
41	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
42	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
43	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
44	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
45	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	>C
46	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
47	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
48	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
49	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
50	9019	2915	6104	A	4396	4623	A	1206	7813	<B	1094	7375	A
51	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
52	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
53	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
54	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
55	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
56	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
57	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
58	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
59	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
60	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
61	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
62	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
63	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
65	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
66	9019	2915	6104	A	4396	4623	>B	1206	7813	A	1094	7375	A
67	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	>B
68	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
69	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
70	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
71	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
72	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
73	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
74	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
75	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
76	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
77	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
78	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	>B
79	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
80	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
81	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
82	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
83	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A
84	9019	2915	6104	A	4396	4623	A	1206	7813	A	1094	7375	A

DIF Classification for Grade 6 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
2	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
3	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	A
4	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
5	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
6	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
7	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
8	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
9	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
10	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
11	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
12	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
13	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
14	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
15	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
16	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
17	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
18	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
19	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
20	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
21	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
22	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
23	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
24	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
25	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
26	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
27	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	>B
28	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
29	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	A
30	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
31	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
33	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	A
34	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
35	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
36	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
37	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	>C
38	9043	2908	6135	A	4412	4631	A	1070	7973	<C	1111	7424	A
39	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
40	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
41	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
42	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
43	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
44	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
45	9043	2908	6135	A	4412	4631	<B	1070	7973	<B	1111	7424	A
46	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
47	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
48	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
49	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
50	9043	2908	6135	A	4412	4631	<B	1070	7973	A	1111	7424	A
51	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
52	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	>B
53	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
54	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
55	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
56	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
57	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
58	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
59	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
60	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
61	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
62	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
63	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
65	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
66	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
67	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
68	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
69	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	>B
70	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	>B
71	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
72	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
73	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
74	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
75	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
76	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
77	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
78	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
79	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
80	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
81	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
82	9043	2908	6135	A	4412	4631	A	1070	7973	<B	1111	7424	A
83	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A
84	9043	2908	6135	A	4412	4631	A	1070	7973	A	1111	7424	A

DIF Classification for Grade 7 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9161	2779	6382	A	4441	4720	>B	975	8186	A	1039	7600	A
2	9161	2779	6382	A	4441	4720	>B	975	8186	A	1039	7600	A
3	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
4	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
5	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
6	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
7	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
8	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
9	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
10	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
11	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
12	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
13	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
14	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
15	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
16	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
17	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	>C
18	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
19	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
20	9161	2779	6382	A	4441	4720	<B	975	8186	A	1039	7600	A
21	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
22	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
23	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
24	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
25	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
26	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
27	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
28	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
29	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
30	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	>C
31	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
33	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
34	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
35	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
36	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
37	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
38	9161	2779	6382	A	4441	4720	>B	975	8186	A	1039	7600	A
39	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
40	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
41	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
42	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
43	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
44	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
45	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
46	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
47	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	>B
48	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
49	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
50	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
51	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
52	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
53	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
54	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	>B
55	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
56	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
57	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
58	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
59	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
60	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
61	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
62	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
63	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
65	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
66	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
67	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
68	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
69	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
70	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
71	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
72	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
73	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
74	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
75	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
76	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
77	9161	2779	6382	A	4441	4720	A	975	8186	<B	1039	7600	A
78	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
79	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	>B
80	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
81	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
82	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
83	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A
84	9161	2779	6382	A	4441	4720	A	975	8186	A	1039	7600	A

DIF Classification for Grade 8 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
2	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
3	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
4	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
5	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
6	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
7	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
8	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
9	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
10	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
11	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
12	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
13	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
14	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
15	9325	2736	6589	A	4493	4832	>B	924	8401	A	1031	7744	A
16	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
17	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
18	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
19	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
20	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
21	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
22	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
23	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
24	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
25	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
26	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
27	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
28	9325	2736	6589	A	4493	4832	A	924	8401	<B	1031	7744	>B
29	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
30	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
31	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9325	2736	6589	A	4493	4832	A	924	8401	<B	1031	7744	A
33	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
34	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
35	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
36	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
37	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
38	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
39	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
40	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
41	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
42	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
43	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
44	9325	2736	6589	A	4493	4832	<B	924	8401	A	1031	7744	A
45	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
46	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
47	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
48	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
49	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
50	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
51	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
52	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
53	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
54	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
55	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
56	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
57	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
58	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
59	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
60	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
61	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
62	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
63	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
65	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
66	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
67	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
68	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
69	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
70	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
71	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
72	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
73	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
74	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
75	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	>B
76	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
77	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
78	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
79	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
80	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
81	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
82	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
83	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A
84	9325	2736	6589	A	4493	4832	A	924	8401	A	1031	7744	A

DIF Classification for Grade 11 Mathematics Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
2	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
3	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
4	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
5	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
6	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
7	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
8	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
9	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
10	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
11	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
12	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
13	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
14	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	>B
15	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
16	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
17	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
18	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
19	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
20	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
21	8309	1592	6717	A	4107	4202	A	712	7597	<C	607	7324	A
22	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	>B
23	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
24	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
25	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
26	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	>B
27	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
28	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
29	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
30	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
31	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
33	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
34	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A
35	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	>B
36	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
37	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
38	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
39	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
40	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
41	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
42	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
43	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
44	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
45	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
46	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A
47	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
48	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	>B
49	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
50	8309	1592	6717	A	4107	4202	>B	712	7597	A	607	7324	A
51	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	>B
52	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
53	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
54	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
55	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
56	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A
57	8309	1592	6717	A	4107	4202	>B	712	7597	A	607	7324	A
58	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
59	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
60	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A
61	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
62	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
63	8309	1592	6717	A	4107	4202	<C	712	7597	<C	607	7324	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
65	8309	1592	6717	A	4107	4202	>B	712	7597	<B	607	7324	A
66	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
67	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
68	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
69	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
70	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
71	8309	1592	6717	A	4107	4202	>B	712	7597	A	607	7324	A
72	8309	1592	6717	A	4107	4202	A	712	7597	<B	607	7324	A
73	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
74	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
75	8309	1592	6717	A	4107	4202	>C	712	7597	A	607	7324	A
76	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
77	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
78	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
79	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
80	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
81	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A
82	8309	1592	6717	A	4107	4202	<B	712	7597	<C	607	7324	A
83	8309	1592	6717	A	4107	4202	A	712	7597	A	607	7324	A
84	8309	1592	6717	A	4107	4202	<B	712	7597	A	607	7324	A

DIF Classification for Grade 5 Science Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
2	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
3	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
4	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
5	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
6	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
7	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
8	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
9	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
10	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
11	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
12	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
13	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
14	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
15	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
16	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
17	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
18	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
19	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
20	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
21	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
22	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
23	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
24	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
25	9003	2909	6094	A	4392	4611	A	1204	7799	<B	1093	7373	A
26	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
27	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
28	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
29	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
30	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
31	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
33	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
34	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
35	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
36	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
37	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
38	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
39	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
40	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
41	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
42	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
43	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
44	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
45	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
46	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
47	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
48	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
49	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
50	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
51	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	>B
52	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
53	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
54	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
55	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
56	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
57	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
58	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
59	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
60	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
61	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
62	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
63	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
65	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
66	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
67	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
68	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
69	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A
70	9003	2909	6094	A	4392	4611	A	1204	7799	A	1093	7373	A

DIF Classification for Grade 8 Science Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	9306	2730	6576	A	4485	4821	A	922	8384	<C	1028	7743	>C
2	9306	2730	6576	A	4485	4821	A	922	8384	<B	1028	7743	A
3	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	>B
4	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
5	9306	2730	6576	<B	4485	4821	A	922	8384	<B	1028	7743	>B
6	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
7	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
8	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
9	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
10	9306	2730	6576	A	4485	4821	A	922	8384	<B	1028	7743	>B
11	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
12	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
13	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
14	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
15	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
16	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
17	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
18	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
19	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
20	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
21	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
22	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
23	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
24	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
25	9306	2730	6576	A	4485	4821	>C	922	8384	A	1028	7743	A
26	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
27	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
28	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
29	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
30	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
31	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
33	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
34	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
35	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
36	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
37	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
38	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
39	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
40	9306	2730	6576	A	4485	4821	>C	922	8384	A	1028	7743	A
41	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
42	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
43	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
44	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
45	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
46	9306	2730	6576	A	4485	4821	<B	922	8384	A	1028	7743	A
47	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
48	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
49	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
50	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
51	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
52	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
53	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
54	9306	2730	6576	A	4485	4821	>B	922	8384	A	1028	7743	A
55	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	>B
56	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
57	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
58	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
59	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
60	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
61	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
62	9306	2730	6576	A	4485	4821	<B	922	8384	A	1028	7743	A
63	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
65	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
66	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
67	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
68	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
69	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A
70	9306	2730	6576	A	4485	4821	A	922	8384	A	1028	7743	A

DIF Classification for Grade 11 Science Items

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
1	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
2	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
3	8310	1591	6719	A	4104	4206	>B	712	7598	A	604	7328	A
4	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
5	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
6	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	>B
7	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
8	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
9	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
10	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
11	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
12	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
13	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
14	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
15	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
16	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
17	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
18	8310	1591	6719	A	4104	4206	>B	712	7598	A	604	7328	A
19	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
20	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
21	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
22	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
23	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	>B
24	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
25	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
26	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
27	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
28	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
29	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
30	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
31	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
32	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
33	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
34	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
35	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
36	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
37	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
38	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
39	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
40	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
41	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
42	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
43	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
44	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
45	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
46	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
47	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
48	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
49	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
50	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
51	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
52	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
53	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
54	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
55	8310	1591	6719	A	4104	4206	>B	712	7598	A	604	7328	A
56	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
57	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	A
58	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
59	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
60	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
61	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
62	8310	1591	6719	A	4104	4206	A	712	7598	<B	604	7328	>B
63	8310	1591	6719	A	4104	4206	>B	712	7598	<B	604	7328	A

Item Number	N-count	Number of EFRPL	Number of Not-EFRPL	DIF EFRPL/N	Number of Female	Number of Male	DIF F/M	Number of IEP	Number of Non-IEP	DIF IEP/N	Number of American Indian	Number of White	DIF AI/W
64	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
65	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
66	8310	1591	6719	A	4104	4206	A	712	7598	<C	604	7328	A
67	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
68	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
69	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
70	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
71	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
72	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
73	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
74	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
75	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
76	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
77	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
78	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
79	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
80	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
81	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
82	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A
83	8310	1591	6719	A	4104	4206	>C	712	7598	A	604	7328	A
84	8310	1591	6719	A	4104	4206	A	712	7598	A	604	7328	A

APPENDIX K: Summary of Differential Item Functioning (DIF) Results

Note that the DIF classifications have three categories: "A" represents no or negligible DIF, "B" represents intermediate DIF, and "C" represents large DIF. For these results the Mantel-Haenszel approach for DIF was used for the multiple-choice items, and the classifications of A, B, and C for the multiple-choice items were based on the DIF classification rules commonly referred to as the "ETS DIF Classification Rules"[1]. The symbols ">" and "<" represent the direction of DIF; ">" means the item favors the reference group while "<" means the item favors the focal group. Items with the classification of A do not show the direction because items with classifications of B or C are the ones flagged. The DIF analysis was conducted for EFRPL (Eligible for Free or Reduced Priced Lunch; focal group) versus Not-EFRPL (not Eligible for Free or Reduced Priced Lunch; reference group); Female (focal) versus Male (reference), American Indian (focal) versus White (reference), and IEP (focal) versus Non-IEP (reference) group comparisons.

Note: A few items were flagged as having large DIF (C). However, after reviewing the content of the items, no obvious reasons of flagging were found. In order to fulfill the test blueprint requirements, those items were included in the 2008 operational tests until the size of the item bank gets bigger.

Data file 07/30/08 public schools only.

[1] Zieky, M. (1993). Practical questions in the use of DIF statistics in item development. In P.W. Holland & H. Wainer (Eds.), *Differential item functioning: Theory and practice*. (pp.337-364). Hillsdale, NJ: Lawrence Erlbaum.

Summary of Differential Item Functioning (DIF) Results: Reading

	Group		No. of Students		DIF Classification		
Grade	**Focal**	**Reference**	**Focal**	**Reference**	**A**	**B**	**C**
3	EFRPL	Not-EFRPL	3011	5933	56	0	0
3	Female	Male	4278	4666	56	0	0
3	IEP	Non-IEP	1364	7580	54	2	0
3	American Indian	White	1171	7224	55	1	0
4	EFRPL	Not-EFRPL	2975	5907	56	0	0
4	Female	Male	4376	4506	56	0	0
4	IEP	Non-IEP	1317	7565	54	2	0
4	American Indian	White	1146	7192	53	3	0
5	EFRPL	Not-EFRPL	2909	6095	56	0	0
5	Female	Male	4391	4613	51	5	0
5	IEP	Non-IEP	1205	7799	52	4	0
5	American Indian	White	1094	7372	53	3	0
6	EFRPL	Not-EFRPL	2900	6135	56	0	0
6	Female	Male	4408	4627	52	3	1
6	IEP	Non-IEP	1070	7965	53	3	0
6	American Indian	White	1112	7422	50	5	1
7	EFRPL	Not-EFRPL	2774	6367	56	0	0
7	Female	Male	4433	4708	54	2	0
7	IEP	Non-IEP	975	8166	55	1	0
7	American Indian	White	1042	7596	55	1	0
8	EFRPL	Not-EFRPL	2730	6575	56	0	0
8	Female	Male	4487	4818	55	0	1
8	IEP	Non-IEP	923	8382	55	1	0
8	American Indian	White	1034	7743	54	2	0
11	EFRPL	Not-EFRPL	1593	6720	40	0	0
11	Female	Male	4109	4204	36	3	1
11	IEP	Non-IEP	714	7599	34	5	1
11	American Indian	White	612	7326	37	2	1

Summary of Differential Item Functioning (DIF) Results: Mathematics

	Group		No. of Students		DIF Classification		
Grade	**Focal**	**Reference**	**Focal**	**Reference**	**A**	**B**	**C**
3	EFRPL	Not-EFRPL	3016	5947	84	0	0
3	Female	Male	4284	4679	83	1	0
3	IEP	Non-IEP	1364	7599	83	1	0
3	American Indian	White	1171	7227	70	14	0
4	EFRPL	Not-EFRPL	2978	5918	84	0	0
4	Female	Male	4380	4516	81	3	0
4	IEP	Non-IEP	1317	7579	81	3	0
4	American Indian	White	1146	7195	78	5	1
5	EFRPL	Not-EFRPL	2915	6104	84	0	0
5	Female	Male	4396	4623	82	2	0
5	IEP	Non-IEP	1206	7813	80	2	2
5	American Indian	White	1094	7375	79	3	2
6	EFRPL	Not-EFRPL	2908	6135	84	0	0
6	Female	Male	4412	4631	82	2	0
6	IEP	Non-IEP	1070	7973	76	7	1
6	American Indian	White	1111	7424	79	4	1
7	EFRPL	Not-EFRPL	2779	6382	84	0	0
7	Female	Male	4441	4720	80	4	0
7	IEP	Non-IEP	975	8186	77	7	0
7	American Indian	White	1039	7600	79	3	2
8	EFRPL	Not-EFRPL	2736	6589	84	0	0
8	Female	Male	4493	4832	82	2	0
8	IEP	Non-IEP	924	8401	82	2	0
8	American Indian	White	1031	7744	76	8	0
11	EFRPL	Not-EFRPL	1592	6717	84	0	0
11	Female	Male	4107	4202	71	11	2
11	IEP	Non-IEP	712	7597	65	16	3
11	American Indian	White	607	7324	78	6	0

Summary of Differential Item Functioning (DIF) Results: Science

	Group		No. of Students		DIF Classification		
Grade	**Focal**	**Reference**	**Focal**	**Reference**	**A**	**B**	**C**
5	EFRPL	Not-EFRPL	2909	6094	70	0	0
5	Female	Male	4392	4611	70	0	0
5	IEP	Non-IEP	1204	7799	69	1	0
5	American Indian	White	1093	7373	63	7	0
8	EFRPL	Not-EFRPL	2730	6576	69	1	0
8	Female	Male	4485	4821	65	3	2
8	IEP	Non-IEP	922	8384	66	3	1
8	American Indian	White	1028	7743	65	4	1
11	EFRPL	Not-EFRPL	1591	6719	84	0	0
11	Female	Male	4104	4206	79	4	1
11	IEP	Non-IEP	712	7598	75	8	1
11	American Indian	White	604	7328	81	3	0

APPENDIX L: Subgroup Raw Score Analysis Summary

Data file 07/30/08 public schools only.

Subgroup Raw Score Analysis Summary: Reading

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 3	**Economic Status**									
	EFRPL*	3018	3011	56	32.93	9.42	8	55	0.880	3.259
	Not-EFRPL**	5950	5933	56	38.03	9.01	3	56	0.883	3.082
	Gender									
	Female	4284	4278	56	37.14	9.36	3	56	0.889	3.112
	Male	4684	4666	56	35.57	9.50	3	56	0.888	3.174
	IEP Status									
	IEP	1366	1364	56	31.86	10.12	8	56	0.896	3.259
	Non-IEP	7602	7580	56	37.12	9.11	3	56	0.883	3.118
	LEP Status									
	LEP	496	488	56	28.57	8.51	9	49	0.845	3.350
	Non-LEP	8472	8456	56	36.76	9.32	3	56	0.888	3.127
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8967	8943	56	36.32	9.47	3	56	0.890	3.145
	Race**									
	AS	102	100	56	36.54	9.77	11	54	0.898	3.114
	Black	198	189	56	31.36	9.18	11	52	0.871	3.295
	Hispanic	259	254	56	32.63	10.03	3	56	0.895	3.243
	IN	1175	1171	56	29.00	9.07	3	53	0.865	3.331
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7228	7224	56	37.76	8.87	9	56	0.878	3.101
	Total	8968	8944	56	36.32	9.47	3	56	0.890	3.145
Grade 4	**Economic Status**									
	EFRPL*	2979	2975	56	33.47	9.65	0	56	0.885	3.273
	Not-EFRPL**	5922	5907	56	38.56	9.03	6	56	0.884	3.078
	Gender									
	Female	4382	4376	56	37.73	9.14	4	56	0.884	3.106
	Male	4519	4506	56	36.01	9.85	0	56	0.896	3.184
	IEP Status									
	IEP	1319	1317	56	30.96	10.14	6	56	0.892	3.327
	Non-IEP	7582	7565	56	37.89	9.05	0	56	0.882	3.112
	LEP Status									
	LEP	543	540	56	29.26	9.04	4	54	0.861	3.371
	Non-LEP	8358	8342	56	37.35	9.37	0	56	0.888	3.131
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8900	8881	56	36.86	9.55	0	56	0.891	3.149
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	218	211	56	33.15	9.72	4	54	0.885	3.289
	Hispanic	240	237	56	33.22	9.70	13	53	0.887	3.264
	IN	1147	1146	56	29.57	9.30	6	55	0.869	3.365
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7198	7192	56	38.24	8.98	0	56	0.881	3.101
	Total	8901	8882	56	36.86	9.55	0	56	0.891	3.149

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 5	**Economic Status**									
	EFRPL*	2916	2909	56	32.94	9.65	5	56	0.880	3.340
	Not-EFRPL**	6108	6095	56	37.63	8.97	0	56	0.875	3.175
	Gender									
	Female	4399	4391	56	36.70	9.09	0	56	0.875	3.209
	Male	4625	4613	56	35.56	9.76	5	56	0.889	3.246
	IEP Status									
	IEP	1207	1205	56	30.03	10.13	6	55	0.888	3.388
	Non-IEP	7817	7799	56	37.05	8.99	0	56	0.873	3.203
	LEP Status									
	LEP	514	509	56	28.86	9.28	10	54	0.863	3.435
	Non-LEP	8510	8495	56	36.55	9.29	0	56	0.880	3.218
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9023	9003	56	36.11	9.45	0	56	0.883	3.232
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	196	186	56	32.48	9.55	11	50	0.877	3.345
	Hispanic	251	248	56	31.00	10.11	0	52	0.890	3.349
	IN	1096	1094	56	29.39	9.36	5	55	0.867	3.420
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7377	7372	56	37.34	8.93	6	56	0.872	3.195
	Total	9024	9004	56	36.11	9.45	0	56	0.883	3.232
Grade 6	**Economic Status**									
	EFRPL*	2910	2900	56	33.45	10.05	5	53	0.899	3.201
	Not-EFRPL**	6147	6135	56	38.88	8.92	6	56	0.889	2.968
	Gender									
	Female	4419	4408	56	37.80	9.11	5	56	0.891	3.003
	Male	4638	4627	56	36.51	10.07	7	56	0.906	3.085
	IEP Status									
	IEP	1072	1070	56	28.66	10.28	5	54	0.895	3.330
	Non-IEP	7985	7965	56	38.28	8.95	8	56	0.887	3.006
	LEP Status									
	LEP	505	502	56	28.82	10.22	5	54	0.895	3.305
	Non-LEP	8552	8533	56	37.63	9.37	6	56	0.895	3.030
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9056	9034	56	37.14	9.63	5	56	0.900	3.049
	Race**									
	AS	104	104	56	36.94	10.72	12	54	0.923	2.982
	Black	177	170	56	32.16	10.45	11	51	0.906	3.203
	Hispanic	225	225	56	33.15	9.43	10	53	0.884	3.218
	IN	1121	1112	56	29.36	9.98	5	53	0.889	3.317
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7428	7422	56	38.54	8.90	6	56	0.887	2.992
	Total	9057	9035	56	37.14	9.63	5	56	0.900	3.050

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 7	**Economic Status**									
	EFRPL*	2785	2774	56	32.00	9.73	1	54	0.883	3.329
	Not-EFRPL**	6401	6367	56	37.60	9.20	4	56	0.883	3.151
	Gender									
	Female	4447	4433	56	36.74	9.35	1	56	0.884	3.183
	Male	4739	4708	56	35.10	9.97	5	55	0.896	3.222
	IEP Status									
	IEP	978	975	56	27.08	9.60	7	53	0.874	3.406
	Non-IEP	8208	8166	56	36.95	9.17	1	56	0.880	3.178
	LEP Status									
	LEP	511	502	56	28.06	9.11	1	51	0.860	3.406
	Non-LEP	8675	8639	56	36.35	9.55	4	56	0.888	3.191
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9180	9135	56	35.91	9.71	1	56	0.891	3.207
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	215	202	56	32.09	10.85	1	54	0.909	3.274
	Hispanic	214	210	56	31.44	9.11	12	54	0.863	3.365
	IN	1060	1042	56	28.65	9.22	4	54	0.865	3.383
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7603	7596	56	37.12	9.25	7	56	0.883	3.171
	Total	9186	9141	56	35.90	9.71	1	56	0.891	3.206
Grade 8	**Economic Status**									
	EFRPL*	2745	2730	56	31.44	9.22	7	54	0.866	3.381
	Not-EFRPL**	6607	6575	56	36.32	8.76	0	54	0.864	3.228
	Gender									
	Female	4505	4487	56	35.48	8.76	0	54	0.862	3.252
	Male	4847	4818	56	34.34	9.50	6	54	0.880	3.296
	IEP Status									
	IEP	929	923	56	26.68	8.46	6	50	0.831	3.478
	Non-IEP	8423	8382	56	35.79	8.79	0	54	0.863	3.250
	LEP Status									
	LEP	428	418	56	27.41	8.89	8	50	0.850	3.439
	Non-LEP	8924	8887	56	35.24	9.03	0	54	0.869	3.269
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9339	9292	56	34.90	9.16	0	54	0.872	3.276
	Race**									
	AS	126	123	56	34.93	9.41	12	52	0.880	3.251
	Black	194	183	56	31.60	9.84	0	52	0.885	3.338
	Hispanic	225	215	56	30.90	8.42	14	48	0.835	3.423
	IN	1054	1034	56	27.27	8.80	3	52	0.847	3.441
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7746	7743	56	36.10	8.66	6	54	0.860	3.244
	Total	9352	9305	56	34.89	9.17	0	54	0.872	3.277

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 11	**Economic Status**									
	EFRPL*	1600	1593	40	24.70	7.10	1	40	0.858	2.677
	Not-EFRPL**	6753	6720	40	27.69	6.57	4	40	0.849	2.551
	Gender									
	Female	4132	4109	40	27.75	6.42	7	40	0.843	2.539
	Male	4221	4204	40	26.50	7.06	1	40	0.864	2.605
	IEP Status									
	IEP	715	714	40	18.99	6.74	4	40	0.823	2.836
	Non-IEP	7638	7599	40	27.88	6.26	1	40	0.835	2.541
	LEP Status									
	LEP	151	149	40	20.21	7.42	1	39	0.857	2.806
	Non-LEP	8202	8164	40	27.24	6.70	4	40	0.853	2.568
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8352	8312	40	27.12	6.78	1	40	0.856	2.577
	Race****									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	130	129	40	24.01	7.52	7	40	0.870	2.708
	Hispanic	149	144	40	24.21	7.20	8	40	0.859	2.704
	IN	624	612	40	22.90	7.32	1	39	0.861	2.728
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7347	7326	40	27.58	6.54	4	40	0.848	2.553
	Total	8353	8313	40	27.12	6.78	1	40	0.856	2.577

* EFRPL represents Eligible for Free or Reduced Priced Lunch.
** Not-EFRPL represents Not Eligible for Free or Reduced Priced Lunch.
*** Sample size is less than 100; the statistics are not estimated with sufficient stability to report.
**** AS=Asian; BL=Black, not Hispanic; HI=Hispanic; IN=American Indian or Alaskan Native; PI=Native Hawaiian or Pacific Islander; WH=White, not Hispanic.
[1] SD is the standard deviation.
[2] Min represents minimum.
[3] Max represents maximum.
[4] CTT SEM represents classical test theory standard error of measurement.

Subgroup Raw Score Analysis Summary: Mathematics

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 3	**Economic Status**									
	EFRPL*	3018	3016	84	57.48	15.20	1	84	0.940	3.715
	Not-EFRPL**	5950	5947	84	65.17	13.27	0	84	0.936	3.369
	Gender									
	Female	4284	4284	84	62.24	14.15	0	84	0.938	3.518
	Male	4684	4679	84	62.90	14.65	1	84	0.944	3.465
	IEP Status									
	IEP	1366	1364	84	56.86	15.88	12	84	0.945	3.722
	Non-IEP	7602	7599	84	63.61	13.89	0	84	0.939	3.442
	LEP Status									
	LEP	496	494	84	49.88	15.80	1	80	0.938	3.919
	Non-LEP	8472	8469	84	63.32	13.98	0	84	0.939	3.458
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8967	8962	84	62.58	14.42	0	84	0.942	3.485
	Race**									
	AS	102	102	84	64.12	14.58	24	84	0.947	3.370
	Black	198	198	84	51.90	17.83	0	81	0.955	3.799
	Hispanic	259	259	84	56.51	15.75	17	81	0.944	3.714
	IN	1175	1171	84	49.82	15.20	4	83	0.933	3.945
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7228	7227	84	65.14	12.74	1	84	0.929	3.384
	Total	8968	8963	84	62.58	14.42	0	84	0.942	3.485
Grade 4	**Economic Status**									
	EFRPL*	2979	2978	84	51.16	15.54	0	83	0.936	3.945
	Not-EFRPL**	5922	5918	84	59.37	14.28	1	84	0.934	3.670
	Gender									
	Female	4382	4380	84	56.49	14.67	1	84	0.934	3.775
	Male	4519	4516	84	56.75	15.72	0	84	0.943	3.750
	IEP Status									
	IEP	1319	1317	84	47.73	16.00	14	82	0.937	4.002
	Non-IEP	7582	7579	84	58.16	14.53	0	84	0.934	3.718
	LEP Status									
	LEP	543	542	84	44.33	15.12	1	79	0.927	4.089
	Non-LEP	8358	8354	84	57.42	14.87	0	84	0.937	3.738
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8900	8895	84	56.62	15.21	0	84	0.939	3.764
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	218	218	84	47.25	17.05	1	82	0.946	3.962
	Hispanic	240	239	84	49.31	15.76	16	79	0.937	3.963
	IN	1147	1146	84	44.09	14.56	11	81	0.921	4.101
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7198	7195	84	59.12	14.03	0	84	0.931	3.693
	Total	8901	8896	84	56.62	15.21	0	84	0.939	3.764

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 5	**Economic Status**									
	EFRPL*	2916	2915	84	49.93	15.02	0	83	0.930	3.963
	Not-EFRPL**	6108	6104	84	57.97	14.19	1	84	0.931	3.729
	Gender									
	Female	4399	4396	84	55.27	14.50	1	84	0.931	3.819
	Male	4625	4623	84	55.47	15.36	0	84	0.939	3.796
	IEP Status									
	IEP	1207	1206	84	46.15	15.13	4	83	0.929	4.043
	Non-IEP	7817	7813	84	56.80	14.40	0	84	0.932	3.768
	LEP Status									
	LEP	514	513	84	43.00	14.35	0	82	0.920	4.070
	Non-LEP	8510	8506	84	56.12	14.65	1	84	0.933	3.790
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9023	9018	84	55.37	14.95	0	84	0.935	3.809
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	196	196	84	46.03	16.19	2	79	0.940	3.965
	Hispanic	251	250	84	46.70	15.01	1	81	0.929	4.010
	IN	1096	1094	84	44.13	13.81	0	81	0.913	4.081
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7377	7375	84	57.55	14.09	4	84	0.929	3.752
	Total	9024	9019	84	55.37	14.95	0	84	0.935	3.810
Grade 6	**Economic Status**									
	EFRPL*	2910	2908	84	51.97	15.05	3	83	0.934	3.873
	Not-EFRPL**	6147	6135	84	60.01	13.81	9	84	0.932	3.598
	Gender									
	Female	4419	4412	84	57.53	14.21	9	84	0.933	3.683
	Male	4638	4631	84	57.32	15.17	3	84	0.941	3.698
	IEP Status									
	IEP	1072	1070	84	44.79	15.10	9	83	0.929	4.025
	Non-IEP	7985	7973	84	59.12	13.80	3	84	0.930	3.641
	LEP Status									
	LEP	505	505	84	45.79	15.69	3	83	0.936	3.959
	Non-LEP	8552	8538	84	58.11	14.36	9	84	0.934	3.675
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9056	9042	84	57.42	14.71	3	84	0.937	3.693
	Race**									
	AS	104	104	84	57.36	15.83	21	83	0.947	3.637
	Black	177	177	84	48.77	15.89	14	78	0.940	3.909
	Hispanic	225	225	84	50.44	14.18	16	80	0.924	3.908
	IN	1121	1111	84	45.68	14.76	3	84	0.926	4.014
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7428	7424	84	59.60	13.66	12	84	0.930	3.625
	Total	9057	9043	84	57.42	14.71	3	84	0.937	3.693

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 7	**Economic Status**									
	EFRPL*	2785	2779	84	51.78	16.25	10	83	0.943	3.871
	Not-EFRPL**	6401	6382	84	60.99	14.61	13	84	0.941	3.559
	Gender									
	Female	4447	4441	84	57.89	15.32	13	84	0.943	3.669
	Male	4739	4720	84	58.48	16.06	10	84	0.949	3.640
	IEP Status									
	IEP	978	975	84	43.23	15.87	10	84	0.935	4.035
	Non-IEP	8208	8186	84	59.98	14.71	11	84	0.940	3.606
	LEP Status									
	LEP	511	511	84	45.80	16.70	11	84	0.943	3.971
	Non-LEP	8675	8650	84	58.93	15.34	10	84	0.944	3.637
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9180	9155	84	58.21	15.70	10	84	0.946	3.663
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	215	215	84	48.22	18.21	11	81	0.954	3.887
	Hispanic	214	214	84	48.49	15.42	16	81	0.935	3.943
	IN	1060	1039	84	45.22	16.04	12	84	0.938	3.996
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7603	7600	84	60.52	14.47	10	84	0.939	3.587
	Total	9186	9161	84	58.20	15.71	10	84	0.946	3.663
Grade 8	**Economic Status**									
	EFRPL*	2745	2736	84	47.17	15.75	4	84	0.936	3.972
	Not-EFRPL**	6607	6589	84	56.10	15.39	12	84	0.941	3.732
	Gender									
	Female	4505	4493	84	53.64	15.40	12	84	0.939	3.808
	Male	4847	4832	84	53.33	16.57	4	84	0.947	3.804
	IEP Status									
	IEP	929	924	84	38.88	14.01	14	80	0.914	4.116
	Non-IEP	8423	8401	84	55.09	15.40	4	84	0.940	3.768
	LEP Status									
	LEP	428	427	84	42.56	16.70	13	84	0.942	4.009
	Non-LEP	8924	8898	84	54.00	15.80	4	84	0.942	3.793
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9339	9312	84	53.49	16.01	4	84	0.944	3.805
	Race**									
	AS	126	126	84	57.83	16.37	21	84	0.951	3.635
	Black	194	194	84	45.27	17.01	13	80	0.946	3.961
	Hispanic	225	223	84	44.73	15.76	12	80	0.935	4.006
	IN	1054	1031	84	39.42	14.69	4	82	0.922	4.090
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7746	7744	84	55.76	15.02	13	84	0.938	3.749
	Total	9352	9325	84	53.48	16.02	4	84	0.944	3.806

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 11	**Economic Status**									
	EFRPL*	1600	1592	84	46.75	15.72	7	83	0.936	3.968
	Not-EFRPL**	6753	6717	84	55.06	15.68	0	84	0.943	3.748
	Gender									
	Female	4132	4107	84	53.40	15.35	0	84	0.939	3.793
	Male	4221	4202	84	53.53	16.65	7	84	0.948	3.780
	IEP Status									
	IEP	715	712	84	34.65	13.83	7	82	0.913	4.084
	Non-IEP	7638	7597	84	55.23	15.05	0	84	0.938	3.760
	LEP Status									
	LEP	151	147	84	39.36	14.84	14	78	0.925	4.051
	Non-LEP	8202	8162	84	53.72	15.93	0	84	0.944	3.786
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8352	8308	84	53.46	16.02	0	84	0.944	3.793
	Race****									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	130	130	84	42.42	16.19	14	78	0.940	3.966
	Hispanic	149	146	84	45.40	14.57	15	79	0.924	4.011
	IN	624	607	84	40.15	14.74	7	84	0.924	4.073
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7347	7324	84	54.89	15.48	0	84	0.941	3.756
	Total	8353	8309	84	53.46	16.02	0	84	0.944	3.793

* EFRPL represents Eligible for Free or Reduced Priced Lunch.
** Not-EFRPL represents Not Eligible for Free or Reduced Priced Lunch.
*** Sample size is less than 100; the statistics are not estimated with sufficient stability to report.
**** AS=Asian; BL=Black, not Hispanic; HI=Hispanic; IN=American Indian or Alaskan Native; PI=Native Hawaiian or Pacific Islander; WH=White, not Hispanic.
[1] SD is the standard deviation.
[2] Min represents minimum.
[3] Max represents maximum.
[4] CTT SEM represents classical test theory standard error of measurement.

Subgroup Raw Score Analysis Summary: Science

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 5	**Economic Status**									
	EFRPL*	2916	2909	70	42.10	11.36	8	69	0.896	3.671
	Not-EFRPL**	6108	6094	70	48.43	10.53	10	70	0.893	3.450
	Gender									
	Female	4399	4392	70	45.65	10.87	9	70	0.892	3.570
	Male	4625	4611	70	47.09	11.47	8	70	0.908	3.483
	IEP Status									
	IEP	1207	1204	70	40.43	11.99	8	67	0.905	3.706
	Non-IEP	7817	7799	70	47.31	10.79	10	70	0.895	3.498
	LEP Status									
	LEP	514	508	70	35.51	10.39	11	65	0.864	3.827
	Non-LEP	8510	8495	70	47.04	10.91	8	70	0.897	3.504
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9023	9002	70	46.39	11.20	8	70	0.901	3.528
	Race**									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	196	186	70	40.82	10.98	11	65	0.885	3.733
	Hispanic	251	247	70	40.21	11.59	11	69	0.897	3.722
	IN	1096	1093	70	37.23	11.05	8	65	0.883	3.773
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7377	7373	70	48.09	10.41	10	70	0.889	3.473
	Total	9024	9003	70	46.39	11.20	8	70	0.901	3.528
Grade 8	**Economic Status**									
	EFRPL*	2745	2730	70	41.08	12.03	8	69	0.907	3.666
	Not-EFRPL**	6607	6576	70	47.82	11.49	1	70	0.910	3.450
	Gender									
	Female	4505	4485	70	44.76	11.45	1	69	0.903	3.570
	Male	4847	4821	70	46.85	12.49	11	70	0.923	3.458
	IEP Status									
	IEP	929	922	70	35.47	11.40	11	68	0.890	3.781
	Non-IEP	8423	8384	70	46.98	11.56	1	70	0.909	3.486
	LEP Status									
	LEP	428	419	70	34.94	11.88	8	67	0.899	3.768
	Non-LEP	8924	8887	70	46.36	11.81	1	70	0.912	3.504
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	9339	9293	70	45.85	12.04	1	70	0.915	3.518
	Race**									
	AS	126	124	70	46.21	13.13	15	70	0.930	3.468
	Black	194	183	70	41.14	12.33	1	64	0.911	3.670
	Hispanic	225	221	70	39.26	12.63	10	69	0.915	3.680
	IN	1054	1028	70	34.84	11.22	8	68	0.887	3.777
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7746	7743	70	47.61	11.21	13	70	0.904	3.470
	Total	9352	9306	70	45.84	12.04	1	70	0.915	3.519

Grade	Group	No. of Students Tested	No. of Students with Valid Scores	Number of Items	Raw Score Mean	Raw Score SD[1]	Raw Score Min[2]	Raw Score Max[3]	KR 20 Reliability	CTT SEM[4]
Grade 11	**Economic Status**									
	EFRPL*	1600	1591	84	47.71	14.67	13	81	0.923	4.082
	Not-EFRPL**	6753	6719	84	54.25	14.24	1	84	0.924	3.921
	Gender									
	Female	4132	4104	84	51.91	13.63	1	83	0.914	3.998
	Male	4221	4206	84	54.06	15.33	9	84	0.935	3.894
	IEP Status									
	IEP	715	712	84	37.59	13.68	10	79	0.906	4.196
	Non-IEP	7638	7598	84	54.44	13.78	1	84	0.919	3.930
	LEP Status									
	LEP	151	148	84	38.96	13.76	17	76	0.907	4.189
	Non-LEP	8202	8162	84	53.26	14.44	1	84	0.925	3.947
	Migrant Status									
	Migrant***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Non-Migrant	8352	8309	84	53.00	14.55	1	84	0.926	3.951
	Race****									
	AS***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	Black	130	130	84	44.25	14.70	18	79	0.921	4.136
	Hispanic	149	146	84	45.69	15.20	14	77	0.928	4.079
	IN	624	604	84	42.15	14.41	8	80	0.917	4.139
	PI***	- -	- -	- -	- -	- -	- -	- -	- -	- -
	WH	7347	7328	84	54.22	14.04	1	84	0.922	3.929
	Total	8353	8310	84	53.00	14.55	1	84	0.926	3.951

* EFRPL represents Eligible for Free or Reduced Priced Lunch.
** Not-EFRPL represents Not Eligible for Free or Reduced Priced Lunch.
*** Sample size is less than 100; the statistics are not estimated with sufficient stability to report.
**** AS=Asian; BL=Black, not Hispanic; HI=Hispanic; IN=American Indian or Alaskan Native; PI=Native Hawaiian or Pacific Islander; WH=White, not Hispanic.
[1] SD is the standard deviation.
[2] Min represents minimum.
[3] Max represents maximum.
[4] CTT SEM represents classical test theory standard error of measurement.

APPENDIX M: Reporting Category Raw Score Analysis Summary

Data file 07/30/08 public schools only.

Reporting Category Raw Score Analysis Summary: Reading

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
3	1.1	7	8944	5.41	1.42	0	7	0.553	0.950
	1.2	7	8944	4.88	1.49	0	7	0.523	1.028
	1.3	7	8944	4.04	1.76	0	7	0.558	1.170
	2.1	7	8944	4.79	1.65	0	7	0.551	1.105
	2.2	7	8944	4.35	1.69	0	7	0.528	1.158
	3.1	7	8944	4.23	1.56	0	7	0.482	1.120
	4.1	7	8944	5.01	1.54	0	7	0.519	1.069
	4.2	7	8944	3.60	1.62	0	7	0.425	1.233
4	1.1	7	8882	5.66	1.31	0	7	0.497	0.928
	1.2	7	8882	4.80	1.63	0	7	0.562	1.080
	1.3	7	8882	4.67	1.69	0	7	0.542	1.146
	2.1	7	8882	4.41	1.69	0	7	0.537	1.152
	2.2	7	8882	4.94	1.40	0	7	0.436	1.051
	3.1	7	8882	3.96	1.75	0	7	0.547	1.178
	4.1	7	8882	3.79	1.61	0	7	0.436	1.211
	4.2	7	8882	4.64	1.69	0	7	0.577	1.096
5	1.1	7	9004	4.70	1.54	0	7	0.449	1.143
	1.2	7	9004	4.63	1.59	0	7	0.497	1.128
	1.3	7	9004	4.58	1.52	0	7	0.492	1.086
	2.1	7	9004	4.75	1.61	0	7	0.532	1.102
	2.2	7	9004	4.17	1.70	0	7	0.522	1.175
	3.1	7	9004	4.23	1.72	0	7	0.533	1.175
	4.1	7	9004	4.74	1.53	0	7	0.450	1.134
	4.2	7	9004	4.31	1.64	0	7	0.496	1.165
6	1.1	7	9035	4.80	1.52	0	7	0.498	1.075
	1.2	7	9035	5.02	1.56	0	7	0.589	1.002
	2.1	7	9035	4.31	1.61	0	7	0.469	1.170
	2.2	7	9035	3.99	1.64	0	7	0.495	1.166
	3.1	7	9035	4.72	1.76	0	7	0.607	1.102
	4.1	7	9035	5.71	1.53	0	7	0.651	0.902
	4.2	7	9035	2.96	1.56	0	7	0.417	1.193
	4.3	7	9035	5.61	1.81	0	7	0.778	0.850
7	1.1	7	9141	4.29	1.65	0	7	0.481	1.189
	1.2	7	9141	5.23	1.56	0	7	0.576	1.015
	2.1	7	9141	4.80	1.56	0	7	0.521	1.079
	2.2	7	9141	4.50	1.57	0	7	0.485	1.129
	3.1	7	9141	4.11	1.75	0	7	0.539	1.189
	4.1	7	9141	4.28	1.53	0	7	0.447	1.140
	4.2	7	9141	4.72	1.63	0	7	0.550	1.091
	4.3	7	9141	3.97	1.74	0	7	0.527	1.199

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
8	1.1	7	9305	4.84	1.64	0	7	0.532	1.125
	1.2	7	9305	4.45	1.34	0	7	0.245	1.161
	2.1	7	9305	4.90	1.53	0	7	0.478	1.104
	2.2	7	9305	4.85	1.70	0	7	0.574	1.106
	3.1	7	9305	4.03	1.62	0	7	0.426	1.229
	4.1	7	9305	4.53	1.71	0	7	0.561	1.132
	4.2	7	9305	3.41	1.55	0	7	0.403	1.200
	4.3	7	9305	3.89	1.56	0	7	0.415	1.193
11	1.1	8	8313	5.66	1.74	0	8	0.561	1.151
	2.1	8	8313	5.92	1.58	0	8	0.516	1.101
	2.2	8	8313	4.57	1.85	0	8	0.509	1.293
	3.1	8	8313	4.98	1.83	0	8	0.587	1.173
	4.1	8	8313	5.98	1.60	0	8	0.604	1.005

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Reporting Category: represents the standards (please reference the test blueprint).

Reporting Category Raw Score Analysis Summary: Mathematics

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
3	A.1	7	8963	5.36	1.53	0	7	0.628	0.932
	A.2	7	8963	5.33	1.47	0	7	0.563	0.969
	A.3	7	8963	4.86	1.87	0	7	0.693	1.035
	A.4	7	8963	5.65	1.48	0	7	0.605	0.930
	G.1	7	8963	5.56	1.35	0	7	0.493	0.962
	G.2	7	8963	5.45	1.55	0	7	0.619	0.956
	M.1	7	8963	4.90	1.61	0	7	0.545	1.087
	N.1	7	8963	4.59	1.70	0	7	0.599	1.078
	N.2	7	8963	5.25	1.53	0	7	0.600	0.965
	N.3	7	8963	5.32	1.75	0	7	0.710	0.944
	S.1	7	8963	5.52	1.51	0	7	0.601	0.956
	S.2	7	8963	4.77	1.86	0	7	0.693	1.028
4	A.1	7	8896	5.03	1.59	0	7	0.573	1.040
	A.2	7	8896	4.77	1.79	0	7	0.656	1.049
	A.3	7	8896	3.87	1.84	0	7	0.604	1.158
	A.4	7	8896	4.70	1.78	0	7	0.633	1.078
	G.1	7	8896	5.30	1.59	0	7	0.583	1.025
	G.2	7	8896	4.70	1.56	0	7	0.496	1.108
	M.1	7	8896	4.36	1.60	0	7	0.465	1.168
	N.1	7	8896	3.88	1.71	0	7	0.559	1.137
	N.2	7	8896	4.91	1.69	0	7	0.614	1.051
	N.3	7	8896	5.24	1.76	0	7	0.683	0.988
	S.1	7	8896	4.40	1.72	0	7	0.589	1.101
	S.2	7	8896	5.46	1.67	0	7	0.677	0.946
5	A.1	7	9019	4.86	1.58	0	7	0.530	1.080
	A.2	7	9019	4.65	1.65	0	7	0.582	1.066
	A.3	7	9019	4.44	1.86	0	7	0.635	1.124
	A.4	7	9019	4.30	1.78	0	7	0.618	1.098
	G.1	7	9019	4.93	1.58	0	7	0.597	1.005
	G.2	7	9019	4.61	1.55	0	7	0.482	1.117
	M.1	7	9019	4.79	1.68	0	7	0.555	1.118
	N.1	7	9019	4.40	1.56	0	7	0.434	1.171
	N.2	7	9019	5.64	1.58	0	7	0.677	0.898
	N.3	7	9019	4.07	1.90	0	7	0.641	1.141
	S.1	7	9019	3.81	1.68	0	7	0.504	1.182
	S.2	7	9019	4.86	1.65	0	7	0.607	1.035

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
6	A.1	7	9043	4.59	1.80	0	7	0.607	1.127
	A.2	7	9043	4.52	1.78	0	7	0.604	1.117
	A.3	7	9043	5.52	1.52	0	7	0.611	0.951
	A.4	7	9043	4.51	1.61	0	7	0.540	1.092
	G.1	7	9043	5.25	1.54	0	7	0.606	0.964
	G.2	7	9043	4.03	1.52	0	7	0.466	1.108
	M.1	7	9043	4.64	1.87	0	7	0.686	1.045
	N.1	7	9043	4.90	1.60	0	7	0.560	1.060
	N.2	7	9043	5.71	1.52	0	7	0.658	0.888
	N.3	7	9043	4.96	1.50	0	7	0.557	0.999
	S.1	7	9043	4.65	1.51	0	7	0.438	1.135
	S.2	7	9043	4.14	1.91	0	7	0.660	1.116
7	A.1	7	9161	4.06	1.56	0	7	0.494	1.110
	A.2	7	9161	5.03	1.75	0	7	0.678	0.995
	A.3	7	9161	5.23	1.60	0	7	0.591	1.023
	A.4	7	9161	5.34	1.67	0	7	0.659	0.974
	G.1	7	9161	4.78	1.66	0	7	0.573	1.087
	G.2	7	9161	4.81	1.63	0	7	0.566	1.073
	M.1	7	9161	4.88	1.60	0	7	0.528	1.099
	N.1	7	9161	4.65	1.74	0	7	0.610	1.083
	N.2	7	9161	4.40	1.93	0	7	0.689	1.074
	N.3	7	9161	4.57	1.76	0	7	0.633	1.067
	S.1	7	9161	5.12	1.63	0	7	0.601	1.027
	S.2	7	9161	5.34	1.73	0	7	0.700	0.950
8	A.1	7	9325	3.43	2.13	0	7	0.767	1.030
	A.2	7	9325	5.18	1.55	0	7	0.602	0.977
	A.3	7	9325	4.43	1.72	0	7	0.574	1.125
	A.4	7	9325	4.08	1.88	0	7	0.622	1.155
	G.1	7	9325	4.44	1.87	0	7	0.655	1.100
	G.2	7	9325	4.03	1.72	0	7	0.569	1.129
	M.1	7	9325	4.42	1.86	0	7	0.656	1.092
	N.1	7	9325	5.38	1.59	0	7	0.655	0.936
	N.2	7	9325	4.14	1.56	0	7	0.413	1.197
	N.3	7	9325	4.68	1.73	0	7	0.600	1.095
	S.1	7	9325	4.97	1.66	0	7	0.624	1.020
	S.2	7	9325	4.30	1.95	0	7	0.710	1.048

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
11	A.1	7	8309	4.90	1.95	0	7	0.737	1.000
	A.2	7	8309	4.95	1.75	0	7	0.644	1.043
	A.3	7	8309	4.42	1.81	0	7	0.617	1.120
	A.4	7	8309	4.95	1.90	0	7	0.710	1.022
	G.1	7	8309	4.11	1.60	0	7	0.525	1.102
	G.2	7	8309	4.79	1.62	0	7	0.559	1.077
	M.1	7	8309	4.67	1.57	0	7	0.536	1.069
	N.1	7	8309	4.59	1.68	0	7	0.586	1.083
	N.2	7	8309	4.63	1.63	0	7	0.556	1.084
	N.3	7	8309	3.90	1.69	0	7	0.577	1.098
	S.1	7	8309	3.78	1.84	0	7	0.585	1.187
	S.2	7	8309	3.78	1.74	0	7	0.584	1.123

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Reporting Category: A = Algebra, G= Geometry, M = Measurement, N = Number Sense, S = Statistics.

Reporting Category Raw Score Analysis Summary: Science

Grade	Reporting Category	Number of Items	N-count[1]	Raw Score Mean	Raw Score SD[2]	Raw Score Min[3]	Raw Score Max[4]	KR20 Reliability	CTT SEM[5]
5	P.1	7	9003	4.67	1.35	0	7	0.344	1.097
	P.2	7	9003	5.13	1.43	0	7	0.482	1.029
	P.3	7	9003	4.75	1.44	0	7	0.413	1.100
	L.1	7	9003	4.21	1.79	0	7	0.579	1.162
	L.2	7	9003	3.84	1.76	0	7	0.536	1.196
	L.3	7	9003	4.99	1.56	0	7	0.529	1.067
	E.1	5	9003	2.69	1.26	0	5	0.397	0.980
	E.2	9	9003	6.44	1.94	0	9	0.602	1.226
	S.1	7	9003	4.70	1.60	0	7	0.504	1.130
	S.2	7	9003	4.97	1.68	0	7	0.620	1.038
8	N.1	7	9306	4.98	1.42	0	7	0.432	1.069
	N.2	7	9306	4.42	1.73	0	7	0.577	1.124
	P.1	14	9306	8.27	2.98	0	14	0.708	1.611
	E.1	21	9306	13.43	4.05	0	21	0.764	1.967
	E.2	7	9306	4.56	1.53	0	7	0.461	1.123
	S.1	7	9306	5.07	1.70	0	7	0.615	1.055
	S.2	7	9306	5.11	1.56	0	7	0.592	1.000
11	N.1	7	8310	4.67	1.57	0	7	0.493	1.121
	N.2	7	8310	5.01	1.57	0	7	0.559	1.042
	P.1	7	8310	4.10	1.66	0	7	0.486	1.188
	P.2	7	8310	4.96	1.56	0	7	0.533	1.065
	P.3	7	8310	3.92	1.56	0	7	0.411	1.201
	L.1	7	8310	4.12	1.71	0	7	0.545	1.152
	L.2	7	8310	4.36	1.77	0	7	0.587	1.140
	L.3	7	8310	4.81	1.67	0	7	0.581	1.082
	E.1	8	8310	4.48	1.91	0	8	0.561	1.267
	E.2	6	8310	3.42	1.52	0	6	0.499	1.077
	S.1	7	8310	4.41	1.76	0	7	0.566	1.157
	S.2	7	8310	4.73	1.66	0	7	0.568	1.089

[1] N-count is the number of students with valid scores.
[2] SD is the standard deviation.
[3] Min represents minimum.
[4] Max represents maximum.
[5] CTT SEM represents classical test theory standard error of measurement.
Reporting Category: N = Nature of Science, P = Physical Science, L = Life Science, E = Earth/Space Science, S = Science and Society.

APPENDIX N: Alignment Analysis Summary

Reading Alignment Analysis Summary: Grade 3

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
3.R.1.1	Med	2	3	2	**7**	4	2		**6**	(2)	1	2	**1**
3.R.1.2	High	1	2	4	**7**	1	3	4	**8**	0	(1)	0	**(1)**
3.R.1.3	Low	4	2	1	**7**	6		1	**7**	(2)	2	0	**0**
3.R.2.1	Med	2	3	2	**7**	4	3		**7**	(2)	0	2	**0**
3.R.2.2	High	1	2	4	**7**	1	2	4	**7**	0	0	0	**0**
3.R.3.1	Med	2	3	2	**7**		2	3	**5**	2	1	(1)	**2**
3.R.4.1	Med	2	3	2	**7**	2	5		**7**	0	(2)	2	**0**
3.R.4.2	Med	2	3	2	**7**	1	2	4	**7**	1	1	(2)	**0**
		16	**21**	**19**	**56**	**19**	**19**	**16**	**54**	**(3)**	**2**	**3**	**2**

Reading Alignment Analysis Summary: Grade 4

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
4.R.1.1	Med	2	3	2	**7**	4	2		**6**	(2)	1	2	**1**
4.R.1.2	High	1	2	4	**7**	1	7	1	**9**	0	(5)	3	**(2)**
4.R.1.3	Med	2	3	2	**7**		6		**6**	2	(3)	2	**1**
4.R.2.1	Low	4	2	1	**7**	1	3	2	**6**	3	(1)	(1)	**1**
4.R.2.2	High	1	2	4	**7**	1	2	5	**8**	0	0	(1)	**(1)**
4.R.3.1	High	1	2	4	**7**		5	2	**7**	1	(3)	2	**0**
4.R.4.1	Med	2	3	2	**7**		5	2	**7**	2	(2)	0	**0**
4.R.4.2	Med	2	3	2	**7**	4	3		**7**	(2)	0	2	**0**
		15	**20**	**21**	**56**	**11**	**33**	**12**	**56**	**4**	**(13)**	**9**	**0**

Reading Alignment Analysis Summary: Grade 5

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
5.R.1.1	Med	2	3	2	**7**	3	4		**7**	(1)	(1)	2	**0**
5.R.1.2	Med	2	3	2	**7**	1	6		**7**	1	(3)	2	**0**
5.R.1.3	High	1	2	4	**7**	5	1	1	**7**	(4)	1	3	**0**
5.R.2.1	High	1	2	4	**7**	3	3	2	**8**	(2)	(1)	2	**(1)**
5.R.2.2	Low	4	2	1	**7**	1	3	2	**6**	3	(1)	(1)	**1**
5.R.3.1	Med	2	3	2	**7**		2	2	**4**	2	1	0	**3**
5.R.4.1	Med	2	3	2	**7**	1	4	2	**7**	1	(1)	0	**0**
5.R.4.2	Med	2	3	2	**7**		3	4	**7**	2	0	(2)	**0**
		16	**21**	**19**	**56**	**14**	**26**	**13**	**53**	**2**	**(5)**	**6**	**3**

Reading Alignment Analysis Summary: Grade 6

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
6.R.1.1	Med	2	3	2	**7**	5	2		**7**	(3)	1	2	**0**
6.R.1.2	Med	2	3	2	**7**	2	3	2	**7**	0	0	0	**0**
6.R.2.1	Med	2	3	2	**7**	3	2	2	**7**	(1)	1	0	**0**
6.R.2.2	High	1	2	4	**7**		5	2	**7**	1	(3)	2	**0**
6.R.3.1	Med	2	3	2	**7**	2	2	3	**7**	0	1	(1)	**0**
6.R.4.1	Med	2	3	2	**7**	6	1		**7**	(4)	2	2	**0**
6.R.4.2	High	1	2	4	**7**			7	**7**	1	2	(3)	**0**
6.R.4.3	High	1	2	4	**7**		1	6	**7**	1	1	(2)	**0**
		13	**21**	**22**	**56**	**18**	**16**	**22**	**56**	**(5)**	**5**	**0**	**0**

Reading Alignment Analysis Summary: Grade 7

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
7.R.1.1	Med	2	3	2	**7**	2	3	2	**7**	0	0	0	**0**
7.R.1.2	Med	2	3	2	**7**	2	3	2	**7**	0	0	0	**0**
7.R.2.1	Med	2	3	2	**7**	2	3	2	**7**	0	0	0	**0**
7.R.2.2	Med	2	3	2	**7**	1	2	4	**7**	1	1	(2)	**0**
7.R.3.1	High	1	2	4	**7**	1	4	2	**7**	0	(2)	2	**0**
7.R.4.1	Med	2	3	2	**7**	1	6		**7**	1	(3)	2	**0**
7.R.4.2	High	1	2	4	**7**	1	2	4	**7**	0	0	0	**0**
7.R.4.3	High	1	2	4	**7**	1	1	5	**7**	0	1	(1)	**0**
		13	**21**	**22**	**56**	**11**	**24**	**21**	**56**	**2**	**(3)**	**1**	**0**

Reading Alignment Analysis Summary: Grade 8

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
8.R.1.1	Med	2	3	2	**7**	3	3	1	**7**	(1)	0	1	**0**
8.R.1.2	Med	2	3	2	**7**	2	3	2	**7**	0	0	0	**0**
8.R.2.1	High	1	2	4	**7**	1	2	5	**8**	0	0	(1)	**(1)**
8.R.2.2	Med	2	3	2	**7**	2	2	2	**6**	0	1	0	**1**
8.R.3.1	High	1	2	4	**7**		1	5	**6**	1	1	(1)	**1**
8.R.4.1	High	1	2	4	**7**	1	4	2	**7**	0	(2)	2	**0**
8.R.4.2	High	1	2	4	**7**	1	2	4	**7**	0	0	0	**0**
8.R.4.3	High	1	2	4	**7**	1	3	3	**7**	0	(1)	1	**0**
		11	**19**	**26**	**56**	**11**	**20**	**24**	**55**	**0**	**(1)**	**2**	**1**

Reading Alignment Analysis Summary: Grade 11

Standards Assessed		TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count (Std)
11.R.1.1	Med	2	4	2	**8**	2	4	2	**8**	0	0	0	**0**
11.R.2.1	High	2	2	4	**8**		3	5	**8**	2	(1)	(1)	**0**
11.R.2.2	High	2	2	4	**8**		5	3	**8**	2	(3)	1	**0**
11.R.3.1	High	2	2	4	**8**		1	5	**6**	2	1	(1)	**2**
11.R.4.1	High	2	2	4	**8**	1	6	1	**8**	1	(4)	3	**0**
		10	**12**	**18**	**40**	**3**	**19**	**16**	**38**	**7**	**(7)**	**2**	**2**

Mathematics Alignment Analysis Summary: Grade 3

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med	2	2		**4**	2	2		**4**	0	0	0	**0**
A.1	1.2	Low	2	1		**3**	3			**3**	(1)	1	0	**0**
A.2	2.1	Med	1	2		**3**	2	1		**3**	(1)	1	0	**0**
A.2	2.2	Med	1	3		**4**	4		1	**5**	(3)	3	(1)	**(1)**
A.3	3.1	Med	2	4	1	**7**		7		**7**	2	(3)	1	**0**
A.4	4.1	Med	2	2		**4**	2	2		**4**	0	0	0	**0**
A.4	4.2	Med		3		**3**	2			**2**	(2)	3	0	**1**
G.1	1.1	Med	2	2		**4**	3			**3**	(1)	2	0	**1**
G.1	1.2	Low	2	1		**3**	4			**4**	(2)	1	0	**(1)**
G.2	2.1	Med	2	5		**7**	2	4	1	**7**	0	1	(1)	**0**
M.1	1.1	Low	1			**1**	1			**1**	0	0	0	**0**
M.1	1.2	Med		1	1	**2**	1			**1**	(1)	1	1	**1**
M.1	1.3	Low	1			**1**				**0**	1	0	0	**1**
M.1	1.4	Med		1	1	**2**	2			**2**	(2)	1	1	**0**
M.1	1.5	Low	1			**1**	1			**1**	0	0	0	**0**
N.1	1.1	Med	1	1		**2**	1	1		**2**	0	0	0	**0**
N.1	1.2	Med	1	1		**2**	3			**3**	(2)	1	0	**(1)**
N.1	1.3	Low	2	1		**3**	1	3		**4**	1	(2)	0	**(1)**
N.2	2.1	Med		5	2	**7**	3	2		**5**	(3)	3	2	**2**
N.3	3.1	Med		5	2	**7**	4	3		**7**	(4)	2	2	**0**
S.1	1.1	Med		3	1	**4**	1	3	1	**5**	(1)	0	0	**(1)**
S.1	1.2	Med		3		**3**		2		**2**	0	1	0	**1**
S.2	2.1	Med	3	4		**7**	5	2		**7**	(2)	2	0	**0**
			26	**50**	**8**	**84**	**47**	**32**	**3**	**82**	**(21)**	**18**	**5**	**2**

Mathematics Alignment Analysis Summary: Grade 4

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med	1	1		**2**	2	1		**3**	(1)	0	0	**(1)**
A.1	1.2	Med		2		**2**	1			**1**	(1)	2	0	**1**
A.1	1.3	Med		2	1	**3**	2			**2**	(2)	2	1	**1**
A.2	2.1	Med	1	2		**3**	1	3	1	**5**	0	(1)	(1)	**(2)**
A.2	2.2	Med		3	1	**4**	2	3		**5**	(2)	0	1	**(1)**
A.3	3.1	Med	1	4	2	**7**	3	3		**6**	(2)	1	2	**1**
A.4	4.1	Med	1	5	1	**7**	1	5		**6**	0	0	1	**1**
G.1	1.1	Low	2	2		**4**	2	2		**4**	0	0	0	**0**
G.1	1.2	Low	2	1		**3**	1		2	**3**	1	1	(2)	**0**
G.2	2.1	Med	2	2		**4**	1		1	**2**	1	2	(1)	**2**
G.2	2.2	Low	2	1		**3**	4			**4**	(2)	1	0	**(1)**
M.1	1.1	Low	2			**2**	1			**1**	1	0	0	**1**
M.1	1.2	Med		2		**2**		2		**2**	0	0	0	**0**
M.1	1.3	Med		1	1	**2**	2			**2**	(2)	1	1	**0**
M.1	1.4	Med		1		**1**	2			**2**	(2)	1	0	**(1)**
N.1	1.1	Med		1		**1**	1	1		**2**	(1)	0	0	**(1)**
N.1	1.2	Med	1	1		**2**	1			**1**	0	1	0	**1**
N.1	1.3	Med	1	1		**2**		2		**2**	1	(1)	0	**0**
N.1	1.4	Med		2		**2**	1			**1**	(1)	2	0	**1**
N.2	2.1	Med	1	2	1	**4**	2	4	1	**7**	(1)	(2)	0	**(3)**
N.2	2.2	Med	1	2		**3**		1		**1**	1	1	0	**2**
N.3	3.1	Med	2	4	1	**7**	5	2		**7**	(3)	2	1	**0**
S.1	1.1	Med	1	3		**4**	2			**2**	(1)	3	0	**2**
S.1	1.2	Low	2	1		**3**		2		**2**	2	(1)	0	**1**
S.2	2.1	Med	3	4		**7**	4	3		**7**	(1)	1	0	**0**
			26	**50**	**8**	**84**	**41**	**34**	**5**	**80**	**(15)**	**16**	**3**	**4**

Mathematics Alignment Analysis Summary: Grade 5

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med		2	1	**3**	5			**5**	(5)	2	1	**(2)**
A.1	1.2	Med		3	1	**4**	4			**4**	(4)	3	1	**0**
A.2	2.1	Med		5	2	**7**	6	2		**8**	(6)	3	2	**(1)**
A.3	3.1	Med		3	1	**4**	1	4		**5**	(1)	(1)	1	**(1)**
A.3	3.2	Med		3		**3**				**0**	0	3	0	**3**
A.4	4.1	Med		5	2	**7**	2	3		**5**	(2)	2	2	**2**
G.1	1.1	Low	3	1		**4**	3	1		**4**	0	0	0	**0**
G.1	1.2	Low	3			**3**	3			**3**	0	0	0	**0**
G.2	2.1	Med	1	1		**2**	2	1		**3**	(1)	0	0	**(1)**
G.2	2.2	Low	3			**3**				**0**	3	0	0	**3**
G.2	2.3	Med		2		**2**	2	2		**4**	(2)	0	0	**(2)**
M.1	1.1	Med	1	1		**2**		1		**1**	1	0	0	**1**
M.1	1.2	Med		1		**1**	2	1		**3**	(2)	0	0	**(2)**
M.1	1.3	Med		1	1	**2**		1		**1**	0	0	1	**1**
M.1	1.4	Med		1	1	**2**	2			**2**	(2)	1	1	**0**
N.1	1.1	Med		2		**2**	1	1		**2**	(1)	1	0	**0**
N.1	1.2	Med		1		**1**				**0**	0	1	0	**1**
N.1	1.3	Low	2			**2**	1	1		**2**	1	(1)	0	**0**
N.1	1.4	Med		1		**1**		2		**2**	0	(1)	0	**(1)**
N.1	1.5	Med		1		**1**				**0**	0	1	0	**1**
N.2	2.1	Med		2		**2**	2		1	**3**	(2)	2	(1)	**(1)**
N.2	2.2	Med		2		**2**		2		**2**	0	0	0	**0**
N.2	2.3	Med	1	1	1	**3**	2	1		**3**	(1)	0	1	**0**
N.3	3.1	Med	2	4	1	**7**	3	4		**7**	(1)	0	1	**0**
S.1	1.1	Med	1	2	1	**4**	4			**4**	(3)	2	1	**0**
S.1	1.2	Med	1	1	1	**3**		1		**1**	1	0	1	**2**
S.2	2.1	Med	2	2		**4**	4	1		**5**	(2)	1	0	**(1)**
S.2	2.2	Med	1	2		**3**	1	1		**2**	0	1	0	**1**
			21	**50**	**13**	**84**	**50**	**30**	**1**	**81**	**(29)**	**20**	**12**	**3**

Mathematics Alignment Analysis Summary: Grade 6

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med		2	1	**3**		2	1	**3**	0	0	0	**0**
A.1	1.2	Med		2	2	**4**		2	2	**4**	0	0	0	**0**
A.2	2.1	Med	1	4	2	**7**		4	3	**7**	1	0	(1)	**0**
A.3	3.1	Low	2	1		**3**		2	1	**3**	2	(1)	(1)	**0**
A.3	3.2	Med	1	2	1	**4**	1	5		**6**	0	(3)	1	**(2)**
A.4	4.1	Med	2	4	1	**7**		2	3	**5**	2	2	(2)	**2**
G.1	1.1	Med	1	3		**4**	3		3	**6**	(2)	3	(3)	**(2)**
G.1	1.2	Med	1	2		**3**	2		1	**3**	(1)	2	(1)	**0**
G.2	2.1	Med	1	4	2	**7**	2	1	1	**4**	(1)	3	1	**3**
M.1	1.1	Med		3	1	**4**		3	1	**4**	0	0	0	**0**
M.1	1.2	Med	1	2		**3**			3	**3**	1	2	(3)	**0**
N.1	1.1	Med	1	3		**4**				**0**	1	3	0	**4**
N.1	1.2	Low	3			**3**	1	3		**4**	2	(3)	0	**(1)**
N.2	2.1	Med	2	4	1	**7**	2	4	2	**8**	0	0	(1)	**(1)**
N.3	3.1	Med	1	4	2	**7**	2	3	4	**9**	(1)	1	(2)	**(2)**
S.1	1.1	Med	1	2		**3**		2		**2**	1	0	0	**1**
S.1	1.2	Med		2	2	**4**		2	3	**5**	0	0	(1)	**(1)**
S.2	2.1	Low	3	3	1	**7**		5	2	**7**	3	(2)	(1)	**0**
			21	**47**	**16**	**84**	**13**	**40**	**30**	**83**	**8**	**7**	**(14)**	**1**

Mathematics Alignment Analysis Summary: Grade 7

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med		3	1	**4**	1	3		**4**	(1)	0	1	**0**
A.1	1.2	Low	2	1		**3**		3		**3**	2	(2)	0	**0**
A.2	2.1	Med		4	3	**7**	1	3		**4**	(1)	1	3	**3**
A.3	3.1	Med		2	1	**3**	1	2		**3**	(1)	0	1	**0**
A.3	3.2	Med		3	1	**4**		3	1	**4**	0	0	0	**0**
A.4	4.1	Med		4	3	**7**		6	1	**7**	0	(2)	2	**0**
G.1	1.1	Med	1	2	1	**4**		5		**5**	1	(3)	1	**(1)**
G.1	1.2	Low	2	1		**3**			1	**1**	2	1	(1)	**2**
G.2	2.1	Med		4	3	**7**	1	4	1	**6**	(1)	0	2	**1**
M.1	1.1	Med	2	2		**4**	2	1		**3**	0	1	0	**1**
M.1	1.2	Med	1	2		**3**		3		**3**	1	(1)	0	**0**
N.1	1.1	Med	2	2		**4**	1	5		**6**	1	(3)	0	**(2)**
N.1	1.2	Med		2	1	**3**		2		**2**	0	0	1	**1**
N.2	2.1	Med	2	3	2	**7**				**0**	2	3	2	**7**
N.3	3.1	Med	1	4	2	**7**		8	2	**10**	1	(4)	0	**(3)**
S.1	1.1	Med	1	2		**3**		3		**3**	1	(1)	0	**0**
S.1	1.2	Med		2	2	**4**		3	1	**4**	0	(1)	1	**0**
S.2	2.1	Med	3	3	1	**7**		7		**7**	3	(4)	1	**0**
			17	**46**	**21**	**84**	**7**	**61**	**7**	**75**	**10**	**(15)**	**14**	**9**

Mathematics Alignment Analysis Summary: Grade 8

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med	1	4	2	**7**		5	1	**6**	1	(1)	1	**1**
A.2	2.1	Med	1	4	2	**7**		5	1	**6**	1	(1)	1	**1**
A.3	3.1	Med	2	4	1	**7**		5		**5**	2	(1)	1	**2**
A.4	4.1	High		1	3	**4**		1	2	**3**	0	0	1	**1**
A.4	4.2	High		1	2	**3**		6		**6**	0	(5)	2	**(3)**
G.1	1.1	Med	1	2	1	**4**		2	1	**3**	1	0	0	**1**
G.1	1.2	Med		2	1	**3**		4		**4**	0	(2)	1	**(1)**
G.2	2.1	Med	1	4	2	**7**		4	3	**7**	1	0	(1)	**0**
M.1	1.1	Med	1	2	1	**4**			1	**1**	1	2	0	**3**
M.1	1.2	Med	1	2		**3**		6		**6**	1	(4)	0	**(3)**
N.1	1.1	Med	3	4		**7**		4	1	**5**	3	0	(1)	**2**
N.2	2.1	Med	1	4	2	**7**		10	1	**11**	1	(6)	1	**(4)**
N.3	3.1	Med	1	4	2	**7**		4	1	**5**	1	0	1	**2**
S.1	1.1	Med	2	2		**4**		3		**3**	2	(1)	0	**1**
S.1	1.2	Med		2	1	**3**		3	1	**4**	0	(1)	0	**(1)**
S.2	2.1	Med	2	4	1	**7**		7		**7**	2	(3)	1	**0**
			17	**46**	**21**	**84**	**0**	**69**	**13**	**82**	**17**	**(23)**	**8**	**2**

Mathematics Alignment Analysis Summary: Grade 11

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD		Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
A.1	1.1	Med	1	4	2	**7**	2	3	2	**7**	(1)	1	0	**0**
A.2	2.1	Med		2	1	**3**	1	2		**3**	(1)	0	1	**0**
A.2	2.2	Med		3	1	**4**	2	2		**4**	(2)	1	1	**0**
A.3	3.1	Med		3	1	**4**	1	2	1	**4**	(1)	1	0	**0**
A.3	3.2	Med		2	1	**3**	2		2	**4**	(2)	2	(1)	**(1)**
A.4	4.1	Med	1	4	2	**7**	2	2	2	**6**	(1)	2	0	**1**
G.1	1.1	Med		1	2	**3**	2	1		**3**	(2)	0	2	**0**
G.1	1.2	Med		2	2	**4**		2	1	**3**	0	0	1	**1**
G.2	2.1	High			3	**3**		2		**2**	0	(2)	3	**1**
G.2	2.2	Med		1	1	**2**	1			**1**	(1)	1	1	**1**
G.2	2.3	Med		1	1	**2**	1	3	1	**5**	(1)	(2)	0	**(3)**
M.1	1.1	Med	1	1		**2**	2	1		**3**	(1)	0	0	**(1)**
M.1	1.2	Med	1	1		**2**				**0**	1	1	0	**2**
M.1	1.3	Med		1	2	**3**	1	2		**3**	(1)	(1)	2	**0**
N.1	1.1	Med	2	2		**4**	2	1	1	**4**	0	1	(1)	**0**
N.1	1.2	Med	1	2		**3**	2	1		**3**	(1)	1	0	**0**
N.2	2.1	Med	1	4	2	**7**	2	5	1	**8**	(1)	(1)	1	**(1)**
N.3	3.1	High		1	2	**3**	1	3	1	**5**	(1)	(2)	1	**(2)**
N.3	3.2	Med	1	2	1	**4**			1	**1**	1	2	0	**3**
S.1	1.1	High			2	**2**	1	1		**2**	(1)	(1)	2	**0**
S.1	1.2	Med	1	2		**3**	1	1		**2**	0	1	0	**1**
S.1	1.3	High			2	**2**		1		**1**	0	(1)	2	**1**
S.2	2.1	Low	2	1		**3**	1			**1**	1	1	0	**2**
S.2	2.2	Med	1	2	1	**4**	1	1		**2**	0	1	1	**2**
			13	**42**	**29**	**84**	**28**	**36**	**13**	**77**	**(15)**	**6**	**16**	**7**

Science Alignment Analysis Summary: Grade 5

Standards Assessed			TEST BLUEPRINT				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
P.1	1.1	Low	3	4		**7**	3	3	1	**7**	0	1	(1)	**0**
P.2	2.1	Low	2	1		**3**	2	1		**3**	0	0	0	**0**
P.2	2.2	High		1	3	**4**	1	3		**4**	(1)	(2)	3	**0**
P.3	3.1	Med		2	1	**3**		1	1	**2**	0	1	0	**1**
P.3	3.2	Med	1	1		**2**		1	1	**2**	1	0	(1)	**0**
P.3	3.3	Med	1	1		**2**	2	1		**3**	(1)	0	0	**(1)**
L.1	1.1	Med	2	4	1	**7**	4	2		**6**	(2)	2	1	**1**
L.2	2.1	High			3	**3**	1	1	1	**3**	(1)	(1)	2	**0**
L.2	2.2	Med	1	3		**4**	2	1	1	**4**	(1)	2	(1)	**0**
L.3	3.1	Med	1	1		**2**				**0**	1	1	0	**2**
L.3	3.2	Med		2		**2**	2	1		**3**	(2)	1	0	**(1)**
L.3	3.3	Med	1	2		**3**	1	2		**3**	0	0	0	**0**
E.1	1.1	Med	2	5		**7**	4	1		**5**	(2)	4	0	**2**
E.2	2.1	Med	1	3		**4**	1	4		**5**	0	(1)	0	**(1)**
E.2	2.2	Med		3		**3**		3	1	**4**	0	0	(1)	**(1)**
S.1	1.1	Low	2	2		**4**		3		**3**	2	(1)	0	**1**
S.1	1.2	Med		3		**3**			2	**2**	0	3	(2)	**1**
S.2	2.1	High		1	6	**7**		4	3	**7**	0	(3)	3	**0**
			17	**39**	**14**	**70**	**23**	**32**	**11**	**66**	**(6)**	**7**	**3**	**4**

Science Alignment Analysis Summary: Grade 8

Standards Assessed			TEST BLUEPRINT Cognitive Complexity				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
N.1	1.1	Med	3	4		**7**	1	4	2	**7**	2	0	(2)	**0**
N.2	2.1	High	1	2	4	**7**	1	3	3	**7**	0	(1)	1	**0**
P.1	1.1	High		2	2	**4**	1	2		**3**	(1)	0	2	**1**
P.1	1.2	High	2	3		**5**		2	3	**5**	2	1	(3)	**0**
P.1	1.3	Med	2	3		**5**	3	3		**6**	(1)	0	0	**(1)**
E.1	1.1	Med	2	3		**5**		5		**5**	2	(2)	0	**0**
E.1	1.2	High		2	2	**4**	1	2		**3**	(1)	0	2	**1**
E.1	1.3	High		2	2	**4**		3	2	**5**	0	(1)	0	**(1)**
E.1	1.4	Med	2	2		**4**		4		**4**	2	(2)	0	**0**
E.1	1.5	High		2	2	**4**	1	2	1	**4**	(1)	0	1	**0**
E.2	2.1	High		2	2	**4**	1	2		**3**	(1)	0	2	**1**
E.2	2.2	High		1	2	**3**		2	1	**3**	0	(1)	1	**0**
S.1	1.1	Med	2	5		**7**		5	1	**6**	2	0	(1)	**1**
S.2	2.1	High		2	5	**7**	2	3	1	**6**	(2)	(1)	4	**1**
			14	**35**	**21**	**70**	**11**	**42**	**14**	**67**	**3**	**(7)**	**7**	**3**

Science Alignment Analysis Summary: Grade 11

Standards Assessed			TEST BLUEPRINT Cognitive Complexity				2008 FINAL FORM				ALIGNMENT VARIANCE			
IND	STD	CC of Std	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count	Low	Med	High	Total Item Count
N.1	1.1	High			3	**3**	1	1		**2**	(1)	(1)	3	**1**
N.1	1.2	High		1	3	**4**		3	1	**4**	0	(2)	2	**0**
N.2	2.1	High			3	**3**	1	5		**6**	(1)	(5)	3	**(3)**
N.2	2.2	Med	1	3		**4**	2			**2**	(1)	3	0	**2**
P.1	1.1	High			2	**2**	1	1		**2**	(1)	(1)	2	**0**
P.1	1.2	Med		2		**2**	1			**1**	(1)	2	0	**1**
P.1	1.3	Med		1		**1**		1		**1**	0	0	0	**0**
P.1	1.4	Med		1		**1**			1	**1**	0	1	(1)	**0**
P.1	1.5	Med		1		**1**	1			**1**	(1)	1	0	**0**
P.2	2.1	High		1	2	**3**	1			**1**	(1)	1	2	**2**
P.2	2.2	Med		2		**2**	2	2		**4**	(2)	0	0	**(2)**
P.2	2.3	Med		2		**2**		2		**2**	0	0	0	**0**
P.3	3.1	Med	1	2		**3**		2		**2**	1	0	0	**1**
P.3	3.2	Med	1	1		**2**		3		**3**	1	(2)	0	**(1)**
P.3	3.3	Med	1	1		**2**	1		1	**2**	0	1	(1)	**0**
L.1	1.1	High			2	**2**	3	2		**5**	(3)	(2)	2	**(3)**
L.1	1.2	Med		3		**3**				**0**	0	3	0	**3**
L.1	1.3	High			2	**2**	1	2		**3**	(1)	(2)	2	**(1)**
L.2	2.1	Med		3		**3**	2			**2**	(2)	3	0	**1**
L.2	2.2	High			4	**4**		3	1	**4**	0	(3)	3	**0**
L.3	3.1	Med	3	4		**7**		7		**7**	3	(3)	0	**0**
E.1	1.1	Med	1	1		**2**	2	4		**6**	(1)	(3)	0	**(4)**
E,1	1.2	Med	1	2		**3**		1		**1**	1	1	0	**2**
E.1	1.3	High		1	1	**2**		2	1	**3**	0	(1)	0	**(1)**
E.2	2.1	Med	2	4	1	**7**		3	1	**4**	2	1	0	**3**
S.1	1.1	Med	2	2		**4**		3	1	**4**	2	(1)	(1)	**0**
S.1	1.2	High			3	**3**	1	2		**3**	(1)	(2)	3	**0**
S.2	2.1	High			3	**3**		3	1	**4**	0	(3)	2	**(1)**
S.2	2.2	High			2	**2**				**0**	0	0	2	**2**
S.2	2.3	High			2	**2**		2	1	**3**	0	(2)	1	**(1)**
			13	**38**	**33**	**84**	**20**	**54**	**9**	**83**	**(7)**	**(16)**	**24**	**1**

APPENDIX O: Reading Alignment Report

REPORT

Alignment Analysis of Reading Standards and Assessments

South Dakota
Grades 3-8 and 11
2008

Norman L. Webb

November 13, 2008

Acknowledgements

Reviewers

John Fortier	Group Leader	Wisconsin
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Cindy Jacobson		Wisconsin
Tammy Bauck		South Dakota
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The South Dakota Department of Education funded this analysis. Gay Pickner, Director of Assessment, Office of Curriculum, Technology, and Assessment, was the main contact person for the South Dakota Department of Education and oversaw the coordination of the study.

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Executive Summary

A three- day alignment institute was held September 29, 30, and October 1, 2008 in Sioux Falls, South Dakota to analyze the South Dakota Reading Standards and the 2008 assessments. One group of seven reviewers participated in the institute. Three of the reviewers were from South Dakota and four were from other states. The reviewers included reading education content experts, district reading supervisors, reading teachers, and reading assessment experts. The group analyzed assessments and standards for grades 3-8 and 11.

The alignment for each of the assessments with the South Dakota Reading Standards for grades 3-8 and 11 was either acceptable or in need of slight improvement to attain full alignment (see summary table below). The alignment was acceptable for grades 4, 5, 7, and 8 and in need of slight improvement for grades 3, 6, and 11. The main alignment issue was that the assessments did not have a sufficient number of items (N=6) that mapped to each of the four indicators to meet the criteria for categorical concurrence. This was particularly true for Indicator R.3 (Respond to Diverse Works) in grades 3-6 and 8. Reviewers did find an increased number of items that mapped to Indicator R.3 with an increase in grade. Indicator R.4 (Retrieve, Analyze and Synthesize) in grade 11 also had fewer than six items. All of the grade 7 Indicators had at least six items.

The other alignment issue for a few indicators was that the items did not match the complexity of the standards. One indicator for five of the seven assessments did not have at least 50% of the items at or above the DOK level of the corresponding standards. In particular, items corresponding to Indicator R.2 and R.4 on the grade 11 assessment were low. The range and balance were met for each indicator across all grades.

Overall, from one to seven items on the assessments would need to be added or replaced to have full alignment. Reviewers did find items in need of more work that were indicated by source-of-challenge comments or in their notes.

Summary Table
Percent of South Dakota Reading Standards with Acceptable Level on Each Alignment Criteria for Grade 3-8 and 11

Grade	*Categorical Concurrence* (six or more items)	*Depth-of-Knowledge Consistency* (50% at/above)	*Range of Knowledge* (50% of objectives)	*Balance of Representation* (without possible weakness)	*Estimated Range of Items per to be Added or Replaced for Full Alignment*
3	75	75	75	75	5
4	75	100	100	100	2
5	75	75	100	100	3
6	75	75	100	100	7
7	100	75	100	100	3
8	75	100	100	100	1
11	75	50	100	100	6

Categorical Concurrence	>6 items
Depth-of-Knowledge	>50% with DOK level the same or higher than level of corresponding Objectives
Range-of-Knowledge	>70% of objectives under a standard
Balance of Representation	A possible weakness if one or more objectives with a relative large number of items (e.g. five or more than the objective with the next highest number of items)

Alignment Analysis of Reading Standards and Assessments

South Dakota
Grades 3-8 and 11
2008

Norman L. Webb

Introduction

The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective standards-based education system. Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide an education system toward students learning what they are expected to know and do. As such, alignment is a quality of the relationship between expectations and assessments and not an attribute of any one of these two system components. Alignment describes the match between expectations and an assessment that can be legitimately improved by changing either student expectations or the assessments. As a relationship between two or more system components, alignment is determined by using the multiple criteria described in detail in a National Institute for Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education* (Webb, 1997).

A three-day alignment institute was held September 29, 30, and October 1, 2008 in Sioux Falls, South Dakota to analyze the South Dakota Reading Standards and assessments administered in 2008. One group of seven reviewers participated in the institute. The group analyzed assessments and standards for grades 3-8 and 11. Three of the reviewers were from South Dakota and four were from other states. The reviewers included reading education content experts, district reading supervisors, reading teachers, and reading assessment experts.

South Dakota used the terminology of *goal/strand, indicator,* and *standard*. Reading only has one goal/strand. The Reading Strand was delineated into four indicators:

R.1 Apply various reading strategies to comprehend and interpret text;
R.2 Evaluate text structures, literary elements, and literary devices;
R.3 Respond to diverse works from various cultures and time periods; and
R.4 Retrieve, analyze, synthesize, and evaluate a variety of informational texts.

Indicators described key aspects of the goals/strands. The standards under the indicators specified what students were to know and be able to do related to the indicator at the specific grade level.

As part of the alignment institute, reviewers were trained to identify the depth of knowledge (DOK) of the standards and assessment items. This training included reviewing the definitions of the four DOK levels and reviewing examples of each. Then, the reviewers generally participated in a consensus process to determine the DOK levels of the standards and individual analyses of the assessment items. Following individual analyses of the items, reviewers participated in a debriefing discussion in which they assessed the degree to which they had coded particular items or types of content to the standards.

To derive the results from the analysis, the reviewers' responses were averaged. Any variance among reviewers was considered legitimate, with the true DOK level for the item falling somewhere between the two or more assigned values. Such variation could signify a lack of clarity in how the standards were written, the robustness of an item that could legitimately correspond to more than one standard and/or a DOK that falls in between two of the four defined levels. Reviewers were allowed to identify one assessment item as corresponding to up to three standards—one primary hit (standard) and up to two secondary hits. However, reviewers could only code one DOK level to each assessment item, even if the item corresponded to more than one standard.

Reviewers were instructed to focus primarily on the alignment between the state's standards and assessments. However, reviewers were encouraged to offer their opinions on the quality of the standards or of the assessment activities/items by writing a note about the item. Reviewers also could indicate whether there was a source-of-challenge issue with the item—i.e., a problem with the item that might cause the student who knows the material to give a wrong answer or enable someone who does not have the knowledge being tested to answer the item correctly.

The results produced from the institute pertain only to the issue of alignment between the South Dakota Reading Content Standards and the assessments. Note that an alignment analysis of this nature does not serve as external verification of the general quality of the state's standards or assessments. Rather, only the degree of alignment is discussed in the results. For these results, the means of the reviewers' coding were used to determine whether the alignment criteria were met. When reviewers did vary in their judgments, the means lessened the error that might result from any one reviewer's finding. Standard deviations are reported in the tables provided in Appendix B, which give one indication of the variance among reviewers.

This report describes the results of an alignment study of the South Dakota assessment administered in the spring 2008 and reading content standards for grades 3-8 and 11. The study addressed specific criteria related to the content agreement between the state's standards and grade-level assessments. Four criteria received major attention: categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence and balance of representation.

Alignment Criteria Used for This Analysis

This analysis judged the alignment between the standards and the assessments on the basis of four criteria. Information is also reported on the quality of items by identifying items with sources-of-challenge and other issues. For each alignment criterion, an acceptable level was defined by what would be required to assure that a student had met the standards.

Categorical Concurrence

An important aspect of alignment between standards and assessments is whether both address the same content categories. The categorical-concurrence criterion provides a very general indication of alignment if both documents incorporate the same content. *The criterion of categorical concurrence between standards and assessments is met if the same or consistent categories of content appear in both documents.* This criterion was judged by determining

whether the assessment included items measuring content from each strand. The analysis assumed that the assessment had to have at least six items for measuring content from a strand in order for an acceptable level of categorical concurrence to exist between the strand and the assessment. The number of items, six, is based on estimating the number of items that could produce a reasonably reliable subscale for estimating students' mastery of content on that subscale. Of course, many factors have to be considered in determining what a reasonable number is, including the reliability of the subscale, the mean score, and cutoff score for determining mastery. Using a procedure developed by Subkoviak (1988) and assuming that the cutoff score is the mean and that the reliability of one item is .1, it was estimated that six items would produce an agreement coefficient of at least .63. This indicates that about 63% of the group would be consistently classified as masters or nonmasters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score is increased to one standard deviation from the mean to .77 and, with a cutoff score of 1.5 standard deviations from the mean, to .88. Usually states do not report student results by strands or require students to achieve a specified cutoff score on indicators related to a strand. If a state did do this, then the state would seek a higher agreement coefficient than .63. Six items were assumed as a minimum for an assessment measuring content knowledge related to a strand, and as a basis for making some decisions about students' knowledge of that strand. If the mean for six items is 3 and one standard deviation is one item, then a cutoff score set at 4 would produce an agreement coefficient of .77. Any fewer items with a mean of one-half of the items would require a cutoff that would only allow a student to miss one item. This would be a very stringent requirement, considering a reasonable standard error of measurement on the subscale.

Depth-of-Knowledge Consistency

Standards and assessments can be aligned not only on the category of content covered by each, but also on the basis of the complexity of knowledge required by each. *Depth-of-knowledge consistency between standards and assessment indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards.* For consistency to exist between the assessment and the strands, as judged in this analysis, at least 50% of the items corresponding to a strand had to be at or above the depth-of-knowledge level of the corresponding standards: 50%, a conservative cutoff point, is based on the assumption that a minimal passing score for any one strand of 50% or higher would require the student to successfully answer at least some items at or above the depth-of-knowledge level of the corresponding standards. For example, assume an assessment included six items related to one strand and students were required to answer correctly four of those items to be judged proficient—i.e., 67% of the items. If three, 50%, of the six items were at or above the depth-of-knowledge level of the corresponding standards, then for a student to achieve a proficient score would require the student to answer correctly at least one item at or above the depth-of-knowledge level of one standard. Some leeway was used in this analysis on this criterion. If a strand had between 40% and 50% of items at or above the depth-of-knowledge levels of the standards, then it was reported that the criterion was "weakly" met.

Interpreting and assigning depth-of-knowledge levels to both standards within strands and assessment items are essential requirements of alignment analysis. The reading levels are based on Valencia and Wixson (2000, pp. 909-935). These descriptions help to clarify what the different levels represent in reading:

Level 1

Level 1 requires students to receive or recite facts or to use simple skills or abilities. Oral reading that does not include analysis of the text as well as basic comprehension of a text is included. Items require only a shallow understanding of the text presented and often consist of verbatim recall from text, or simple understanding of a single word or phrase. Some examples that represent, but do not constitute all of, Level 1 performance are:

- Support ideas by reference to details in the text.
- Use a dictionary to find the meanings of words.
- Identify figurative language in a reading passage.

Level 2

Level 2 includes the engagement of some mental processing beyond recalling or reproducing a response; it requires both comprehension and subsequent processing of text or portions of text. Inter-sentence analysis or inference is required. Some important concepts are covered but not in a complex way. Standards and items at this level may include words such as summarize, interpret, infer, classify, organize, collect, display, compare, and determine whether fact or opinion. Literal main ideas are stressed. A Level 2 assessment item may require students to apply skills and concepts that are covered in Level 1. Some examples that represent, but do not constitute all of, Level 2 performance are:

- Use context cues to identify the meaning of unfamiliar words.
- Predict a logical outcome based on information in a reading selection.
- Identify and summarize the major events in a narrative.

Level 3

Deep knowledge becomes a greater focus at Level 3. Students are encouraged to go beyond the text; however, they are still required to show understanding of the ideas in the text. Students may be encouraged to explain, generalize, or connect ideas. Standards and items at Level 3 involve reasoning and planning. Students must be able to support their thinking. Items may involve abstract theme identification, inference across an entire passage, or students' application of prior knowledge. Items may also involve more superficial connections between texts. Some examples that represent, but do not constitute all of, Level 3 performance are:

- Determine the author's purpose and describe how it affects the interpretation of a reading selection.
- Summarize information from multiple sources to address a specific topic.
- Analyze and describe the characteristics of various types of literature.

Level 4

Higher-order thinking is central and knowledge is deep at Level 4. The standard or assessment item at this level will probably be an extended activity, with extended time provided for completing it. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require the application of significant conceptual understanding and higher-order thinking. Students take information from at least one passage of a text and are asked to apply this information to a new task. They may also be asked to develop hypotheses and perform complex analyses of the connections among texts. Some examples that represent, but do not constitute all of, Level 4 performance are:

- Analyze and synthesize information from multiple sources.
- Examine and explain alternative perspectives across a variety of sources.

- Describe and illustrate how common themes are found across texts from different cultures.

Range-of-Knowledge Correspondence

For standards and assessments to be aligned, the breadth of knowledge required on both should be comparable. *The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a strand is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment items/activities.* The criterion for correspondence between span of knowledge for a strand and an assessment considers the number of standards within the strand with one related assessment item/activity. Fifty percent of the standards for a strand had to have at least one related assessment item in order for the alignment on this criterion to be judged acceptable. This level is based on the assumption that students' knowledge should be tested on content from over half of the domain of knowledge for a strand. This assumes that each standard for a strand should be given equal weight. Depending on the balance in the distribution of items and the need to have a low number of items related to any one standard, the requirement that assessment items need to be related to more than 50% of the standards for an strand increases the likelihood that students will have to demonstrate knowledge on more than one standard per strand to achieve a minimal passing score. As with the other criteria, a state may choose to make the acceptable level on this criterion more rigorous by requiring an assessment to include items related to a greater number of the standards. However, any restriction on the number of items included on the test will place an upper limit on the number of standards that can be assessed. Range-of-knowledge correspondence is more difficult to attain if the content expectations are partitioned among a greater number of strands and a large number of standards. If 50% or more of the standards for a strand had a corresponding assessment item, then the range-of-knowledge correspondence criterion was met. If between 40% and 50% of the standards for a strand had a corresponding assessment item, the criterion was "weakly" met.

Balance of Representation

In addition to comparable depth and breadth of knowledge, aligned standards and assessments require that knowledge be distributed equally in both. The range-of-knowledge criterion only considers the number of standards within a strand hit (a standard with a corresponding item); it does not take into consideration how the hits (or assessment items/activities) are distributed among these standards. *The balance-of-representation criterion is used to indicate the degree to which one standard is given more emphasis on the assessment than another.* An index is used to judge the distribution of assessment items. This index only considers the standards for a strand that have at least one hit—i.e., one related assessment item per standard. The index is computed by considering the difference in the proportion of standards and the proportion of hits assigned to the standard. An index value of 1 signifies perfect balance and is obtained if the hits (corresponding items) related to a strand are equally distributed among the standards for the given strand. Index values that approach 0 signify that a large proportion of the hits are on only one or two of all of the standards hit. Depending on the number of standards and the number of hits, a unimodal distribution (most items related to one standard and only one item related to each of the remaining standards) has an index value of less than .5. A bimodal distribution has an index value of around .55 or .6. Index values of .7 or higher indicate that items/activities are distributed among all of the standards at least to some degree (e.g., every standard has at least two items) and is used as the acceptable level on this criterion. Index values between .6 and .7 indicate the balance-of-representation criterion has only been "weakly" met.

Source-of-Challenge Criterion

The source-of-challenge criterion is only used to identify items on which the major cognitive demand is inadvertently placed and is other than the targeted reading standard or expectation. Cultural bias or specialized knowledge could be reasons for an item to have a source-of-challenge problem. Such item characteristics may result in some students not answering an assessment item, or answering an assessment item incorrectly, or at a lower level, even though they possess the understanding and skills being assessed.

Findings

Standards

The consensus DOK value for each reading standard for each grade 3-8 and 11 can be found in Appendix A. Table 1 shows the percentages of standards at each DOK level by grade. Reviewers found the distribution of the different DOK levels to vary some across the grades with a general pattern towards a larger proportion of DOK 3 standards with the higher grades. For grade 3, reviewers judged that most of the standards had a DOK level 2 with about the same proportion of the standards with a DOK 1 and a DOK 3. However, reviewers found all eight of the grade 4 standards to have a DOK level 2. Grades 5 and 7 had a majority of standards with a DOK level 2 whereas the standards for each of grades 6 and 8 were evenly divided between those with a DOK level 2 and a DOK level 3. As appropriate, grade 11 had the highest proportion of standards with a DOK level 3. The variation in the proportion of standards by DOK level is different from most state standards that have been analyzed. Generally, the standards increase in the proportion of standards with a DOK level 3 with an increase in grade.

Table 1
Percent of Standards by Depth-of-Knowledge (DOK) Levels for Grades 3-8 and 11 South Dakota Alignment Analysis for Reading

Grade	Total Number of Standards	DOK Level	Number of Standards by Level	Percent within Strand by Level
3	8	1 2 3	1 5 2	12 63 25
4	8	2	8	100
5	8	2 3	6 2	75 25
6	8	2 3	4 4	50 50
7	8	2 3	6 2	75 25
8	8	2 3	4 4	50 50
11	5	2 3	1 4	20 80

If no particular standard is targeted by a given assessment item, reviewers are instructed to code the item at the level of an indicator or strand. This coding to a generic standard sometimes indicates that the item is inappropriate for the grade level. However, if the item is grade-appropriate, then this situation may instead indicate that there is a part of the content not expressly or precisely described in the standards. These items may highlight areas in the standards that should be changed, or made more precise. There were no items coded to generic standards by more than one reviewer in this study. Reviewers were able to match each item to one of the given standards at each grade level. Thus, no item targeted content outside of the reading expectations as defined by South Dakota.

Reviewers' debriefing comments also highlight some ambiguities in the standards. These comments can be found in Appendix D.

Alignment of Curriculum Standards and Assessments

Table 3 displays the number of items and points for each assessment form. In the analysis that follows, multiple-point items are given additional weight for alignment purposes. For example, a 3-point item is counted towards the alignment as 3 identically coded 1-point items. There were no multi-point items on the assessments. The total number of points was the same as the total number of items.

Table 3
Number of Items and Point Value by Grade for South Dakota Assessments, Grades 3-8 and 11 2008

Grade Level	Number of Items	Number of Multi-Point Items	Total Point Value
3	56	0	56
4	56	0	56
5	56	0	56
6	56	0	56
7	56	0	56
8	56	0	56
11	40	0	40

The results of the analysis for each of the four alignment criteria are summarized in Tables 4.1-4.7. More detailed data on each of the criteria are given in Appendix B, in the first three tables. With each table and for each grade, a description of the satisfaction of the alignment criteria for the given grade is provided. The reviewers' debriefing comments provide further detail about the individual reviewers' impressions of the alignment.

In Tables 4.1-4.7, "YES" indicates that an acceptable level was attained between the assessment and the learning goal on the criterion. "WEAK" indicates that the criterion was nearly met, within a margin that could simply be due to error in the system. "NO" indicates that the criterion was not met by a noticeable margin—10% over an acceptable level for Depth-of-Knowledge Consistency, 10% over an acceptable level for Range-of-Knowledge Correspondence, and .1 under an index value of .7 for Balance of Representation.

Grade 3

The alignment between the grade 3 South Dakota reading standards and the assessment was acceptable. Indicators R.1, R.2 and R.4 were fully aligned. However, for Indicator R.3, reviewers found only one item that targeted the one standard related to diversity. One item targeting an indicator is insufficient to judge DOK, range, and balance. For these alignment criteria, Indicator R.3 was considered not tested. In order to attain full alignment with all four indicators for grade 3 at least 5 items would need to be added or changed. These items would need to target Indicator R.3, the one standard under Indicator R.3, with at least of the items with a DOK level 3. Reviewers' notes in the debriefing section (Appendix D) support these findings. One reviewer commented that there were "very few questions related to diverse works, specifically various cultures and time periods". In addition, reviewers also noted an overlap in content between the standards and indicators.

Table 4.1
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 3 Indicators and Assessment for South Dakota Alignment Analysis 2008

Grade 3	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
3.R.1 – Reading Strategies	YES	YES	YES	YES
3.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
3.R.3 – Respond to diverse works	NO (1.0)	NT	NT	NT
3.R.4 – Retrieve, analyze, synthesize.	YES	YES	YES	YES

Grade 4

The alignment between the grade 4 assessment and reading standards was acceptable with only minor alignment issues. Similar to grade 3, Indicators R.1, R.2 and R.4 were fully aligned. Items mapped to these indicators had an appropriate DOK level, range, and balance. Indicator R.3 was fully aligned except for Categorical Concurrence. The assessment did not meet the acceptable level of six items, the acceptable level for Categorical Concurrence used in this analysis.

Table 4.2
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 4 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 4	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
4.R.1 – Reading Strategies	YES	YES	YES	YES
4.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
4.R.3 – Respond to diverse works	NO (4.0)	YES	YES	YES
4.R.4 – Retrieve, analyze, synthesize.	YES	YES	YES	YES

Overall, only two items would need to be replaced or added to have full alignment for grade 4. These items would need to target the standard under Indicator R.3. Reviewers identified a few items with a source of challenge issue—Items 51, 55, and 75. Reviewers felt strongly that the illustrations accompanying Item 51 needed improvement. They found the pictures to be misleading to the point that a student would not be able to answer the question correctly. Reviewers also believed that Item 75 was biased.

Grade 5

The alignment between the grade 5 reading standards and the assessment was acceptable. Reviewers judged Standards R.1, R.2 and R.4 to be fully aligned with the assessments. The Categorical Concurrence, DOK level, range, and balance were all good for these standards. For Indicator R.3 (Respond to Diverse Works) reviewers only found three items and two of these items were below the complexity of the corresponding objectives. The range and balance were acceptable for Indicator R.3.

Table 4.3
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 5 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 5	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
5.R.1 – Reading Strategies	YES	YES	YES	YES
5.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
5.R.3 – Respond to diverse works	NO (3.0)	NO	YES	YES
5.R.4 – Retrieve, analyze, synthesize.	YES	YES	YES	YES

To attain full alignment, only three items would need to be added or replaced so that at least six items target standards under Indicator R.3. These items should be of similar complexity as the corresponding standards. Reviewers found two items in which specialized knowledge could be a factor in student performance. Item 11 and 53 were noted as not being passage specific and therefore prior understanding of the topic was required to answer the question correctly.

Grade 6

The alignment between the reading standards and the assessment needed slight improvement. As with the previous grades, reviewers judged Indicators R.1 and R.2 as fully aligned with the assessment. For Indicator R.3, the Categorical Concurrence criterion was not met. Out of the 56 items on the assessment, reviewers found only three items that mapped to standards related to responding to diverse works, three less than the necessary six items. The DOK levels of these items were similar to the corresponding standards. The DOK Consistency for Indicator R.4, however, was not met—65% of the items were less complex than the related standards. The Categorical Concurrence, range and balance criteria were met for Indicator R.4.

Overall, to attain full alignment at least seven items would need to be changed or added. Three of these items would need to target Indicator R.3. An additional four items that map to standards under Indicator R.4 would need to be at or above the complexity level of the standards.

Table 4.4

Summary of Acceptable Levels on Alignment Criteria for Reading Grade 6 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 6	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
6.R.1 – Reading Strategies	YES	YES	YES	YES
6.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
6.R.3 – Respond to diverse works	NO (3.86)	YES	YES	YES
6.R.4 – Retrieve, analyze, synthesize.	YES	NO	YES	YES

Grade 7

The Grade 7 assessment and standards were acceptably aligned. They were found to be fully aligned with the grade 7 reading standards except for one alignment issue. Each of the alignment criteria were met for Indicators R.1, R.2 and R.4. Categorical Concurrence, Range of Knowledge and Balance of Representation were met for Indicator R.3. The only alignment concern was with the DOK Consistency for Indicator R.3 (Responds to Diverse Works). Reviewers found only one of six items to be at the same level as the corresponding standards under this Indicator.

To have full alignment, at least three items currently targeting content knowledge under Indicator R.3 would need to be replaced with items that have a DOK level that is the same or

higher than the assigned objective. Reviewers' comments support these findings (Appendix D, Table 7.15) where 86% of the reviewers said that the assessment was acceptably aligned.

Table 4.5
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 7 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 7	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
7.R.1 – Reading Strategies	YES	YES	YES	YES
7.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
7.R.3 – Respond to diverse works	YES	NO	YES	YES
7.R.4 – Retrieve, analyze, synthesize.	YES	YES	YES	YES

Grade 8

The grade 8 assessment and the South Dakota Reading Standards were found to be acceptably aligned and nearly fully aligned. Only one alignment issue was found with the Categorical Concurrence for Indicator R.3. The alignment criteria for all other indicators were acceptable. Only one item under Indicator R.3 would need to be added for the assessment to be fully aligned with the grade 8 standards.

Table 4.6
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 8 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 8	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
8.R.1 – Reading Strategies	YES	YES	YES	YES
8.R.2 – Evaluate Literary Devices	YES	YES	YES	YES
8.R.3 – Respond to diverse works	NO (5.14)	YES	YES	YES
8.R.4 – Retrieve, analyze, synthesize.	YES	YES	YES	YES

Grade 11

The results from the alignment analysis between the grade 11 assessment and the grade 11 reading standards indicate that the alignment needed slight improvement. The grade 11 assessment had an acceptable number of items for all of the indicators except for Indicator R.4. For Indicator R.4 (Retrieve, Analyze and Synthesize) reviewers only found four items, two less

than the six necessary to meet the criteria for Categorical Concurrence. The Depth-of-Knowledge Consistency criterion was acceptably met for the two Indicators, but not for Indicators R.2 and R.4. Of the twelve items that mapped to Indicator R.2, only three items had an appropriate DOK level (the same or higher DOK than the assigned standard) and for Indicator R.4, none of the four items matched the complexity of the standards. Standards 11.R.2.1, 11.R.3.1 and 11.R. 4.1 were all coded at a DOK level 3. However, the items corresponding to these standards were mostly coded a DOK level 2. Range and balance was acceptable for all four standards.

Table 4.7
Summary of Acceptable Levels on Alignment Criteria for Reading Grade 11 Standards and Assessment for South Dakota Alignment Analysis 2008

Grade 11	***Alignment Criteria***			
Indicators	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
11.R.1 – Reading Strategies	YES	YES	YES	YES
11.R.2 – Evaluate Literary Devices	YES	NO	YES	YES
11.R.3 – Respond to diverse works	YES	YES	YES	YES
11.R.4 – Retrieve, analyze, synthesize.	NO (4.86)	NO	YES	YES

Overall, to attain full alignment at least six items would need to be changed or added. Two additional items for Indicator R.4 would be needed to have at least six items for this Indicator. These items, along with one item than would replace an existing item, would need to have an appropriate DOK level. To meet the DOK criteria for Standard 2, three items that are more complex—at least the same DOK level as the DOK level of the assigned standard—would need to target standards under this indicator. Reviewers identified some content topics not included on the assessment:

· I would expect items under 11.R.4.1 that looked at faulty logic. I found none that directly fit this, although a couple that might peripherally meet the standard. Generally I felt that few items directly addressed the bullets in any of the standards.

· No items addressed the standard related to "faulty logic techniques in expository text."

Several reviewers further commented that the standards were very broad and “sometimes it was difficult to place items within a specific standard.” Another reviewer similarly noted that, “There are too few standards in my opinion and many times they are written in such a way that the items do not fit very well”.

Source-of-Challenge Issue and Reviewers’ Comments

Reviewers were instructed to document any source-of-challenge issue and to provide any other comments they may have. These comments can be found in Tables (grade).5 and (grade).7 in Appendix C. After coding each grade-level assessment, reviewers also were asked to respond to five debriefing questions. All of the comments made by the reviewers are given in Appendix

D. The notes in general offer an opinion on the item or give an explanation of the reviewers' coding.

Reliability Among Reviewers

The overall intraclass correlation among the reading reviewers' assignment of DOK levels to items was high for seven reviewers for Grades 3-8 and 11 (Table 5). An intraclass correlation value greater than 0.8 generally indicates a high level of agreement among the reviewers. A pairwise comparison is used to determine the degree of reliability of reviewer coding at the objective level and at the learning goal level. The indicator pairwise comparison values, ranging from .74 to .82, are reasonable, but a little lower than for most alignment studies. The standard values are slightly lower, ranging from .66 in grade 3 to .79 in grade 11. Reviewers adjudicated their coding of items to objectives and standards for the assessment. The values for the assessments do not represent independent judgments, but the reviewer agreement after some discussion.

Table 5
Intraclass and Pairwise Comparisons, South Dakota Alignment Analysis for Reading Grades 3-8 and 11 Assessments

Grade	Intraclass Correlation	Pairwise Comparison:	Pairwise: Standard	Pairwise: Indicator
3	.92	.75	.66	.74
4	.87	.78	.72	.80
5	.87	.65	.80	.74
6	.90	.72	.76	.82
7	.86	.74	.72	.76
8	.88	.73	.68	.79
11	.87	.72	.79	.80

Summary

A three- day alignment institute was held September 29, 30, and October 1, 2008 in Sioux Falls, South Dakota to analyze the South Dakota Reading Standards and the 2008 assessments. One group of seven reviewers participated in the institute. Three of the reviewers were from South Dakota and four were from other states. The reviewers included reading education content experts, district reading supervisors, reading teachers, and reading assessment experts. The group analyzed assessments and standards for grades 3-8 and 11.

The alignment for each of the assessments with the South Dakota Reading Standards for grades 3-8 and 11was either acceptable or in need of slight improvement to attain full alignment (see summary table below). The alignment was acceptable for grades 4, 5, 7, and 8 and in need of slight improvement for grades 3, 6, and 11. The main alignment issue was that the assessments did not have a sufficient number of items (N=6) that mapped to each of the four indicators to meet the criteria for categorical concurrence. This was particularly true for Indicator R.3 (Respond to Diverse Works) in grades 3-6 and 8. Reviewers did find an increased number of items that mapped to Indicator R.3 with an increase in grade. Indicator R.4 (Retrieve, Analyze

and Synthesize) in grade 11 also had fewer than six items. All of the grade 7 Indicators had at least six items.

The other alignment issue for a few indicators was that the items did not match the complexity of the standards. One indicator for five of the seven assessments did not have at least 50% of the items at or above the DOK level of the corresponding standards. In particular, items corresponding to Indicator R.2 and R.4 on the grade 11 assessment were low. The range and balance were met for each indicator across all grades.

Overall, from one to seven items on the assessments would need to be added or replaced to have full alignment. Reviewers did find items in need of more work that were indicated by source-of-challenge comments or in their notes.

Summary Table
Percent of South Dakota Reading Standards with Acceptable Level on Each Alignment Criteria for Grade 3-8 and 11

Grade	*Categorical Concurrence* (six or more items)	*Depth-of-Knowledge Consistency* (50% at/above)	*Range of Knowledge* (50% of objectives)	*Balance of Representation* (without possible weakness)	*Estimated Range of Items per to be Added or Replaced for Full Alignment*
3	75	75	75	75	5
4	75	100	100	100	2
5	75	75	100	100	3
6	75	75	100	100	7
7	100	75	100	100	3
8	75	100	100	100	1
11	75	50	100	100	6

Categorical Concurrence >6 items
Depth-of-Knowledge >50% with DOK level the same or higher than level of corresponding Objectives
Range-of-Knowledge >70% of objectives under a standard
Balance of Representation A possible weakness if one or more objectives with a relative large number of items (e.g. five or more than the objective with the next highest number of items)

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Appendix A

South Dakota
Grades 3-8 and 11
Reading
Standards and Group Consensus DOK Values

Table 3.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 3

Level	Description	DOK
3.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
3.R.1.1	Students are able to use decoding and word recognition skills to develop vocabulary and increase fluency when reading unfamiliar text. To meet this standard students may: • use phonetic generalizations (for example: blends such as bl, tr; digraphs such as ch, sh, th, ea, oa; diphthongs such as oy, ow, au; and schwa); • recognize high-frequency and common sight words; • acquire knowledge of functional and content area words (for example: identify, locate, describe); • attend to punctuation, phrasing, and expression when reading.	1
3.R.1.2	Students are able to use comprehension strategies to read and understand unfamiliar words, phrases, and passages. To meet this standard students may: • use comprehension strategies (for example: making and confirming predictions, questioning, visualizing); • use prior knowledge to make connections from text-to-self, text- to-text, and text-to-world; • make predictions before and during reading by using the table of contents, chapter headings, title page, and illustrations.	2
3.R.1.3	Students are able to identify text organizational features and their purpose in fiction and informational text. For example: fiction—table of contents, chapter headings, title page, illustrations, poetic forms; informational—glossary, table of contents, headings, bold print	2
3.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	3
3.R.2.1	Students are able to locate, describe, and use text structures to expand meaning in a selection. To meet this standard students may: • sequence the main events of a story; • locate descriptive words and phrases; • describe the main problem and its solution.	2
3.R.2.2	Students are able to distinguish differences among various literary elements and devices in grade level text. To meet this standard students may: • compare character traits, goals, settings, and plots in and between stories; • describe setting similarities in two different stories by the same author; • compare rhyme patterns in different poems.	3
3.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
3.R.3.1	Students are able to respond to ideas and attitudes expressed in literature by making personal connections. To meet this standard students may: • connect personal traditions and experiences to ideas expressed in literature (for example: holidays, celebrations, time periods).	3
3.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	2
3.R.4.1	Students are able to gather information to research a topic. To meet this standard students may:	2

Table 3.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 3

Level	Description	DOK
	• use text marking and organizing strategies to identify essential ideas (for example: sticky notes, highlighting and guided note-taking, webbing, Kidspiration software); • locate information from multiple sources for reference purposes (for example: almanac, atlas, web sites, maps, CD-ROM, traditional encyclopedia); • use features of books to locate information (for example: table of contents, headings, bold print, index, topic sentences, key words, guide words, illustrations, charts, maps, tables, graphs, diagrams).	
3.R.4.2	Students are able to utilize a set of directions, a model, or diagram in order to complete a project.	2

Table 4.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 4

Level	Description	DOK
4.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
4.R.1.1	Students are able to apply knowledge of complex word patterns to determine meaning of unfamiliar words. To meet this standard students may: • use contractions, syllabication, and words borrowed from another language; • determine word meanings by applying knowledge of root words, prefixes, and suffixes.	2
4.R.1.2	Students are able to apply strategies to construct meaning from grade-level text. To meet this standard students may: • use prior knowledge or context clues to interpret difficult text; • use comprehension strategies (for example: making connections, questioning, visualizing, determining importance of content ideas); • summarize the main message after reading the selection; • determine key ideas and supporting details and record them in a graphic organizer.	2
4.R.1.3	Students are able to use organizational features of fiction and informational text to activate prior knowledge and to make predictions about text. To meet this standard students may: • predict the use of vocabulary in an informational selection by sorting bold-faced words into categories; • use the table of contents, headings, bold print, and captions to make predictions about text; • recompose headings into questions; • make predictions about a story by previewing the table of contents, chapter headings, title page, and illustrations; • use the glossary to check meaning.	2
4.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	2
4.R.2.1	Students are able to identify text structures and the specific text that demonstrates that form of organization. To meet this standard students may: • compare various structures of ideas that are embedded in the organization of text (for example: compare/contrast, problem solving, description, and sequence); • discuss the structure of the various genres (for example: traditional literature including folktales, fairytales, legends; contemporary realistic fiction; historical fiction; fantasy; poetry; non-fiction including biographies and autobiographies; international literature; and informational text).	2
4.R.2.2	Students are able to compare and contrast various literary elements and the use of literary devices. To meet this standard students may: • compare and contrast literary elements (for example: character traits, settings, plots, and themes); • examine text to determine the use of literary devices (for example: alliteration, personification, and imagery).	2
4.R.3	Students are able to interpret and respond to diverse works from various cultures	2

Table 4.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 4

Level	Description	DOK
	and time periods.	
4.R.3.1	Students are able to compare the use of fact and fiction in historical and contemporary realistic fiction. To meet this standard students may: • question and conclude whether literary situations presented are fact or fiction (for example: interviews, books, articles, and online searches).	2
4.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	2
4.R.4.1	Students are able to gather and organize information for study and research purposes. To meet this standard students may: • use text-marking strategies to identify essential ideas (for example: sticky notes, highlighting); • locate information from multiple sources for reference purposes (for example: almanac, atlas, websites, maps, CD-ROM, traditional encyclopedias; magazines such as National Geographic, Ranger Rick); • use parts of books to locate information (for example: table of contents, index); • compare information about one topic found in different selections or texts; • learn and use a form of note taking that is personally effective (for example: webs, lists, Inspiration software, other graphic organizers).	2
4.R.4.2	Students are able to use text features and graphic features to categorize information and to gain meaning from informational materials. For example: topic sentences, key words, diagrams, illustrations, charts, maps, tables, graphs, and diagrams	2

Table 5.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 5

Level	Description	DOK
5.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
5.R.1.1	Students are able to use knowledge of word categories and word parts to determine meaning of unknown words. To meet this standard students may: • decipher the meaning of difficult words by applying knowledge of root words, prefixes, suffixes, affixes, and syllable breaks; • understand word categories (for example: synonyms, homophones, homographs, antonyms, acronyms, abbreviations, compound words, multiple-meaning words).	2
5.R.1.2	Students are able to apply comprehension strategies to construct meaning from literary and content area text. To meet this standard students may: • preview text structure and text features to determine content; • use discussion and questioning to comprehend unfamiliar text; • create mental imagery from text; • use prior knowledge and experiences to predict and infer in unfamiliar text; • determine the importance of key ideas and supporting details, and record them using various graphic organizers; • explain figurative use of words in context (for example: similes, metaphors, personification, idioms, oxymoron).	2
5.R.1.3	Students are able to analyze organizational features to determine important ideas in fiction and informational text. To meet this standard students may: • design graphic organizers and record key ideas and supporting details using table of contents, headings and subheadings, bold print, captions, index, graphs, tables, and charts; • make predictions about story plots, themes, settings, and characters by studying the table of contents, chapter headings, title page, and illustrations.	2
5.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	3
5.R.2.1	Students are able to determine the organizational structure of various texts in order to facilitate comprehension. To meet this standard students may: • analyze various structures of ideas including cause/effect, comparison/contrast, problem solving, description, and sequence (for example: sequential, chronological, spatial); • examine the structure of the various genres (for example: traditional literature such as folktales, fairytales, myths, legends, work songs; contemporary realistic fiction; historical fiction; science fiction and fantasy; poetry; informational text including biographies and autobiographies; international literature).	2
5.R.2.2	Students are able to recognize the importance of literary elements and literary devices, and consider how they affect the message. To meet this standard students may: • describe how character traits, plots, themes, mood, and point of view affect a story; • describe how literary devices affect sensory perceptions of a selection (for example: alliteration, metaphor, simile, personification, imagery, symbolism,	3

Table 5.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 5

Level	Description	DOK
	onomatopoeia).	
5.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
5.R.3.1	Students are able to question and compare literary selections from the perspective of various cultures and time periods. To meet this standard students may: • consider author and time period perspectives when evaluating the authenticity and validity of the work (for example: Civil War—North vs. South perspectives, Revolutionary War—British/Canadian/Colonist perspectives); • consider the author's ethnicity and/or age in relationship to the historical period (for example: Laura Ingalls Wilder); • consider how the selection is influenced by external factors (for example: socio-economic status, environmental issues, prejudicial language, stereotypes).	3
5.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	2
5.R.4.1	Students are able to locate and determine the importance of information for use in study and research. To meet this standard students may: • locate information from multiple sources for reference purposes (for example: almanac, atlas, websites, maps, CD-ROM, encyclopedia); • use parts of books to locate information (for example: index, appendix, pronunciation guide); • compare information about one topic found in different selections or texts; • learn and use meaningful forms of note taking (for example: outlines, webs, note cards, lists, Inspiration software, other graphic organizers); • use text-marking strategies to identify essential ideas.	2
5.R.4.2	Students are able to use information from a variety of formats to make inferences and report conclusions. For example: tables, charts, maps, graphs, diagrams	2

Table 6.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 6

Level	Description	DOK
6.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
6.R.1.1	Students are able to use context to understand words with multiple meanings.	2
6.R.1.2	Students are able to use direct and implied meaning to understand text. To meet this standard students may: • self-monitor and self-correct to understand text; • use prior knowledge and connections to understand new information; • identify main idea and supporting details; • ask questions before, during, and after reading to comprehend text.	2
6.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	3
6.R.2.1	Students are able to use the text structures and patterns in various literary texts to create meaning. To meet this standard students may: • use structural elements of fiction, informational text, drama, and poetry to extend meaning (for example: chronology—beginning, middle, end, flashback; plot structure—exposition, rising action, climax, falling action, resolution; poetry structure—stanzas, rhythm, rhyme, line length; other structures --- cause/effect, problem/solution, comparison/contrast, description); • describe how meaning is conveyed in poetry through word choice, repetition, and sensory words.	2
6.R.2.2	Students are able to describe types of figurative language. To meet this standard students may: • explain how figurative language clarifies meaning of text (for example: simile, personification, and metaphor).	3
6.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
6.R.3.1	Students are able to explain how literature can be used to better understand other time periods and events. To meet this standard students may: • describe how some ancient cultures used myths and legends to explain natural phenomena (for example: Egyptian, Roman, Greek).	3
6.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	3
6.R.4.1	Students are able to use reference sources to retrieve information. To meet this standard students may: • use both print and electronic search strategies to find information.	2
6.R.4.2	Students are able to compare and contrast information on one topic contained in several sources.	3
6.R.4.3	Students are able to determine the quality of material in informational texts. To meet this standard students may: • distinguish fact from opinion; • determine credibility of various sources (for example: National Inquirer vs. USA Today).	3

Table 7.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 7

Level	Description	DOK
7.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
7.R.1.1	Students are able to understand how word choice affects meaning. To meet this standard students may: • differentiate between denotation and connotation.	2
7.R.1.2	Students are able to use inferences to extend meaning beyond literal understanding of text. To meet this standard students may: • give examples from text to support the basis for an inference; • determine the relative importance of details to identify the main idea of a passage.	2
7.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	2
7.R.2.1	Students are able to describe how authors use literary elements to create meaning. To meet this standard students may: • identify and define elements of a short story (for example: setting, characterization, plot, theme, narrator, point of view).	2
7.R.2.2	Students are able to describe how authors use literary devices to create meaning. To meet this standard students may: • show the relevance of foreshadowing, flashback, and symbolism; • identify the sensory details an author uses to create meaning; • identify different forms (structures) of poetry; • determine how narrative, free verse, and ballads are similar/different.	2
7.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
7.R.3.1	Students are able to connect historical and cultural influences in literary selections to construct meaning. To meet this standard students may: • connect literature to geography, history, and culture (for example: newspapers, magazines, biography, autobiography, and young adult literature from various historical eras).	3
7.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	2
7.R.4.1	Students are able to distinguish which reference sources will provide the best information for the assigned task. (For example: encyclopedia, almanac, "Ask Jeeves").	2
7.R.4.2	Students are able to analyze and organize information from various sources. To meet this standard students may: • discriminate important ideas from unimportant ideas while reading; • organize information while reading (for example: questioning, note taking, summarizing, outlining, webbing).	2
7.R.4.3	Students are able to evaluate the accuracy and credibility of information about a topic contained in multiple sources.	3

Table 8.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 8

Level	Description	DOK
8.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
8.R.1.1	Students are able to apply knowledge of word origins and derivations to extend vocabulary development. To meet this standard students may: • apply knowledge of foreign, Greek, and Latin word origins and derivations; • apply knowledge of prefixes, suffixes, and roots to extend vocabulary.	2
8.R.1.2	Students are able to use reading strategies to comprehend the meaning of words and text. To meet this standard students may: • monitor for meaning; • make connections to text; • ask questions to clarify meaning; • determine importance of ideas and details; • make inferences; • connect sensory images to meaning; • synthesize prior knowledge and new information to create new knowledge.	2
8.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	3
8.R.2.1	Students are able to analyze and explain the author's use of literary elements. To meet this standard students may: • analyze characters in a story using supporting evidence from the text (for example: character's traits, motivations, conflicts, and point of view); • describe how setting, character, conflict, and resolution support the overall theme.	3
8.R.2.2	Students are able to describe the effect of the author's use of literary devices. To meet this standard students may: • describe the use of sensory imagery in texts (for example: rhyme scheme, accent patterns, alliteration, assonance, consonance); • describe the use of figurative language in texts (for example: simile, metaphor, idiom, and oxymoron).	2
8.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
8.R.3.1	Students are able to compare/contrast literature from different eras or cultures dealing with similar themes or conflicts. To meet this standard students may: • identify and compare recurring themes across literary works (for example: good vs. evil, loyalty vs. betrayal); • describe ideas and outlooks within a specific period, looking at such features as ideas, customs, and outlooks of a people (for example: views of slavery depicted in pre-Civil War novels, attitudes of those involved in the westward expansion, Native American cultural influences).	3
8.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	3
8.R.4.1	Students are able to determine the appropriate strategy to gather and organize information. To meet this standard students may: • use both primary and secondary sources (for example: primary—interviews,	2

Table 8.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 8

Level	Description	DOK
	diaries, letters, autobiographies; secondary—encyclopedias, biographies, textbooks).	
8.R.4.2	Students are able to evaluate information about a topic gathered from a variety of sources. To meet this standard students may: • describe how the type of informational source influences the accuracy of information provided (for example: newspaper, magazine, book chapter).	3
8.R.4.3	Students are able to combine new information with existing knowledge to form interpretations. To meet this standard students may: • compare background knowledge about a current topic with information (for example: AIDs, STDs); • compare information found in a variety of sources to reach new understanding.	3

Table 11.14
Group Consensus
South Dakota Reading Content Standards, Language Arts, Grade 11

Level	Description	DOK
11.R.1	Students are able to apply various reading strategies to comprehend and interpret text.	2
11.R.1.1	Students are able to use various reading and study strategies to increase comprehension. To meet this standard students may: • infer meaning in a variety of text (for example: advertisements, editorials, labels, stereotypes); • visualizing characters through dialect and diction (for example: Mark Twain, Emily Dickinson, John Steinbeck).	2
11.R.2	Students are able to evaluate text structures, literary elements, and literary devices within various genres to develop interpretations and form responses.	3
11.R.2.1	Students are able to analyze and explain the relationships among elements of literature (characterization, setting, plot, theme, conflict). To meet this standard students may: • explain the influence of point of view on theme (for example: autobiography and biography about the same person, A Gathering of Old Men, A Separate Peace, To Kill a Mockingbird, Black Elk Speaks); • explain how characterization drives plot (for example: Nathaniel Hawthorne, F. Scott Fitzgerald, William Shakespeare, Kate Chopin).	3
11.R.2.2	Students are able to analyze and explain literary devices within text. To meet this standard students may: • explain how the use of sound devices such assonance, consonance, alliteration, and onomatopoeia support the subject and mood (for example: Edgar Allan Poe, Robert Frost, Mary Oliver, Billy Collins); • recognize the impact of play on words (for example: William Shakespeare, Ogden Nash, Shel Silverstein, Jerry Seinfeld).	3
11.R.3	Students are able to interpret and respond to diverse works from various cultures and time periods.	3
11.R.3.1	Students are able to analyze and explain the influence of cultural and historical context on the form, style, and point of view of a written work. To meet this standard students may: • explain the conditions that fostered or prevented the emergence of specific literary forms (for example: poetry, fiction, political addresses, journals); • illustrate how a literary movement developed as a result of the influence of a previous movement (for example: classical style used for the Revolutionary period, Romanticism, Realism).	3
11.R.4	Students are able to retrieve, analyze, synthesize, and evaluate a variety of informational texts.	3
11.R.4.1	Students are able to examine the effect of faulty logic techniques in expository text. To meet this standard students may: • critique advertisements in various forms of media for unsupported statements (for example: political campaign ads); • critique editorials, articles, and headlines for bias (for example: newspapers, magazines, journals, billboards, bumper stickers, t-shirts, hats, commercials, and propaganda in expository text).	3

Appendix B

Data Analysis Tables

South Dakota
Grades 3-8 and 11
Reading
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.1

Standards #	Number of standards plus one for a generic standard for each standard.
Standards #	Average number of standards for reviewers. If the number is greater than the actual number in the standard, then at least one reviewer coded an item for the standard/standard but did not find any standard in the standard that corresponded to the item.
Level	The Depth-of-Knowledge level coded by the reviewers for the standards for each standard.
# of standards by Level	The number of standards coded at each level
% w/in std by Level	The percent of standards coded at each level
Hits Mean & SD	Mean and standard deviation number of items reviewers coded as corresponding to standard. The total is the total number of coded hits.
Cat. Conc. Accept.	"Yes" indicates that the standard met the acceptable level for criterion. "Yes" if mean is six or more. "Weak" if mean is five to six. "No" if mean is less than five.

Tables *grade*.2

	First five columns repeat columns from Table 1.
Level of Item w.r.t. Stand	Mean percent and standard deviation of items coded as "under" the Depth-of-Knowledge level of the corresponding standard, as "at" (the same) the Depth-of-Knowledge level of the corresponding standard, and as "above" the Depth-of-Knowledge level of the corresponding standard.
Depth-of-Know. Consistency Accept.	"Yes" indicates that 50% or more of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "Weak" indicates that 40% to 50% of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "No" indicates that less than 40% items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards.

Tables *grade*.3

First five columns repeat columns from Table 1 and 2.

Range of Standards

Standards Hit — Average number and standard deviation of the standards hit coded by reviewers.

% of Total — Average percent and standard deviation of the total standards that had at least one item coded.

Range of Know.

Accept. — "Yes" indicates that 50% or more of the standards had at least one coded standard.
"Weak" indicates that 40% to 50% of the standards had at least one coded standard.
"No" indicates that 40% or less of the standards had at least one coded standard.

Balance Index

% Hits in Std/Ttl Hits — Average and standard deviation of the percent of the items hit for a standard of total number of hits (see total under the Hits column).

Index — Average and standard deviation of the Balance Index.

Note: BALANCE INDEX $1 - (\sum_{k=1} \left| 1/(O) - I_{(k)}/(H) \right|)/2$

Where O = Total number of standards hit for the standard
$I_{(k)}$ = Number of items hit corresponding to standard (k)
H = Total number of items hit for the standard

Bal. of Rep Accept. — "Yes" indicates that the Balance Index was .7 or above (items evenly distributed among standards).
"Weak" indicates that the Balance Index was .6 to .7 (a high percentage of items coded as corresponding to two or three standards).
"No" indicates that the Balance Index was .6 or less (a high percentage of items coded as corresponding to one standard.)

Tables *grade*.4

Summary if standard met the acceptable level for the four criteria by each standard.

Tables *grade*.6

The DOK value for each assessment item given by each reviewer. The intraclass correlation for the group of reviewers is given on the last row.

Tables *grade*.8

The DOK level and standard code assigned by each reviewer for each item.

Tables *grade*.9

This list for each item all of the standards coded by the group of reviewers as corresponding to the item. Repeat of a standard indicates the number of reviewers who coded that standard as corresponding to the item.

Tables *grade*.10

This lists for each standard all of the items coded by the group of reviewers as corresponding to the standard. Repeat of an item indicates the number of reviewers who coded the item as corresponding to the standard.

Tables *grade*.12

This table summarizes the number of reviewers who coded an item as corresponding to a standard. It contains the same information as in Table 10.

Tables *grade*.13

This table can be used to compare the DOK level of a standard to the average DOK level of the items reviewers assigned to the standard. This table is helpful to identify items with a lower DOK level that should be replaced by an item with a higher DOK level to improve the Depth-of-Knowledge Consistency.

Table 3.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 3
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
3.R.1 - Students are able to apply various reading strateg ...	3	3	1 2	1 2	33 66	28.43	3.92	YES
3.R.2 - Students are able to evaluate text structures, lit ...	2	2	2 3	1 1	50 50	18	2.83	YES
3.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	1	0	NO
3.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	2	2	100	8.57	2.19	YES
Total	8	8	1 2 3	1 5 2	12 62 25	56	0	

Table 3.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 3
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
3.R.1 - Students are able to apply various reading strateg ...	3	3	28.43	3.92	16	212	80	19	4	6	YES
3.R.2 - Students are able to evaluate text structures, lit ...	2	2	18	2.83	46	621	52	33	2	6	YES
3.R.3 - Students are able to interpret and respond to dive ...	1	1	1	0	71	45	29	45	0	0	NO
3.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	8.57	2.19	13	79	85	18	2	4	YES
Total	8	8	56	0	29	33	69	33	2	5	

Table 3.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 3
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
3.R.1 - Students are able to apply various reading strateg ...	3	3	28.43	3.92	3	0	100	0	YES	51	7	0.81	0.07	YES
3.R.2 - Students are able to evaluate text structures, lit ...	2	2	18	2.83	2	0	100	0	YES	32	5	0.86	0.08	YES
3.R.3 - Students are able to interpret and respond to dive ...	1	1	1	0	1	0	100	0	YES	2	0	1	0	YES
3.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	8.57	2.19	1.86	0.35	93	17	YES	15	4	0.84	0.09	YES
Total	8	8	56	0	1.96	0.73	98	9		25	19	0.88	0.10	

Table 3.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 3
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
3.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
3.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
3.R.3 - Students are able to interpret and respond to dive ...	NO	NO	YES	YES
3.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	YES	YES	YES

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 3

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
11	2	2	2	2	2	2	2
12	1	1	1	1	1	1	1
13	2	2	2	2	2	2	2
14	2	2	2	2	2	2	2
15	2	2	2	2	2	2	2
16	2	1	1	2	2	2	2
17	1	1	1	1	1	1	1
25	1	1	1	1	2	1	1
26	2	1	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	1	2	1	2
29	2	2	2	2	3	3	2
30	3	2	3	3	3	3	3
31	2	2	2	2	2	2	1
32	3	2	2	3	2	2	3
33	2	2	2	2	2	2	2
34	2	2	2	1	2	2	2
35	2	3	1	2	2	2	2
36	3	2	3	3	3	3	3
37	2	2	2	3	2	2	2
38	2	2	2	2	2	2	1
39	2	2	2	3	3	2	2
50	2	2	2	2	2	2	1
51	2	2	2	2	2	1	2
52	2	2	2	2	2	2	2
53	1	2	2	2	2	2	2
54	2	2	2	2	2	2	2
55	3	2	2	3	2	3	2
56	2	2	2	2	2	1	2
57	2	2	2	1	2	2	2
58	2	3	2	2	2	3	3
59	2	2	2	2	2	2	1
60	2	2	2	1	1	1	2
61	2	2	2	2	2	2	3
62	2	3	2	2	2	2	3
63	2	1	2	2	1	1	2
64	2	2	2	2	2	2	2
65	2	2	2	1	2	1	2
66	2	2	2	2	2	1	2
67	2	2	2	2	2	1	2
68	2	2	2	2	2	2	3
69	2	2	2	3	3	3	3
70	2	2	2	2	2	2	2

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 3

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
71	2	2	2	2	2	1	2
72	2	2	2	2	2	2	3
73	2	2	2	1	2	2	2
74	2	2	1	1	2	2	2
75	2	2	2	2	2	3	2
76	2	2	2	2	2	2	3

Intraclass Correlation: 0.9193
Pairwise Comparison: 0.7526

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 3

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.3	1	3.R.1.1
2	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
3	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
4	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
5	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
6	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
7	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1	1	3.R.1.1
11	2	3.R.4.2	2	3.R.1.2	2	3.R.4.2	2	3.R.4.2	2	3.R.1.2	2	3.R.4.2	2	3.R.1.2
12	1	3.R.1.3	1	3.R.1.3	1	3.R.1.3	1	3.R.1.3	1	3.R.1.3	1	3.R.1.3	1	3.R.1.3
13	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2
14	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.2.1	2	3.R.1.2
15	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2
16	2	3.R.4.2	1	3.R.1.2	1	3.R.4.2	2	3.R.4.2	2	3.R.4.2	2	3.R.2.1	2	3.R.4.2
17	1	3.R.4.2	1	3.R.1.2	1	3.R.1.2	1	3.R.1.2	1	3.R.4.2	1	3.R.4.2	1	3.R.2.1
25	1	3.R.1.2	1	3.R.1.2	1	3.R.1.2	1	3.R.1.2	2	3.R.1.2	1	3.R.1.2	1	3.R.1.2
26	2	3.R.4.1	1	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.1.2	2	3.R.4.1
27	2	3.R.1.2	2	3.R.1.2	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.1.2	2	3.R.1.2
28	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	1	3.R.2.1	2	3.R.1.2	1	3.R.1.2	2	3.R.2.1
29	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	3	3.R.2.2	3	3.R.2.2	2	3.R.1.2
30	3	3.R.2.1	2	3.R.2.2	3	3.R.2.2	3	3.R.1.2	3	3.R.2.2	3	3.R.2.2	3	3.R.2.1
31	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.1.2	1	3.R.1.2
32	3	3.R.1.2	2	3.R.2.2	2	3.R.2.2	3	3.R.1.2	2	3.R.1.2	2	3.R.1.2	3	3.R.1.2
33	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1
34	2	3.R.2.2	2	3.R.2.1	2	3.R.2.2	1	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.1.3
35	2	3.R.1.2	3	3.R.1.2	1	3.R.2.2	2	3.R.2.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2
36	3	3.R.2.2	2	3.R.2.2	3	3.R.2.2	3	3.R.2.2	3	3.R.2.2	3	3.R.1.2	3	3.R.2.2
37	2	3.R.2.2	2	3.R.1.3	2	3.R.2.2	3	3.R.1.3	2	3.R.2.1	2	3.R.1.3	2	3.R.1.3
38	2	3.R.2.2	2	3.R.1.2	2	3.R.2.2	2	3.R.2.2	2	3.R.1.2	2	3.R.1.2	1	3.R.1.2
39	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	3	3.R.2.2	3	3.R.2.2	2	3.R.1.2	2	3.R.2.2
50	2	3.R.1.2	2	3.R.2.1	2	3.R.1.2	2	3.R.2.1	2	3.R.1.2	2	3.R.1.2	1	3.R.1.2
51	2	3.R.2.2	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	1	3.R.1.2	2	3.R.2.1
52	2	3.R.2.2	2	3.R.2.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2
53	1	3.R.1.3	2	3.R.1.3	2	3.R.1.3	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2
54	2	3.R.1.3	2	3.R.1.3	2	3.R.1.2	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3
55	3	3.R.2.2	2	3.R.1.2	2	3.R.1.2	3	3.R.2.2	2	3.R.1.2	3	3.R.1.2	2	3.R.1.2
56	2	3.R.1.2	2	3.R.2.1	2	3.R.1.2	2	3.R.1.2	2	3.R.1.2	1	3.R.2.2	2	3.R.1.2
57	2	3.R.1.2	2	3.R.4.1	2	3.R.4.1	1	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1
58	2	3.R.2.2	3	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	3	3.R.2.2	3	3.R.2.2
59	2	3.R.2.1	2	3.R.2.1	2	3.R.2.2	2	3.R.2.1	2	3.R.2.1	2	3.R.2.2	1	3.R.1.2

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 3

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	1	3.R.2.2	1	3.R.2.2	1	3.R.1.2	2	3.R.1.2
61	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	3	3.R.2.2
62	2	3.R.3.1	3	3.R.3.1	2	3.R.3.1	2	3.R.3.1	2	3.R.3.1	2	3.R.3.1	3	3.R.3.1
63	2	3.R.4.1	1	3.R.4.1	2	3.R.4.1	2	3.R.4.1	1	3.R.4.1	1	3.R.2.1	2	3.R.4.1
64	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.2	2	3.R.4.1	2	3.R.1.3	2	3.R.4.2
65	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3	1	3.R.1.3	2	3.R.1.3	1	3.R.1.2	2	3.R.4.2
66	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3	2	3.R.1.3	1	3.R.1.3	2	3.R.1.3
67	2	3.R.1.3	2	3.R.1.3	2	3.R.4.1	2	3.R.1.3	2	3.R.1.3	1	3.R.1.3	2	3.R.1.3
68	2	3.R.4.1	2	3.R.2.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.2.1	3	3.R.4.1
69	2	3.R.2.2	2	3.R.2.2	2	3.R.1.2	3	3.R.2.2	3	3.R.2.2	3	3.R.2.2	3	3.R.2.2
70	2	3.R.1.2	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1	2	3.R.4.1
71	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.1	2	3.R.2.2	1	3.R.2.2	2	3.R.2.1
72	2	3.R.2.1	2	3.R.2.2	2	3.R.2.2	2	3.R.2.2	2	3.R.2.1	2	3.R.2.2	3	3.R.2.2
73	2	3.R.2.1	2	3.R.1.2	2	3.R.2.1	1	3.R.2.1	2	3.R.2.1	2	3.R.1.2	2	3.R.2.1
74	2	3.R.1.3	2	3.R.1.3	1	3.R.1.3	1	3.R.1.3	2	3.R.4.2	2	3.R.1.2	2	3.R.1.3
75	2	3.R.1.2	2	3.R.1.2	2	3.R.2.2	2	3.R.2.1	2	3.R.1.2	3	3.R.1.2	2	3.R.1.2
76	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	2	3.R.2.1	3	3.R.2.2

Objective Pairwise Comparison: 0.665
Standard Pairwise Comparison: 0.7483

Table 3.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 3

Low		Medium		High
0		5.157895		7

1 2104849	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.3
2 2104850	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
3 2104851	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
4 2104852	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
5 2104855	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
6 2104856	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
7 2104857	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1	3.R.1.1
11 3542168	3.R.1.2	3.R.1.2	3.R.1.2	3.R.4.2	3.R.4.2	3.R.4.2	3.R.4.2
12 3541641	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3
13 2104910	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2
14 2104911	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1
15 2104912	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2
16 3542172	3.R.1.2	3.R.2.1	3.R.4.2	3.R.4.2	3.R.4.2	3.R.4.2	3.R.4.2
17 3304903	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1	3.R.4.2	3.R.4.2	3.R.4.2
25 2104914	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2
26 2104916	3.R.1.2	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
27 2104917	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.4.1	3.R.4.1	3.R.4.1
28 2104918	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.1
29 3542220	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
30 2177708	3.R.1.2	3.R.2.1	3.R.2.1	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
31 2177709	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1
32 3316563	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2
33 2177715	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
34 3305012	3.R.1.3	3.R.2.1	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
35 3542219	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2
36 3542225	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
37 2104937	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.2.1	3.R.2.2	3.R.2.2
38 3542152	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2
39 3557257	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
50 2104925	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.1
51 2104926	3.R.1.2	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.2
52 3542111	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2
53 3542212	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.3	3.R.1.3	3.R.1.3
54 2104951	3.R.1.2	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3
55 3542229	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2
56 3557259	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.2
57 2177719	3.R.1.2	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
58 3316528	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
59 2177718	3.R.1.2	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.2	3.R.2.2
60 3542156	3.R.1.2	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2

Table 3.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 3

61 3316556	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
62 2177734	3.R.3.1	3.R.3.1	3.R.3.1	3.R.3.1	3.R.3.1	3.R.3.1	3.R.3.1
63 3304897	3.R.2.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
64 3304898	3.R.1.3	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.2	3.R.4.2
65 3542091	3.R.1.2	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.4.2
66 3557255	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3
67 3542107	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.4.1
68 3304906	3.R.2.1	3.R.2.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
69 2177750	3.R.1.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
70 2177751	3.R.1.2	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1	3.R.4.1
71 2177726	3.R.2.1	3.R.2.1	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
72 2177729	3.R.2.1	3.R.2.1	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2	3.R.2.2
73 2177731	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1
74 2177732	3.R.1.2	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.1.3	3.R.4.2
75 2104955	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.1.2	3.R.2.1	3.R.2.2
76 2104959	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.1	3.R.2.2

Table 3.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 3

Low		Medium		High
0		30.15385		105

3.R.1																				
3.R.1.1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3
	4	4	4	4	4	4	4	5	5	5	5	5	5	5	6	6	6	6	6	
	6	6	7	7	7	7	7	7	7											
3.R.1.2	11	11	11	13	13	13	13	13	13	13	14	14	14	14	14	14	15	15	15	15
	15	15	15	16	17	17	17	25	25	25	25	25	25	25	26	27	27	27	27	
	28	28	28	28	28	29	30	31	31	32	32	32	32	32	35	35	35	35	35	
	36	38	38	38	38	39	50	50	50	50	50	51	52	52	52	52	52	53	53	
	53	53	54	55	55	55	55	55	56	56	56	56	56	57	59	60	60	65	69	
	70	73	73	74	75	75	75	75	75											
3.R.1.3	1	12	12	12	12	12	12	12	34	37	37	37	37	53	53	53	54	54	54	54
	54	54	64	65	65	65	65	65	66	66	66	66	66	66	66	67	67	67	67	
	67	67	74	74	74	74	74													
3.R.2																				
3.R.2.1	14	16	17	28	28	30	30	31	31	31	31	31	34	37	50	50	51	51	51	51
	51	56	59	59	59	59	63	68	68	71	71	72	72	73	73	73	73	73	75	
	76	76	76	76	76	76														
3.R.2.2	29	29	29	29	29	29	30	30	30	30	32	32	34	34	34	34	34	35	35	36
	36	36	36	36	36	37	37	38	38	38	39	39	39	39	39	39	51	52	52	
	55	55	56	58	58	58	58	58	58	58	59	59	60	60	60	60	60	61	61	
	61	61	61	61	61	69	69	69	69	69	69	71	71	71	71	71	72	72	72	
	72	72	75	76																
3.R.3																				

Table 3.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 3

3.R.3.1	62	62	62	62	62	62	62													
3.R.4																				
3.R.4.1	26	26	26	26	26	26	27	27	27	33	33	33	33	33	33	33	57	57	57	57
	57	57	63	63	63	63	63	63	64	64	64	64	67	68	68	68	68	68	70	
	70	70	70	70	70															
3.R.4.2	11	11	11	11	16	16	16	16	16	17	17	17	64	64	65	74				

Table 3.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 3

Low		Medium		High
1		3		7

3.R.1													
3.R.1.1	1:6	2:7	3:7	4:7	5:7	6:7	7:7						
3.R.1.2	11:3	13:7	14:6	15:7	16:1	17:3	25:7	26:1	27:4	28:5	29:1	30:1	31:2
	32:5	35:5	36:1	38:4	39:1	50:5	51:1	52:5	53:4	54:1	55:5	56:5	57:1
	59:1	60:2	65:1	69:1	70:1	73:2	74:1	75:5					
3.R.1.3	1:1	12:7	34:1	37:4	53:3	54:6	64:1	65:5	66:7	67:6	74:5		
3.R.2													
3.R.2.1	14:1	16:1	17:1	28:2	30:2	31:5	34:1	37:1	50:2	51:5	56:1	59:4	63:1
	68:2	71:2	72:2	73:5	75:1	76:6							
3.R.2.2	29:6	30:4	32:2	34:5	35:2	36:6	37:2	38:3	39:6	51:1	52:2	55:2	56:1
	58:7	59:2	60:5	61:7	69:6	71:5	72:5	75:1	76:1				
3.R.3													
3.R.3.1	62:7												
3.R.4													
3.R.4.1	26:6	27:3	33:7	57:6	63:6	64:4	67:1	68:5	70:6				
3.R.4.2	11:4	16:5	17:3	64:2	65:1	74:1							

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 3

Low		Medium		High
1		3		7

1 2104849	3.R.1.1:6	3.R.1.3:1	
2 2104850	3.R.1.1:7		
3 2104851	3.R.1.1:7		
4 2104852	3.R.1.1:7		
5 2104855	3.R.1.1:7		
6 2104856	3.R.1.1:7		
7 2104857	3.R.1.1:7		
11 3542168	3.R.1.2:3	3.R.4.2:4	
12 3541641	3.R.1.3:7		
13 2104910	3.R.1.2:7		
14 2104911	3.R.1.2:6	3.R.2.1:1	
15 2104912	3.R.1.2:7		
16 3542172	3.R.1.2:1	3.R.2.1:1	3.R.4.2:5
17 3304903	3.R.1.2:3	3.R.2.1:1	3.R.4.2:3
25 2104914	3.R.1.2:7		
26 2104916	3.R.1.2:1	3.R.4.1:6	
27 2104917	3.R.1.2:4	3.R.4.1:3	
28 2104918	3.R.1.2:5	3.R.2.1:2	
29 3542220	3.R.1.2:1	3.R.2.2:6	
30 2177708	3.R.1.2:1	3.R.2.1:2	3.R.2.2:4
31 2177709	3.R.1.2:2	3.R.2.1:5	
32 3316563	3.R.1.2:5	3.R.2.2:2	
33 2177715	3.R.4.1:7		
34 3305012	3.R.1.3:1	3.R.2.1:1	3.R.2.2:5
35 3542219	3.R.1.2:5	3.R.2.2:2	
36 3542225	3.R.1.2:1	3.R.2.2:6	
37 2104937	3.R.1.3:4	3.R.2.1:1	3.R.2.2:2
38 3542152	3.R.1.2:4	3.R.2.2:3	
39 3557257	3.R.1.2:1	3.R.2.2:6	
50 2104925	3.R.1.2:5	3.R.2.1:2	
51 2104926	3.R.1.2:1	3.R.2.1:5	3.R.2.2:1
52 3542111	3.R.1.2:5	3.R.2.2:2	
53 3542212	3.R.1.2:4	3.R.1.3:3	
54 2104951	3.R.1.2:1	3.R.1.3:6	
55 3542229	3.R.1.2:5	3.R.2.2:2	
56 3557259	3.R.1.2:5	3.R.2.1:1	3.R.2.2:1
57 2177719	3.R.1.2:1	3.R.4.1:6	
58 3316528	3.R.2.2:7		
59 2177718	3.R.1.2:1	3.R.2.1:4	3.R.2.2:2
60 3542156	3.R.1.2:2	3.R.2.2:5	

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 3

61 3316556	3.R.2.2:7		
62 2177734	3.R.3.1:7		
63 3304897	3.R.2.1:1	3.R.4.1:6	
64 3304898	3.R.1.3:1	3.R.4.1:4	3.R.4.2:2
65 3542091	3.R.1.2:1	3.R.1.3:5	3.R.4.2:1
66 3557255	3.R.1.3:7		
67 3542107	3.R.1.3:6	3.R.4.1:1	
68 3304906	3.R.2.1:2	3.R.4.1:5	
69 2177750	3.R.1.2:1	3.R.2.2:6	
70 2177751	3.R.1.2:1	3.R.4.1:6	
71 2177726	3.R.2.1:2	3.R.2.2:5	
72 2177729	3.R.2.1:2	3.R.2.2:5	
73 2177731	3.R.1.2:2	3.R.2.1:5	
74 2177732	3.R.1.2:1	3.R.1.3:5	3.R.4.2:1
75 2104955	3.R.1.2:5	3.R.2.1:1	3.R.2.2:1
76 2104959	3.R.2.1:6	3.R.2.2:1	

Table 3.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Reading 2008 Grade 3

Low DOK		Matched DOK		High DOK
1		3		7

3.R.1 [2]:													
3.R.1.1 [1]:	1:6[1]	2:7[1]	3:7[1]	4:7[1]	5:7[1]	6:7[1]	7:7[1]						
3.R.1.2 [2]:	11:3 [2]	13:7 [2]	14:6 [2]	15:7 [2]	16:1 [1]	17:3 [1]	25:7 [1.14]	26:1 [2]	27:4 [2]	28:5 [1.8]	29:1 [2]	30:1 [3]	31:2 [1.5]
	32:5 [2.6]	35:5 [2.2]	36:1 [3]	38:4 [1.75]	39:1 [2]	50:5 [1.8]	51:1 [1]	52:5 [2]	53:4 [2]	54:1 [2]	55:5 [2.2]	56:5 [2]	57:1 [2]
	59:1 [1]	60:2 [1.5]	65:1 [1]	69:1 [2]	70:1 [2]	73:2 [2]	74:1 [2]	75:5 [2.2]					
3.R.1.3 [2]:	1:1[1]	12:7 [1]	34:1 [2]	37:4 [2.25]	53:3 [1.67]	54:6 [2]	64:1 [2]	65:5 [1.8]	66:7 [1.86]	67:6 [1.83]	74:5 [1.6]		
3.R.2 [3]:													
3.R.2.1 [2]:	14:1 [2]	16:1 [2]	17:1 [1]	28:2 [1.5]	30:2 [3]	31:5 [2]	34:1 [2]	37:1 [2]	50:2 [2]	51:5 [2]	56:1 [2]	59:4 [2]	63:1 [1]
	68:2 [2]	71:2 [2]	72:2 [2]	73:5 [1.8]	75:1 [2]	76:6 [2]							
3.R.2.2 [3]:	29:6 [2.33]	30:4 [2.75]	32:2 [2]	34:5 [1.8]	35:2 [1.5]	36:6 [2.83]	37:2 [2]	38:3 [2]	39:6 [2.33]	51:1 [2]	52:2 [2]	55:2 [3]	56:1 [1]
	58:7 [2.43]	59:2 [2]	60:5 [1.6]	61:7 [2.14]	69:6 [2.67]	71:5 [1.8]	72:5 [2.2]	75:1 [2]	76:1 [3]				
3.R.3 [3]:													
3.R.3.1 [3]:	62:7 [2.29]												
3.R.4 [2]:													

Table 3.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Reading 2008 Grade 3

3.R.4.1 [2]:	26:6 [1.83]	27:3 [2]	33:7 [2]	57:6 [1.83]	63:6 [1.67]	64:4 [2]	67:1 [2]	68:5 [2.2]	70:6 [2]
3.R.4.2 [2]:	11:4 [2]	16:5 [1.8]	17:3 [1]	64:2 [2]	65:1 [2]	74:1 [2]			

Table 4.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 4
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
4.R.1 - Students are able to apply various reading strateg ...	3	3	2	3	100	30.14	2.36	YES
4.R.2 - Students are able to evaluate text structures, lit ...	2	2	2	2	100	15.86	2.03	YES
4.R.3 - Students are able to interpret and respond to dive ...	1	1	2	1	100	4	1.51	NO
4.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	2	2	100	6	2.33	YES
Total	8	8	2	8	100	56	0	

Table 4.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 4
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
4.R.1 - Students are able to apply various reading strateg ...	3	3	30.14	2.36	42	423	56	28	2	4	YES
4.R.2 - Students are able to evaluate text structures, lit ...	2	2	15.86	2.03	11	112	89	9	0	0	YES
4.R.3 - Students are able to interpret and respond to dive ...	1	1	4	1.51	18	120	77	18	5	8	YES
4.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	6	2.33	15	101	85	17	0	0	YES
Total	8	8	56	0	27	27	72	27	1	4	

Table 4.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 4
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
4.R.1 - Students are able to apply various reading strateg ...	3	3	30.14	2.36	3	0	100	0	YES	54	4	0.88	0.06	YES
4.R.2 - Students are able to evaluate text structures, lit ...	2	2	15.86	2.03	2	0	100	0	YES	28	4	0.88	0.07	YES
4.R.3 - Students are able to interpret and respond to dive ...	1	1	4	1.51	1	0	100	0	YES	7	3	1	0	YES
4.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	6	2.33	1.29	0.45	64	23	YES	11	4	0.97	0.06	YES
Total	8	8	56	0	1.82	0.80	91	19		25	19	0.93	0.08	

Table 4.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 4
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
4.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
4.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
4.R.3 - Students are able to interpret and respond to dive ...	NO	YES	YES	YES
4.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	YES	YES	YES

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 4

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	2	1	1	1	1	1
2	1	2	1	1	1	1	1
3	1	2	1	1	1	1	1
4	1	2	1	1	1	1	1
7	1	1	1	1	1	1	1
8	2	2	2	2	2	2	2
9	2	2	2	2	2	2	2
10	2	2	2	2	2	2	2
11	1	2	1	1	1	2	2
12	2	2	2	2	2	2	2
23	2	2	2	2	2	2	1
24	2	2	2	2	2	2	2
25	2	2	2	1	2	2	2
26	2	3	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	1	2	2	2
29	1	1	1	1	1	1	1
30	2	2	2	2	2	1	2
31	1	1	1	1	1	2	1
32	1	1	1	1	1	1	1
33	2	2	2	2	1	1	2
34	2	2	1	2	2	2	1
35	2	2	2	2	2	2	2
36	2	1	2	2	2	2	1
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	2
39	1	1	1	1	1	1	1
40	2	2	2	1	1	2	2
41	2	2	1	2	2	2	2
42	2	2	2	1	2	2	2
51	2	1	2	2	2	2	2
52	2	2	2	1	2	2	2
53	1	1	1	1	1	3	2
54	2	2	2	2	2	2	2
55	1	2	1	2	1	1	1
56	2	2	1	2	2	2	2
57	3	3	1	2	3	3	3
58	2	1	1	1	2	2	2
59	2	2	2	2	1	2	2
60	2	1	1	1	2	1	2
61	2	2	2	2	2	2	2
62	2	2	1	1	2	2	2
63	2	2	2	2	2	2	2
64	2	2	2	2	2	2	2
65	1	2	1	2	1	2	2
66	2	2	2	2	2	2	2
67	2	2	2	2	2	2	2
68	2	2	1	2	2	2	2
69	2	2	1	2	1	2	2

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 4

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
70	2	2	2	2	2	2	2
71	2	2	2	2	2	2	2
72	2	2	2	2	1	2	2
73	2	2	2	2	2	2	2
74	2	2	2	2	2	2	2
75	2	2	2	2	2	2	2
76	1	1	1	2	1	1	2

Intraclass Correlation: 0.8713
Pairwise Comparison: 0.7806

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 4

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
2	1	4.R.1.2	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
3	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
4	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
7	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3
8	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2
9	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1
10	2	4.R.2.1	2	4.R.2.1	2	4.R.2.2	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1
11	1	4.R.3.1	2	4.R.3.1	1	4.R.3.1	1	4.R.3.1	1	4.R.3.1	2	4.R.3.1	2	4.R.3.1
12	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2
23	2	4.R.1.1	2	4.R.1.2	2	4.R.1.1	2	4.R.1.1	2	4.R.1.2	2	4.R.1.2	1	4.R.1.1
24	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.4.1
25	2	4.R.4.2	2	4.R.1.2	2	4.R.1.2	1	4.R.1.2	2	4.R.2.1	2	4.R.1.3	2	4.R.1.2
26	2	4.R.4.1	3	4.R.1.2	2	4.R.4.1	2	4.R.1.3	2	4.R.4.1	2	4.R.4.1	2	4.R.1.3
27	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1
28	2	4.R.1.3	2	4.R.1.2	2	4.R.1.3	1	4.R.2.1	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2
29	1	4.R.1.3	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
30	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	1	4.R.1.2	2	4.R.1.2
31	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	2	4.R.1.2	1	4.R.1.2
32	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	1	4.R.1.3	1	4.R.1.2	1	4.R.1.3
33	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	1	4.R.1.3	1	4.R.1.2	2	4.R.1.3
34	2	4.R.1.3	2	4.R.2.1	1	4.R.1.3	2	4.R.2.1	2	4.R.2.1	2	4.R.1.3	1	4.R.2.1
35	2	4.R.1.2	2	4.R.1.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.1	2	4.R.2.2
36	2	4.R.2.2	1	4.R.2.2	2	4.R.4.1	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	1	4.R.2.2
37	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2
38	2	4.R.2.2	2	4.R.2.1	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.1	2	4.R.2.2
39	1	4.R.2.1	1	4.R.2.1	1	4.R.2.1	1	4.R.2.1	1	4.R.2.1	1	4.R.2.1	1	4.R.2.1
40	2	4.R.1.2	2	4.R.2.2	2	4.R.1.2	1	4.R.1.2	1	4.R.1.2	2	4.R.1.2	2	4.R.1.2
41	2	4.R.4.2	2	4.R.1.3	1	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3
42	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	1	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1
51	2	4.R.4.2	1	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3
52	2	4.R.4.1	2	4.R.4.1	2	4.R.1.3	1	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1
53	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	1	4.R.1.3	3	4.R.1.3	2	4.R.1.3
54	2	4.R.1.3	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.1.3	2	4.R.2.1	2	4.R.2.1
55	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1
56	2	4.R.4.1	2	4.R.1.2	1	4.R.1.2	2	4.R.1.2	2	4.R.2.1	2	4.R.1.2	2	4.R.3.1
57	3	4.R.1.2	3	4.R.1.2	1	4.R.1.2	2	4.R.1.2	3	4.R.3.1	3	4.R.1.2	3	4.R.3.1
58	2	4.R.1.2	1	4.R.1.2	1	4.R.1.2	1	4.R.1.2	2	4.R.3.1	2	4.R.1.2	2	4.R.1.2
59	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	1	4.R.3.1	2	4.R.4.1	2	4.R.1.2

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 4

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	4.R.1.3	1	4.R.1.2	1	4.R.1.3	1	4.R.1.3	2	4.R.4.1	1	4.R.4.1	2	4.R.4.1
61	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2
62	2	4.R.4.1	2	4.R.1.2	1	4.R.4.1	1	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.2
63	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1	2	4.R.3.1
64	2	4.R.4.2	2	4.R.2.2	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.2	2	4.R.1.3
65	1	4.R.4.2	2	4.R.1.3	1	4.R.1.3	2	4.R.1.3	1	4.R.1.3	2	4.R.1.3	2	4.R.1.3
66	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1	2	4.R.4.1
67	2	4.R.4.1	2	4.R.1.2	2	4.R.4.1	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2
68	2	4.R.1.3	2	4.R.1.3	1	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3	2	4.R.1.3
69	2	4.R.1.2	2	4.R.4.1	1	4.R.4.1	2	4.R.4.1	1	4.R.4.1	2	4.R.1.3	2	4.R.4.2
70	2	4.R.1.3	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.1.2	2	4.R.1.2
71	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2	2	4.R.2.2	2	4.R.1.2	2	4.R.1.2	2	4.R.1.2
72	2	4.R.1.2	2	4.R.1.2	2	4.R.3.1	2	4.R.3.1	1	4.R.3.1	2	4.R.1.2	2	4.R.3.1
73	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.2.2	2	4.R.1.2	2	4.R.2.2
74	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1
75	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.2.1	2	4.R.3.1	2	4.R.2.1	2	4.R.2.1
76	1	4.R.1.1	1	4.R.1.1	1	4.R.1.1	2	4.R.1.1	1	4.R.1.1	1	4.R.1.1	2	4.R.1.1

Objective Pairwise Comparison: 0.7202
Standard Pairwise Comparison: 0.7993

Table 4.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 4

Low		Medium		High
0		5.157895		7

1 3595343	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1
2 2105334	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.2
3 2105335	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1
4 2105338	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1
7 3555998	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3
8 3316597	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2
9 2105393	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
10 2177752	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.2
11 3556147	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1
12 3304894	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
23 2105396	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.2	4.R.1.2	4.R.1.2
24 2105399	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.4.1
25 2177756	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.3	4.R.2.1	4.R.4.2
26 2177757	4.R.1.2	4.R.1.3	4.R.1.3	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1
27 2177758	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
28 2177759	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.3	4.R.1.3	4.R.2.1
29 3316645	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.3
30 2105403	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2
31 2105404	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2
32 2105405	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.3	4.R.1.3
33 3555999	4.R.1.2	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3
34 2177760	4.R.1.3	4.R.1.3	4.R.1.3	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
35 2105406	4.R.1.2	4.R.1.2	4.R.2.1	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
36 2105407	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.4.1
37 3305002	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
38 3305003	4.R.2.1	4.R.2.1	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
39 2177767	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
40 3304928	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.2.2
41 2177766	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.4.2
42 2177765	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
51 3557608	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.4.2
52 3556076	4.R.1.3	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1
53 3556102	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3
54 2105440	4.R.1.3	4.R.1.3	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
55 3316656	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1
56 3318202	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.2.1	4.R.3.1	4.R.4.1
57 3318203	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.3.1	4.R.3.1
58 3318199	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.3.1
59 3556150	4.R.1.2	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.4.1
60 3556003	4.R.1.2	4.R.1.3	4.R.1.3	4.R.1.3	4.R.4.1	4.R.4.1	4.R.4.1

Table 4.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 4

61 3556002	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2
62 3555888	4.R.1.2	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.2
63 3556114	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1
64 3557609	4.R.1.2	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.2.2	4.R.4.2
65 3557606	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.4.2
66 3556104	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1
67 3561746	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.4.1	4.R.4.1
68 3556077	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3	4.R.1.3
69 3556169	4.R.1.2	4.R.1.3	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.1	4.R.4.2
70 3556235	4.R.1.2	4.R.1.2	4.R.1.3	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
71 3556234	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.1.2	4.R.2.2
72 3556110	4.R.1.2	4.R.1.2	4.R.1.2	4.R.3.1	4.R.3.1	4.R.3.1	4.R.3.1
73 3304974	4.R.1.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2	4.R.2.2
74 2177769	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1
75 2177770	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.2.1	4.R.3.1
76 3316624	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1	4.R.1.1

Table 4.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 4

Low		Medium		High
0		30.15385		92

4.R.1																				
4.R.1.1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	3
	44	44	44	44	44	44	44	23	23	23	23	29	29	29	29	29	29	55	55	
	55	55	55	55	55	76	76	76	76	76	76	76								
4.R.1.2	2	8	8	8	8	8	8	8	23	23	23	25	25	25	25	26	28	28	28	28
	30	30	30	30	30	30	30	31	31	31	31	31	31	31	32	32	32	32	32	
	33	35	35	40	40	40	40	40	40	56	56	56	56	57	57	57	57	57	58	
	58	58	58	58	58	59	60	61	61	61	61	61	61	61	62	64	67	67	67	
	67	67	69	70	70	71	71	71	71	71	71	72	72	72	73					
4.R.1.3	7	7	7	7	7	7	7	25	26	26	28	28	29	32	32	33	33	33	33	33
	33	34	34	34	41	41	41	41	41	41	51	51	51	51	51	51	52	53	53	
	53	53	53	53	53	54	54	60	60	60	64	64	64	64	65	65	65	65	65	
	65	68	68	68	68	68	68	68	69	70										
4.R.2																				
4.R.2.1	9	9	9	9	9	9	9	10	10	10	10	10	10	24	24	24	24	24	24	25
	27	27	27	27	27	27	27	28	34	34	34	34	35	38	38	39	39	39	39	
	39	39	39	42	42	42	42	42	42	42	54	54	54	54	54	56	74	74	74	
	74	74	74	74	75	75	75	75	75	75										
4.R.2.2	10	12	12	12	12	12	12	12	35	35	35	35	36	36	36	36	36	36	37	37
	37	37	37	37	37	38	38	38	38	38	40	64	70	70	70	70	71	73	73	
	73	73	73	73																
4.R.3																				

Table 4.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 4

4.R.3.1	11	11	11	11	11	11	11	56	57	57	58	59	59	59	59	59	63	63	63	63
	63	63	63	72	72	72	72	75												
4.R.4																				
4.R.4.1	24	26	26	26	26	36	52	52	52	52	52	52	56	59	60	60	60	62	62	62
	62	62	66	66	66	66	66	66	66	67	67	69	69	69	69					
4.R.4.2	25	41	51	62	64	65	69													

Table 4.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 4

Low		Medium		High
1		3		7

4.R.1													
4.R.1.1	1:7	2:6	3:7	4:7	23:4	29:6	55:7	76:7					
4.R.1.2	2:1	8:7	23:3	25:4	26:1	28:4	30:7	31:7	32:5	33:1	35:2	40:6	56:4
	57:5	58:6	59:1	60:1	61:7	62:1	64:1	67:5	69:1	70:2	71:6	72:3	73:1
4.R.1.3	7:7	25:1	26:2	28:2	29:1	32:2	33:6	34:3	41:6	51:6	52:1	53:7	54:2
	60:3	64:4	65:6	68:7	69:1	70:1							
4.R.2													
4.R.2.1	9:7	10:6	24:6	25:1	27:7	28:1	34:4	35:1	38:2	39:7	42:7	54:5	56:1
	74:7	75:6											
4.R.2.2	10:1	12:7	35:4	36:6	37:7	38:5	40:1	64:1	70:4	71:1	73:6		
4.R.3													
4.R.3.1	11:7	56:1	57:2	58:1	59:5	63:7	72:4	75:1					
4.R.4													
4.R.4.1	24:1	26:4	36:1	52:6	56:1	59:1	60:3	62:5	66:7	67:2	69:4		
4.R.4.2	25:1	41:1	51:1	62:1	64:1	65:1	69:1						

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 4

Low		Medium		High
1		3		7

1 3595343	4.R.1.1:7			
2 2105334	4.R.1.1:6	4.R.1.2:1		
3 2105335	4.R.1.1:7			
4 2105338	4.R.1.1:7			
7 3555998	4.R.1.3:7			
8 3316597	4.R.1.2:7			
9 2105393	4.R.2.1:7			
10 2177752	4.R.2.1:6	4.R.2.2:1		
11 3556147	4.R.3.1:7			
12 3304894	4.R.2.2:7			
23 2105396	4.R.1.1:4	4.R.1.2:3		
24 2105399	4.R.2.1:6	4.R.4.1:1		
25 2177756	4.R.1.2:4	4.R.1.3:1	4.R.2.1:1	4.R.4.2:1
26 2177757	4.R.1.2:1	4.R.1.3:2	4.R.4.1:4	
27 2177758	4.R.2.1:7			
28 2177759	4.R.1.2:4	4.R.1.3:2	4.R.2.1:1	
29 3316645	4.R.1.1:6	4.R.1.3:1		
30 2105403	4.R.1.2:7			
31 2105404	4.R.1.2:7			
32 2105405	4.R.1.2:5	4.R.1.3:2		
33 3555999	4.R.1.2:1	4.R.1.3:6		
34 2177760	4.R.1.3:3	4.R.2.1:4		
35 2105406	4.R.1.2:2	4.R.2.1:1	4.R.2.2:4	
36 2105407	4.R.2.2:6	4.R.4.1:1		
37 3305002	4.R.2.2:7			
38 3305003	4.R.2.1:2	4.R.2.2:5		
39 2177767	4.R.2.1:7			
40 3304928	4.R.1.2:6	4.R.2.2:1		
41 2177766	4.R.1.3:6	4.R.4.2:1		
42 2177765	4.R.2.1:7			
51 3557608	4.R.1.3:6	4.R.4.2:1		
52 3556076	4.R.1.3:1	4.R.4.1:6		
53 3556102	4.R.1.3:7			
54 2105440	4.R.1.3:2	4.R.2.1:5		
55 3316656	4.R.1.1:7			
56 3318202	4.R.1.2:4	4.R.2.1:1	4.R.3.1:1	4.R.4.1:1
57 3318203	4.R.1.2:5	4.R.3.1:2		
58 3318199	4.R.1.2:6	4.R.3.1:1		
59 3556150	4.R.1.2:1	4.R.3.1:5	4.R.4.1:1	
60 3556003	4.R.1.2:1	4.R.1.3:3	4.R.4.1:3	

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 4

61 3556002	4.R.1.2:7			
62 3555888	4.R.1.2:1	4.R.4.1:5	4.R.4.2:1	
63 3556114	4.R.3.1:7			
64 3557609	4.R.1.2:1	4.R.1.3:4	4.R.2.2:1	4.R.4.2:1
65 3557606	4.R.1.3:6	4.R.4.2:1		
66 3556104	4.R.4.1:7			
67 3561746	4.R.1.2:5	4.R.4.1:2		
68 3556077	4.R.1.3:7			
69 3556169	4.R.1.2:1	4.R.1.3:1	4.R.4.1:4	4.R.4.2:1
70 3556235	4.R.1.2:2	4.R.1.3:1	4.R.2.2:4	
71 3556234	4.R.1.2:6	4.R.2.2:1		
72 3556110	4.R.1.2:3	4.R.3.1:4		
73 3304974	4.R.1.2:1	4.R.2.2:6		
74 2177769	4.R.2.1:7			
75 2177770	4.R.2.1:6	4.R.3.1:1		
76 3316624	4.R.1.1:7			

Table 4.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Reading 2008 Grade 4

Low DOK		Matched DOK		High DOK
1		3		7

4.R.1 [2]:													
4.R.1.1 [2]:	1:7[1.14]	2:6[1.17]	3:7[1.14]	4:7[1.14]	23:4 [1.75]	29:6 [1]	55:7 [1.29]	76:7 [1.29]					
4.R.1.2 [2]:	2:1[1]	8:7[2]	23:3 [2]	25:4 [1.75]	26:1 [3]	28:4 [2]	30:7 [1.86]	31:7 [1.14]	32:5 [1]	33:1 [1]	35:2 [2]	40:6 [1.67]	56:4 [1.75]
	57:5 [2.4]	58:6 [1.5]	59:1 [2]	60:1 [1]	61:7 [2]	62:1 [2]	64:1 [2]	67:5 [2]	69:1 [2]	70:2 [2]	71:6 [2]	72:3 [2]	73:1 [2]
4.R.1.3 [2]:	7:7[1]	25:1 [2]	26:2 [2]	28:2 [2]	29:1 [1]	32:2 [1]	33:6 [1.83]	34:3 [1.67]	41:6 [1.83]	51:6 [1.83]	52:1 [2]	53:7 [1.43]	54:2 [2]
	60:3 [1.33]	64:4 [2]	65:6 [1.67]	68:7 [1.86]	69:1 [2]	70:1 [2]							
4.R.2 [2]:													
4.R.2.1 [2]:	9:7[2]	10:6 [2]	24:6 [2]	25:1 [2]	27:7 [2]	28:1 [1]	34:4 [1.75]	35:1 [2]	38:2 [2]	39:7 [1]	42:7 [1.86]	54:5 [2]	56:1 [2]
	74:7 [2]	75:6 [2]											
4.R.2.2 [2]:	10:1 [2]	12:7 [2]	35:4 [2]	36:6 [1.67]	37:7 [2]	38:5 [2]	40:1 [2]	64:1 [2]	70:4 [2]	71:1 [2]	73:6 [2]		
4.R.3 [2]:													
4.R.3.1 [2]:	11:7 [1.43]	56:1 [2]	57:2 [3]	58:1 [2]	59:5 [1.8]	63:7 [2]	72:4 [1.75]	75:1 [2]					
4.R.4 [2]:													
4.R.4.1 [2]:	24:1 [2]	26:4 [2]	36:1 [2]	52:6 [1.83]	56:1 [2]	59:1 [2]	60:3 [1.67]	62:5 [1.6]	66:7 [2]	67:2 [2]	69:4 [1.5]		

Table 4.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 4

4.R. 4.2 [2]:	25:1 [2]	41:1 [2]	51:1 [2]	62:1 [2]	64:1 [2]	65:1 [1]	69:1 [2]

Table 5.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 5
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
5.R.1 - Students are able to apply various reading strateg ...	3	3	2	3	100	26.57	1.29	YES
5.R.2 - Students are able to evaluate text structures, lit ...	2	2	2 3	1 1	50 50	13.86	2.90	YES
5.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	3	1.78	NO
5.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	2	2	100	12.71	2.25	YES
Total	8	8	2 3	6 2	75 25	56.14	0.35	

Table 5.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 5
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
5.R.1 - Students are able to apply various reading strateg ...	3	3	26.57	1.29	24	251	63	23	12	11	YES
5.R.2 - Students are able to evaluate text structures, lit ...	2	2	13.86	2.90	48	383	50	30	2	9	YES
5.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1.78	66	185	34	17	0	0	NO
5.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	12.71	2.25	23	198	64	23	13	22	YES
Total	8	8	56.14	0.35	33	29	58	26	9	15	

Table 5.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 5
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
5.R.1 - Students are able to apply various reading strateg ...	3	3	26.57	1.29	3	0	100	0	YES	47	2	0.86	0.05	YES
5.R.2 - Students are able to evaluate text structures, lit ...	2	2	13.86	2.90	2	0	100	0	YES	25	5	0.92	0.08	YES
5.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1.78	0.86	0.14	86	14	YES	5	3	0.86	0.14	YES
5.R.4 - Students are able to retrieve, analyze, synthesize ...	2	2	12.71	2.25	2	0	100	0	YES	23	4	0.83	0.09	YES
Total	8	8	56.14	0.35	1.96	0.69	96	0		25	15	0.87	0.09	

Table 5.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 5
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
5.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
5.R.3 - Students are able to interpret and respond to dive ...	NO	NO	YES	YES
5.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	YES	YES	YES

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
3	2	2	2	2	3	2	2
4	2	2	2	2	2	2	2
5	1	1	1	1	1	1	1
6	2	2	2	2	2	2	2
7	2	2	2	2	2	2	2
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	2	2	2	2	2	2	2
12	3	3	3	3	3	2	3
13	2	3	2	2	2	2	2
14	2	2	2	2	2	2	1
15	1	2	2	2	2	2	2
16	2	2	2	1	1	2	1
25	2	3	2	2	2	2	2
26	2	2	1	1	2	3	2
27	2	2	3	3	3	2	2
28	2	2	2	2	2	2	2
29	2	2	2	1	1	1	2
30	2	2	1	2	2	1	2
31	3	2	3	2	3	3	2
32	2	2	2	2	2	1	2
33	3	2	2	2	3	3	3
34	3	2	3	3	3	3	3
35	2	2	3	3	3	1	3
36	2	1	2	2	2	2	1
37	2	2	1	1	1	2	3
38	2	2	2	2	2	2	2
39	2	3	2	3	3	2	2
40	2	2	2	2	2	1	2
51	2	2	2	2	2	1	2
52	2	3	2	2	3	3	3
53	3	2	3	2	2	2	2
54	2	2	2	2	2	1	2
55	1	2	1	1	1	1	2
56	2	2	1	1	1	2	2
57	3	2	2	3	2	2	2
58	2	2	2	2	2	1	2
59	3	2	3	2	3	3	2
60	2	2	2	2	2	2	2
61	2	2	2	2	2	2	1
62	3	2	3	3	2	2	2
63	2	2	2	2	2	2	2
64	3	2	3	2	2	2	3
65	2	1	2	2	2	1	2
66	3	2	2	2	3	2	2
67	2	2	2	1	2	1	1
68	2	1	2	2	2	1	2
69	2	2	2	1	1	1	2

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
70	2	2	2	2	2	2	2
71	1	2	1	1	1	1	1
72	1	2	2	2	1	1	2
73	2	3	3	3	3	2	2
74	2	2	2	2	2	2	2
75	2	2	2	3	3	2	2
76	1	2	2	2	3	1	2

Intraclass Correlation: 0.8722
Pairwise Comparison: 0.6505

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	S1Obj4	DOK5	PObj5	DOK6	PObj6
3	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	3	5.R.2.2		2	5.R.2.2	2	5.R.2.2
4	2	5.R.2.1	2	5.R.2.1	2	5.R.2.1	2	5.R.2.1	2	5.R.2.1		2	5.R.2.1	2	5.R.2.1
5	1	5.R.2.2	1	5.R.2.2	1	5.R.2.2	1	5.R.2.2	1	5.R.2.2		1	5.R.2.2	1	5.R.2.1
6	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.1.2		2	5.R.2.2	2	5.R.2.2
7	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2		2	5.R.2.2	2	5.R.2.2
8	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1		1	5.R.1.1	1	5.R.1.1
9	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1		1	5.R.1.1	1	5.R.1.1
10	1	5.R.4.1	1	5.R.4.1	1	5.R.4.1	1	5.R.4.1	1	5.R.4.1		1	5.R.4.1	1	5.R.4.1
11	2	5.R.4.2	2	5.R.4.2	2	5.R.4.2	2	5.R.4.2	2	5.R.4.2		2	5.R.4.2	2	5.R.4.2
12	3	5.R.1.2	3	5.R.1.2	3	5.R.1.2	3	5.R.1.2	3	5.R.1.2		2	5.R.1.2	3	5.R.1.2
13	2	5.R.1.2	3	5.R.1.2	2	5.R.1.2	2	5.R.1.3	2	5.R.1.2		2	5.R.1.2	2	5.R.1.3
14	2	5.R.1.1	2	5.R.1.1	2	5.R.1.1	2	5.R.1.1	2	5.R.1.1		2	5.R.1.1	1	5.R.1.1
15	1	5.R.1.3	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3		2	5.R.1.3	2	5.R.1.3
16	2	5.R.1.1	2	5.R.1.1	2	5.R.1.1	1	5.R.1.1	1	5.R.1.1		2	5.R.1.1	1	5.R.1.1
25	2	5.R.3.1	3	5.R.3.1	2	5.R.3.1	2	5.R.3.1	2	5.R.3.1		2	5.R.2.1	2	5.R.3.1
26	2	5.R.1.1	2	5.R.1.1	1	5.R.1.1	1	5.R.1.1	2	5.R.1.1		3	5.R.1.1	2	5.R.1.1
27	2	5.R.4.2	2	5.R.4.2	3	5.R.4.2	3	5.R.4.2	3	5.R.4.2		2	5.R.4.2	2	5.R.4.2
28	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2		2	5.R.1.2	2	5.R.2.2
29	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1	1	5.R.4.1	1	5.R.4.1		1	5.R.4.1	2	5.R.4.1
30	2	5.R.1.3	2	5.R.2.1	1	5.R.1.2	2	5.R.1.2	2	5.R.4.2		1	5.R.2.1	2	5.R.1.3
31	3	5.R.1.2	2	5.R.2.2	3	5.R.2.2	2	5.R.1.2	3	5.R.2.2		3	5.R.2.2	2	5.R.2.2
32	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1		1	5.R.4.1	2	5.R.4.1
33	3	5.R.2.2	2	5.R.1.2	2	5.R.2.2	2	5.R.2.2	3	5.R.2.2		3	5.R.2.2	3	5.R.2.2
34	3	5.R.1.2	2	5.R.1.2	3	5.R.2.2	3	5.R.2.2	3	5.R.2.2		3	5.R.1.2	3	5.R.3.1
35	2	5.R.2.1	2	5.R.2.1	3	5.R.1.3	3	5.R.1.3	3	5.R.2.2		1	5.R.2.1	3	5.R.3.1
36	2	5.R.1.3	1	5.R.1.3	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3		2	5.R.1.3	1	5.R.1.3
37	2	5.R.1.1	2	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1		2	5.R.1.1	3	5.R.1.1
38	2	5.R.1.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2	2	5.R.2.2		2	5.R.2.1	2	5.R.2.2
39	2	5.R.1.3	3	5.R.2.2	2	5.R.2.1	3	5.R.2.1	3	5.R.1.2		2	5.R.1.2	2	5.R.1.2
40	2	5.R.2.1	2	5.R.2.1	2	5.R.2.2	2	5.R.2.1	2	5.R.2.1		1	5.R.2.1	2	5.R.1.2
51	2	5.R.4.1	2	5.R.2.1	2	5.R.4.1	2	5.R.1.3	2	5.R.4.1	5.R.2.1	1	5.R.1.3	2	5.R.1.2
52	2	5.R.1.2	3	5.R.2.2	2	5.R.1.2	2	5.R.1.2	3	5.R.1.2		3	5.R.1.2	3	5.R.1.2
53	3	5.R.4.2	2	5.R.1.2	3	5.R.4.2	2	5.R.4.2	2	5.R.4.2		2	5.R.1.2	2	5.R.4.2
54	2	5.R.4.1	2	5.R.1.2	2	5.R.4.1	2	5.R.1.2	2	5.R.4.1		1	5.R.2.1	2	5.R.1.3
55	1	5.R.2.1	2	5.R.2.1	1	5.R.1.2	1	5.R.2.1	1	5.R.2.1		1	5.R.2.1	2	5.R.2.1
56	2	5.R.1.1	2	5.R.1.1	1	5.R.1.1	1	5.R.1.1	1	5.R.1.1		2	5.R.1.1	2	5.R.1.1
57	3	5.R.4.1	2	5.R.1.3	2	5.R.1.3	3	5.R.4.2	2	5.R.4.1		2	5.R.2.1	2	5.R.2.1
58	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3		1	5.R.1.3	2	5.R.1.3
59	3	5.R.3.1	2	5.R.1.3	3	5.R.3.1	2	5.R.1.2	3	5.R.1.2		3	5.R.2.2	2	5.R.1.2

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	S1Obj4	DOK5	PObj5	DOK6	PObj6
60	2	5.R.2.1	2	5.R.1.3	2	5.R.1.3	2	5.R.2.1	2	5.R.2.1		2	5.R.1.3	2	5.R.2.1
61	2	5.R.4.1	2	5.R.4.1	2	5.R.4.2	2	5.R.4.1	2	5.R.4.1		2	5.R.4.1	1	5.R.4.1
62	3	5.R.3.1	2	5.R.1.3	3	5.R.3.1	3	5.R.1.2	2	5.R.1.2		2	5.R.1.2	2	5.R.3.1
63	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2		2	5.R.1.2	2	5.R.1.2
64	3	5.R.1.2	2	5.R.3.1	3	5.R.1.2	2	5.R.1.2	2	5.R.1.2		2	5.R.2.2	3	5.R.2.2
65	2	5.R.4.1	1	5.R.1.2	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1		1	5.R.4.2	2	5.R.4.2
66	3	5.R.4.1	2	5.R.1.2	2	5.R.4.1	2	5.R.4.1	3	5.R.4.1		2	5.R.4.2	2	5.R.2.1
67	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1	1	5.R.4.1	2	5.R.4.1		1	5.R.4.1	1	5.R.4.1
68	2	5.R.3.1	1	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2		1	5.R.2.2	2	5.R.3.1
69	2	5.R.4.1	2	5.R.4.1	2	5.R.4.1	1	5.R.4.1	1	5.R.4.1		1	5.R.4.1	2	5.R.4.1
70	2	5.R.1.2	2	5.R.1.3	2	5.R.1.2	2	5.R.1.3	2	5.R.1.2		2	5.R.2.1	2	5.R.1.3
71	1	5.R.1.2	2	5.R.1.2	1	5.R.1.2	1	5.R.1.2	1	5.R.1.2		1	5.R.1.2	1	5.R.1.2
72	1	5.R.1.2	2	5.R.1.2	2	5.R.1.2	2	5.R.1.2	1	5.R.1.2		1	5.R.1.2	2	5.R.1.2
73	2	5.R.4.1	3	5.R.4.1	3	5.R.4.2	3	5.R.4.2	3	5.R.4.2		2	5.R.4.2	2	5.R.1.3
74	2	5.R.1.3	2	5.R.4.1	2	5.R.1.3	2	5.R.1.3	2	5.R.1.3		2	5.R.1.3	2	5.R.1.3
75	2	5.R.1.3	2	5.R.2.1	2	5.R.2.1	3	5.R.2.1	3	5.R.1.2		2	5.R.2.1	2	5.R.1.2
76	1	5.R.3.1	2	5.R.3.1	2	5.R.3.1	2	5.R.1.2	3	5.R.3.1		1	5.R.1.2	2	5.R.3.1

Objective Pairwise Comparison: 0.6751
Standard Pairwise Comparison: 0.7487

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 5

Low		Medium		High
0		5.171052		8

3 2105851	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
4 2105848	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	
5 2105849	5.R.2.1	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
6 2105850	5.R.1.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
7 2105853	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
8 3304955	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
9 3316583	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
10 3542578	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	
11 3542585	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	
12 2177779	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	
13 3304850	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.3	5.R.1.3	
14 3316600	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
15 3304851	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	
16 3316599	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
25 3316611	5.R.2.1	5.R.3.1	5.R.3.1	5.R.3.1	5.R.3.1	5.R.3.1	5.R.3.1	
26 3304979	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
27 3316626	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	
28 3542605	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.2.2	
29 3542604	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	
30 3542616	5.R.1.2	5.R.1.2	5.R.1.3	5.R.1.3	5.R.2.1	5.R.2.1	5.R.4.2	
31 3542613	5.R.1.2	5.R.1.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
32 3542609	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	
33 2105884	5.R.1.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
34 2105888	5.R.1.2	5.R.1.2	5.R.1.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.3.1	
35 3316666	5.R.1.3	5.R.1.3	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.2	5.R.3.1	
36 3304938	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	
37 3316651	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
38 2105866	5.R.1.2	5.R.2.1	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	5.R.2.2	
39 2105869	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.3	5.R.2.1	5.R.2.1	5.R.2.2	
40 2105871	5.R.1.2	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.2	
51 3542617	5.R.1.2	5.R.1.3	5.R.1.3	5.R.2.1	5.R.2.1	5.R.4.1	5.R.4.1	5.R.4.1
52 3316686	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.2.2	
53 3316687	5.R.1.2	5.R.1.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2	
54 2105881	5.R.1.2	5.R.1.2	5.R.1.3	5.R.2.1	5.R.4.1	5.R.4.1	5.R.4.1	
55 2105882	5.R.1.2	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	
56 3316644	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	5.R.1.1	
57 3316649	5.R.1.3	5.R.1.3	5.R.2.1	5.R.2.1	5.R.4.1	5.R.4.1	5.R.4.2	
58 3304888	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	
59 3316647	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.3	5.R.2.2	5.R.3.1	5.R.3.1	
60 3304889	5.R.1.3	5.R.1.3	5.R.1.3	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1	

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 5

61 3542607	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.2
62 3542612	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.3	5.R.3.1	5.R.3.1	5.R.3.1
63 2105894	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2
64 3316671	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.2.2	5.R.2.2	5.R.3.1
65 3316674	5.R.1.2	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.2	5.R.4.2
66 3542615	5.R.1.2	5.R.2.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.2
67 3542614	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1
68 3316668	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.2.2	5.R.3.1	5.R.3.1
69 3542586	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1	5.R.4.1
70 2105854	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.3	5.R.1.3	5.R.1.3	5.R.2.1
71 2105856	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2
72 2105857	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2	5.R.1.2
73 3316596	5.R.1.3	5.R.4.1	5.R.4.1	5.R.4.2	5.R.4.2	5.R.4.2	5.R.4.2
74 2177783	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.1.3	5.R.4.1
75 3304967	5.R.1.2	5.R.1.2	5.R.1.3	5.R.2.1	5.R.2.1	5.R.2.1	5.R.2.1
76 3316591	5.R.1.2	5.R.1.2	5.R.3.1	5.R.3.1	5.R.3.1	5.R.3.1	5.R.3.1

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 5

Low		Medium		High
0		30.23077		88

5.R.1																				
5.R.1.1	8	8	8	8	8	8	8	9	9	9	9	9	9	9	14	14	14	14	14	14
	14	16	16	16	16	16	16	16	26	26	26	26	26	26	26	37	37	37	37	
	37	37	37	56	56	56	56	56	56	56										
5.R.1.2	6	12	12	12	12	12	12	12	13	13	13	13	13	28	28	28	28	28	28	30
	30	31	31	33	34	34	34	38	39	39	39	40	51	52	52	52	52	52	52	
	53	53	54	54	55	59	59	59	62	62	62	63	63	63	63	63	63	63	64	
	64	64	64	65	66	68	68	68	68	70	70	70	71	71	71	71	71	71	71	
	72	72	72	72	72	72	72	75	75	76	76									
5.R.1.3	13	13	15	15	15	15	15	15	15	30	30	35	35	36	36	36	36	36	36	36
	39	51	51	54	57	57	58	58	58	58	58	58	58	59	60	60	60	62	70	
	70	70	73	74	74	74	74	74	74	75										
5.R.2																				
5.R.2.1	4	4	4	4	4	4	4	5	25	30	30	35	35	35	38	39	39	40	40	40
	40	40	51	51	54	55	55	55	55	55	55	57	57	60	60	60	60	66	70	
	75	75	75	75																
5.R.2.2	3	3	3	3	3	3	3	5	5	5	5	5	5	6	6	6	6	6	6	7
	7	7	7	7	7	7	28	31	31	31	31	31	33	33	33	33	33	33	34	
	34	34	35	38	38	38	38	38	39	40	52	59	64	64	68					
5.R.3																				
5.R.3.1	25	25	25	25	25	25	34	35	59	59	62	62	62	64	68	68	76	76	76	76
	76																			

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 5

5.R.4																				
5.R.4.1	10	10	10	10	10	10	10	29	29	29	29	29	29	29	32	32	32	32	32	32
	32	51	51	51	54	54	54	57	57	61	61	61	61	61	61	65	65	65	65	
	66	66	66	66	67	67	67	67	67	67	67	69	69	69	69	69	69	69	73	
	73	74																		
5.R.4.2	11	11	11	11	11	11	11	27	27	27	27	27	27	27	30	53	53	53	53	53
	57	61	65	65	66	73	73	73	73											

Table 5.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 5

Low		Medium		High
1		3		7

5.R.1													
5.R.1.1	8:7	9:7	14:7	16:7	26:7	37:7	56:7						
5.R.1.2	6:1	12:7	13:5	28:6	30:2	31:2	33:1	34:3	38:1	39:3	40:1	51:1	52:6
	53:2	54:2	55:1	59:3	62:3	63:7	64:4	65:1	66:1	68:4	70:3	71:7	72:7
	75:2	76:2											
5.R.1.3	13:2	15:7	30:2	35:2	36:7	39:1	51:2	54:1	57:2	58:7	59:1	60:3	62:1
	70:3	73:1	74:6	75:1									
5.R.2													
5.R.2.1	4:7	5:1	25:1	30:2	35:3	38:1	39:2	40:5	51:2	54:1	55:6	57:2	60:4
	66:1	70:1	75:4										
5.R.2.2	3:7	5:6	6:6	7:7	28:1	31:5	33:6	34:3	35:1	38:5	39:1	40:1	52:1
	59:1	64:2	68:1										
5.R.3													
5.R.3.1	25:6	34:1	35:1	59:2	62:3	64:1	68:2	76:5					
5.R.4													
5.R.4.1	10:7	29:7	32:7	51:3	54:3	57:2	61:6	65:4	66:4	67:7	69:7	73:2	74:1
5.R.4.2	11:7	27:7	30:1	53:5	57:1	61:1	65:2	66:1	73:4				

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 5

Low		Medium		High
1		3		7

3 2105851	5.R.2.2:7			
4 2105848	5.R.2.1:7			
5 2105849	5.R.2.1:1	5.R.2.2:6		
6 2105850	5.R.1.2:1	5.R.2.2:6		
7 2105853	5.R.2.2:7			
8 3304955	5.R.1.1:7			
9 3316583	5.R.1.1:7			
10 3542578	5.R.4.1:7			
11 3542585	5.R.4.2:7			
12 2177779	5.R.1.2:7			
13 3304850	5.R.1.2:5	5.R.1.3:2		
14 3316600	5.R.1.1:7			
15 3304851	5.R.1.3:7			
16 3316599	5.R.1.1:7			
25 3316611	5.R.2.1:1	5.R.3.1:6		
26 3304979	5.R.1.1:7			
27 3316626	5.R.4.2:7			
28 3542605	5.R.1.2:6	5.R.2.2:1		
29 3542604	5.R.4.1:7			
30 3542616	5.R.1.2:2	5.R.1.3:2	5.R.2.1:2	5.R.4.2:1
31 3542613	5.R.1.2:2	5.R.2.2:5		
32 3542609	5.R.4.1:7			
33 2105884	5.R.1.2:1	5.R.2.2:6		
34 2105888	5.R.1.2:3	5.R.2.2:3	5.R.3.1:1	
35 3316666	5.R.1.3:2	5.R.2.1:3	5.R.2.2:1	5.R.3.1:1
36 3304938	5.R.1.3:7			
37 3316651	5.R.1.1:7			
38 2105866	5.R.1.2:1	5.R.2.1:1	5.R.2.2:5	
39 2105869	5.R.1.2:3	5.R.1.3:1	5.R.2.1:2	5.R.2.2:1
40 2105871	5.R.1.2:1	5.R.2.1:5	5.R.2.2:1	
51 3542617	5.R.1.2:1	5.R.1.3:2	5.R.2.1:2	5.R.4.1:3
52 3316686	5.R.1.2:6	5.R.2.2:1		
53 3316687	5.R.1.2:2	5.R.4.2:5		
54 2105881	5.R.1.2:2	5.R.1.3:1	5.R.2.1:1	5.R.4.1:3
55 2105882	5.R.1.2:1	5.R.2.1:6		
56 3316644	5.R.1.1:7			
57 3316649	5.R.1.3:2	5.R.2.1:2	5.R.4.1:2	5.R.4.2:1
58 3304888	5.R.1.3:7			
59 3316647	5.R.1.2:3	5.R.1.3:1	5.R.2.2:1	5.R.3.1:2
60 3304889	5.R.1.3:3	5.R.2.1:4		

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 5

61 3542607	5.R.4.1:6	5.R.4.2:1		
62 3542612	5.R.1.2:3	5.R.1.3:1	5.R.3.1:3	
63 2105894	5.R.1.2:7			
64 3316671	5.R.1.2:4	5.R.2.2:2	5.R.3.1:1	
65 3316674	5.R.1.2:1	5.R.4.1:4	5.R.4.2:2	
66 3542615	5.R.1.2:1	5.R.2.1:1	5.R.4.1:4	5.R.4.2:1
67 3542614	5.R.4.1:7			
68 3316668	5.R.1.2:4	5.R.2.2:1	5.R.3.1:2	
69 3542586	5.R.4.1:7			
70 2105854	5.R.1.2:3	5.R.1.3:3	5.R.2.1:1	
71 2105856	5.R.1.2:7			
72 2105857	5.R.1.2:7			
73 3316596	5.R.1.3:1	5.R.4.1:2	5.R.4.2:4	
74 2177783	5.R.1.3:6	5.R.4.1:1		
75 3304967	5.R.1.2:2	5.R.1.3:1	5.R.2.1:4	
76 3316591	5.R.1.2:2	5.R.3.1:5		

Table 5.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Reading 2008 Grade 5

Low DOK		Matched DOK		High DOK
1		3		7

5.R.1 [2]:													
5.R.1.1 [2]:	8:7[1]	9:7[1]	14:7 [1.86]	16:7 [1.57]	26:7 [1.86]	37:7 [1.71]	56:7 [1.57]						
5.R.1.2 [2]:	6:1[2]	12:7 [2.86]	13:5 [2.2]	28:6 [2]	30:2 [1.5]	31:2 [2.5]	33:1 [2]	34:3 [2.67]	38:1 [2]	39:3 [2.33]	40:1 [2]	51:1 [2]	52:6 [2.5]
	53:2 [2]	54:2 [2]	55:1 [1]	59:3 [2.33]	62:3 [2.33]	63:7 [2]	64:4 [2.5]	65:1 [1]	66:1 [2]	68:4 [1.75]	70:3 [2]	71:7 [1.14]	72:7 [1.57]
	75:2 [2.5]	76:2 [1.5]											
5.R.1.3 [2]:	13:2 [2]	15:7 [1.86]	30:2 [2]	35:2 [3]	36:7 [1.71]	39:1 [2]	51:2 [1.5]	54:1 [2]	57:2 [2]	58:7 [1.86]	59:1 [2]	60:3 [2]	62:1 [2]
	70:3 [2]	73:1 [2]	74:6 [2]	75:1 [2]									
5.R.2 [3]:													
5.R.2.1 [2]:	4:7[2]	5:1[1]	25:1 [2]	30:2 [1.5]	35:3 [1.67]	38:1 [2]	39:2 [2.5]	40:5 [1.8]	51:2 [2]	54:1 [1]	55:6 [1.33]	57:2 [2]	60:4 [2]
	66:1 [2]	70:1 [2]	75:4 [2.25]										
5.R.2.2 [3]:	3:7[2.14]	5:6[1]	6:6[2]	7:7[2]	28:1 [2]	31:5 [2.6]	33:6 [2.67]	34:3 [3]	35:1 [3]	38:5 [2]	39:1 [3]	40:1 [2]	52:1 [3]
	59:1 [3]	64:2 [2.5]	68:1 [1]										
5.R.3 [3]:													
5.R.3.1 [3]:	25:6 [2.17]	34:1 [3]	35:1 [3]	59:2 [3]	62:3 [2.67]	64:1 [2]	68:2 [2]	76:5 [2]					
5.R.													

Table 5.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 5

4 [2]:													
5.R. 4.1 [2]:	10:7 [1]	29:7 [1.57]	32:7 [1.86]	51:3 [2]	54:3 [2]	57:2 [2.5]	61:6 [1.83]	65:4 [2]	66:4 [2.5]	67:7 [1.57]	69:7 [1.57]	73:2 [2.5]	74:1 [2]
5.R. 4.2 [2]:	11:7 [2]	27:7 [2.43]	30:1 [2]	53:5 [2.4]	57:1 [3]	61:1 [2]	65:2 [1.5]	66:1 [2]	73:4 [2.75]				

Table 6.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 6
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
6.R.1 - Students are able to apply various reading strateg ...	2	2	2	2	100	18	3.59	YES
6.R.2 - Students are able to evaluate text structures, lit ...	2	2	2 3	1 1	50 50	17.29	1.28	YES
6.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	3.86	0.64	NO
6.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	2 3	1 2	33 66	16.86	3.00	YES
Total	8	8	2 3	4 4	50 50	56	0	

Table 6.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 6
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
6.R.1 - Students are able to apply various reading strateg ...	2	2	18	3.59	18	186	81	15	1	3	YES
6.R.2 - Students are able to evaluate text structures, lit ...	2	2	17.29	1.28	33	351	51	27	16	16	YES
6.R.3 - Students are able to interpret and respond to dive ...	1	1	3.86	0.64	35	117	65	17	0	0	YES
6.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	16.86	3.00	65	449	35	42	0	0	NO
Total	8	8	56	0	38	36	59	34	3	10	

Table 6.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 6
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
6.R.1 - Students are able to apply various reading strateg ...	2	2	18	3.59	2	0	100	0	YES	32	6	0.86	0.04	YES
6.R.2 - Students are able to evaluate text structures, lit ...	2	2	17.29	1.28	2	0	100	0	YES	31	2	0.87	0.08	YES
6.R.3 - Students are able to interpret and respond to dive ...	1	1	3.86	0.64	1	0	100	0	YES	7	1	1	0	YES
6.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	16.86	3.00	3	0	100	0	YES	30	5	0.78	0.07	YES
Total	8	8	56	0	2	0.71	100	0		25	11	0.88	0.10	

Table 6.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 6
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
6.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
6.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
6.R.3 - Students are able to interpret and respond to dive ...	NO	YES	YES	YES
6.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	NO	YES	YES

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 6

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	3	3	3	3	3	3	3
7	2	2	2	2	2	2	2
8	1	1	1	1	1	1	1
9	3	2	3	3	3	3	3
10	3	2	3	3	3	3	3
21	2	2	2	2	2	2	2
22	2	2	2	2	3	2	2
23	2	2	2	2	2	1	2
24	2	2	2	2	2	2	2
25	2	1	2	2	2	1	2
26	2	2	2	2	2	2	2
27	2	2	2	2	2	1	2
28	2	2	2	2	2	2	1
29	2	2	2	2	2	2	3
30	2	2	2	2	2	2	3
31	2	1	2	2	2	1	2
32	2	3	2	2	2	2	2
33	2	2	1	2	2	2	2
34	2	2	2	2	2	2	3
45	2	2	2	2	1	1	2
46	2	2	2	2	2	2	3
47	2	2	2	2	2	2	2
48	3	3	3	3	3	2	3
49	2	2	2	2	2	2	2
50	2	2	2	2	2	2	3
51	3	3	3	3	3	3	3
52	2	2	2	3	3	2	3
53	2	2	2	2	2	2	2
54	2	3	2	2	2	1	2
55	2	2	2	2	2	1	2
56	2	2	2	3	3	2	3
57	3	3	3	3	3	3	3
58	2	2	2	2	2	2	2
59	2	2	2	2	2	1	3
60	2	2	2	3	3	2	3
61	2	2	2	2	2	1	2
62	3	3	3	2	3	2	2
63	2	2	2	2	1	2	2
64	3	3	3	3	3	2	3
65	3	2	3	3	3	2	2
66	2	3	2	2	1	2	2
67	3	3	2	3	3	2	3
68	1	2	1	1	1	1	2
69	1	1	1	2	1	1	2

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 6

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
70	2	2	2	2	2	1	2
71	2	2	2	2	1	1	2
72	2	2	2	2	2	1	3
73	2	2	1	2	2	1	2
74	2	2	2	2	2	1	2
75	2	2	2	3	3	2	2
76	2	2	2	2	2	1	2

Intraclass Correlation: 0.9077
Pairwise Comparison: 0.7279

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 6

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	2	6.R.1.1	2	6.R.1.2	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1
2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2
3	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1
4	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2
5	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2
6	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1
7	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3
8	1	6.R.1.2	1	6.R.1.2	1	6.R.1.2	1	6.R.1.2	1	6.R.1.2	1	6.R.4.1	1	6.R.1.2
9	3	6.R.4.2	2	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2
10	3	6.R.4.2	2	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2
21	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2
22	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	3	6.R.1.2	2	6.R.1.2	2	6.R.1.2
23	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.4.1	1	6.R.4.1	2	6.R.4.2
24	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3
25	2	6.R.1.1	1	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	1	6.R.1.1	2	6.R.1.1
26	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2
27	2	6.R.2.1	2	6.R.1.2	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	1	6.R.2.1	2	6.R.2.1
28	2	6.R.1.2	2	6.R.1.2	2	6.R.2.1	2	6.R.2.1	2	6.R.1.2	2	6.R.1.2	1	6.R.1.2
29	2	6.R.3.1	2	6.R.3.1	2	6.R.3.1	2	6.R.3.1	2	6.R.3.1	2	6.R.3.1	3	6.R.3.1
30	2	6.R.2.1	2	6.R.2.2	2	6.R.2.1	2	6.R.3.1	2	6.R.1.2	2	6.R.1.2	3	6.R.2.2
31	2	6.R.1.1	1	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	1	6.R.4.1	2	6.R.4.2
32	2	6.R.2.2	3	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2
33	2	6.R.2.1	2	6.R.2.1	1	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1
34	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	3	6.R.2.1
45	2	6.R.2.1	2	6.R.1.2	2	6.R.2.1	2	6.R.2.1	1	6.R.2.1	1	6.R.1.2	2	6.R.1.2
46	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	3	6.R.4.3
47	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1
48	3	6.R.2.2	3	6.R.2.2	3	6.R.2.2	3	6.R.2.2	3	6.R.2.2	2	6.R.2.1	3	6.R.2.2
49	2	6.R.1.2	2	6.R.2.1	2	6.R.1.2	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1
50	2	6.R.4.3	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	3	6.R.3.1
51	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2	3	6.R.4.2
52	2	6.R.4.2	2	6.R.4.2	2	6.R.4.2	3	6.R.4.2	3	6.R.4.2	2	6.R.4.2	3	6.R.4.2
53	2	6.R.2.1	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2	2	6.R.2.2
54	2	6.R.1.2	3	6.R.3.1	2	6.R.1.2	2	6.R.1.2	2	6.R.1.2	1	6.R.3.1	2	6.R.2.2
55	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	1	6.R.4.1	2	6.R.4.2
56	2	6.R.4.2	2	6.R.1.2	2	6.R.4.2	3	6.R.1.2	3	6.R.4.2	2	6.R.4.3	3	6.R.4.2
57	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1	3	6.R.3.1
58	2	6.R.4.3	2	6.R.4.3	2	6.R.1.1	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3
59	2	6.R.1.1	2	6.R.1.1	2	6.R.4.2	2	6.R.1.1	2	6.R.1.1	1	6.R.4.1	3	6.R.4.3

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 6

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	6.R.4.2	2	6.R.4.2	2	6.R.4.1	3	6.R.4.3	3	6.R.4.2	2	6.R.4.2	3	6.R.4.3
61	2	6.R.4.1	2	6.R.4.1	2	6.R.4.1	2	6.R.4.1	2	6.R.4.1	1	6.R.4.1	2	6.R.4.1
62	3	6.R.2.1	3	6.R.2.1	3	6.R.2.1	2	6.R.2.1	3	6.R.2.1	2	6.R.2.2	2	6.R.2.1
63	2	6.R.2.1	2	6.R.2.2	2	6.R.2.2	2	6.R.2.1	1	6.R.2.2	2	6.R.2.1	2	6.R.2.1
64	3	6.R.2.1	3	6.R.2.1	3	6.R.2.1	3	6.R.2.1	3	6.R.2.1	2	6.R.2.1	3	6.R.2.1
65	3	6.R.2.1	2	6.R.2.1	3	6.R.2.1	3	6.R.2.1	3	6.R.2.1	2	6.R.2.1	2	6.R.2.1
66	2	6.R.2.1	3	6.R.2.2	2	6.R.2.2	2	6.R.2.2	1	6.R.2.2	2	6.R.2.2	2	6.R.2.1
67	3	6.R.2.1	3	6.R.2.1	2	6.R.3.1	3	6.R.2.1	3	6.R.2.1	2	6.R.2.1	3	6.R.3.1
68	1	6.R.1.2	2	6.R.1.2	1	6.R.1.2	1	6.R.1.2	1	6.R.1.2	1	6.R.4.1	2	6.R.2.1
69	1	6.R.1.2	1	6.R.1.2	1	6.R.1.2	2	6.R.1.2	1	6.R.1.2	1	6.R.4.1	2	6.R.1.2
70	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	1	6.R.4.3	2	6.R.4.3
71	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	2	6.R.1.1	1	6.R.1.1	1	6.R.1.1	2	6.R.1.1
72	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	1	6.R.4.3	3	6.R.4.3
73	2	6.R.4.3	2	6.R.2.1	1	6.R.1.2	2	6.R.1.2	2	6.R.1.2	1	6.R.2.1	2	6.R.2.1
74	2	6.R.2.1	2	6.R.1.2	2	6.R.2.1	2	6.R.2.1	2	6.R.2.1	1	6.R.4.1	2	6.R.2.1
75	2	6.R.4.2	2	6.R.4.2	2	6.R.4.2	3	6.R.4.2	3	6.R.4.2	2	6.R.4.2	2	6.R.4.2
76	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	2	6.R.4.3	1	6.R.4.3	2	6.R.4.3

Objective Pairwise Comparison: 0.7645
Standard Pairwise Comparison: 0.8282

Table 6.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 6

Low		Medium		High
0		5.157895		7

1 2106312	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.2
2 2177794	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
3 2177795	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
4 2177796	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2
5 2177797	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2
6 3558386	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1
7 32896	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
8 32900	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.4.1
9 3316625	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2
10 3316628	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2
21 2106324	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2
22 2106322	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2
23 3304860	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.4.1	6.R.4.1	6.R.4.2
24 2177803	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
25 3304861	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1
26 2177804	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
27 3559254	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
28 3559231	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.1	6.R.2.1
29 3559249	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1
30 3559247	6.R.1.2	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.2	6.R.2.2	6.R.3.1
31 3304864	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.4.1	6.R.4.2
32 2177817	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
33 2177819	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
34 2177820	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.1
45 2177811	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
46 2177812	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
47 3304869	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1
48 2177813	6.R.2.1	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
49 2177814	6.R.1.2	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
50 3558353	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.3.1	6.R.4.3
51 3316598	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2
52 3316595	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2
53 2177815	6.R.2.1	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
54 2177816	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.2	6.R.3.1	6.R.3.1
55 3304877	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.4.1	6.R.4.2
56 3316609	6.R.1.2	6.R.1.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.3
57 3558363	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1	6.R.3.1
58 2106360	6.R.1.1	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
59 3304873	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.4.1	6.R.4.2	6.R.4.3
60 3316619	6.R.4.1	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.3	6.R.4.3

Table 6.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 6

61 2106361	6.R.4.1	6.R.4.1	6.R.4.1	6.R.4.1	6.R.4.1	6.R.4.1	6.R.4.1
62 2106327	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.2
63 2106329	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.2	6.R.2.2	6.R.2.2
64 2177807	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
65 2177808	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1
66 2177809	6.R.2.1	6.R.2.1	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2	6.R.2.2
67 3558332	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.3.1	6.R.3.1
68 2106314	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.1	6.R.4.1
69 2106315	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.1.2	6.R.4.1
70 2106317	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
71 2106318	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1	6.R.1.1
72 2177799	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3
73 2177800	6.R.1.2	6.R.1.2	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.1	6.R.4.3
74 2177801	6.R.1.2	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.2.1	6.R.4.1
75 3316581	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2	6.R.4.2
76 3316584	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3	6.R.4.3

Table 6.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 6

Low		Medium		High
0		30.15385		80

6.R.1																				
6.R.1.1	11	11	11	11	11	11	23	23	23	23	25	25	25	25	25	25	25	31	31	31
	31	31	47	47	47	47	47	47	47	55	55	55	55	55	58	59	59	59	59	
	71	71	71	71	71	71	71													
6.R.1.2	14	44	44	44	44	44	44	45	55	55	55	55	55	55	58	88	88	88	88	
	81	21	21	21	21	21	21	21	22	22	22	22	22	22	22	27	28	28	28	
	28	28	30	30	34	34	34	34	34	34	45	45	45	49	49	50	50	50	50	
	50	54	54	54	54	56	56	68	68	68	68	68	69	69	69	69	69	69	73	
	73	73	74																	
6.R.2																				
6.R.2.1	33	33	33	33	33	33	33	27	27	27	27	27	27	28	28	30	30	33	33	33
	33	33	33	33	34	45	45	45	45	48	49	49	49	49	49	53	62	62	62	
	62	62	62	63	63	63	63	64	64	64	64	64	64	64	65	65	65	65	65	
	65	65	66	66	67	67	67	67	67	68	73	73	73	74	74	74	74	74		
6.R.2.2	22	22	22	22	22	22	22	26	26	26	26	26	26	26	30	30	32	32	32	32
	32	32	32	48	48	48	48	48	48	53	53	53	53	53	53	54	62	63	63	
	63	66	66	66	66	66														
6.R.3																				
6.R.3.1	66	66	66	66	66	66	66	29	29	29	29	29	29	29	30	50	54	54	57	57
	57	57	57	57	57	67	67													
6.R.4																				
6.R.4.1	8	23	23	31	55	59	60	61	61	61	61	61	61	61	68	69	74			
6.R.4.	99	99	99	99	99	99	99	11	11	11	11	11	11	11	12	23	55	55	55	55

Table 6.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 6

2								0	0	0	0	0	0	0	3	1	1	1	1	1
	51	51	51	52	52	52	52	52	52	52	55	56	56	56	56	59	60	60	60	
	60	75	75	75	75	75	75	75												
6.R.4.3	7	7	7	7	7	7	7	24	24	24	24	24	24	24	46	46	46	46	46	46
	46	50	56	58	58	58	58	58	58	59	60	60	70	70	70	70	70	70	70	
	72	72	72	72	72	72	72	73	76	76	76	76	76	76	76					

Table 6.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 6

Low		Medium		High
1		3		7

6.R.1													
6.R.1.1	1:6	23:4	25:7	31:5	47:7	55:5	58:1	59:4	71:7				
6.R.1.2	1:1	4:7	5:7	8:6	21:7	22:7	27:1	28:5	30:2	34:6	45:3	49:2	50:5
	54:4	56:2	68:5	69:6	73:3	74:1							
6.R.2													
6.R.2.1	3:7	27:6	28:2	30:2	33:7	34:1	45:4	48:1	49:5	53:1	62:6	63:4	64:7
	65:7	66:2	67:5	68:1	73:3	74:5							
6.R.2.2	2:7	26:7	30:2	32:7	48:6	53:6	54:1	62:1	63:3	66:5			
6.R.3													
6.R.3.1	6:7	29:7	30:1	50:1	54:2	57:7	67:2						
6.R.4													
6.R.4.1	8:1	23:2	31:1	55:1	59:1	60:1	61:7	68:1	69:1	74:1			
6.R.4.2	9:7	10:7	23:1	31:1	51:7	52:7	55:1	56:4	59:1	60:4	75:7		
6.R.4.3	7:7	24:7	46:7	50:1	56:1	58:6	59:1	60:2	70:7	72:7	73:1	76:7	

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 6

Low		Medium		High
1		3		7

1 2106312	6.R.1.1:6	6.R.1.2:1		
2 2177794	6.R.2.2:7			
3 2177795	6.R.2.1:7			
4 2177796	6.R.1.2:7			
5 2177797	6.R.1.2:7			
6 3558386	6.R.3.1:7			
7 32896	6.R.4.3:7			
8 32900	6.R.1.2:6	6.R.4.1:1		
9 3316625	6.R.4.2:7			
10 3316628	6.R.4.2:7			
21 2106324	6.R.1.2:7			
22 2106322	6.R.1.2:7			
23 3304860	6.R.1.1:4	6.R.4.1:2	6.R.4.2:1	
24 2177803	6.R.4.3:7			
25 3304861	6.R.1.1:7			
26 2177804	6.R.2.2:7			
27 3559254	6.R.1.2:1	6.R.2.1:6		
28 3559231	6.R.1.2:5	6.R.2.1:2		
29 3559249	6.R.3.1:7			
30 3559247	6.R.1.2:2	6.R.2.1:2	6.R.2.2:2	6.R.3.1:1
31 3304864	6.R.1.1:5	6.R.4.1:1	6.R.4.2:1	
32 2177817	6.R.2.2:7			
33 2177819	6.R.2.1:7			
34 2177820	6.R.1.2:6	6.R.2.1:1		
45 2177811	6.R.1.2:3	6.R.2.1:4		
46 2177812	6.R.4.3:7			
47 3304869	6.R.1.1:7			
48 2177813	6.R.2.1:1	6.R.2.2:6		
49 2177814	6.R.1.2:2	6.R.2.1:5		
50 3558353	6.R.1.2:5	6.R.3.1:1	6.R.4.3:1	
51 3316598	6.R.4.2:7			
52 3316595	6.R.4.2:7			
53 2177815	6.R.2.1:1	6.R.2.2:6		
54 2177816	6.R.1.2:4	6.R.2.2:1	6.R.3.1:2	
55 3304877	6.R.1.1:5	6.R.4.1:1	6.R.4.2:1	
56 3316609	6.R.1.2:2	6.R.4.2:4	6.R.4.3:1	
57 3558363	6.R.3.1:7			
58 2106360	6.R.1.1:1	6.R.4.3:6		
59 3304873	6.R.1.1:4	6.R.4.1:1	6.R.4.2:1	6.R.4.3:1
60 3316619	6.R.4.1:1	6.R.4.2:4	6.R.4.3:2	

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 6

61 2106361	6.R.4.1:7		
62 2106327	6.R.2.1:6	6.R.2.2:1	
63 2106329	6.R.2.1:4	6.R.2.2:3	
64 2177807	6.R.2.1:7		
65 2177808	6.R.2.1:7		
66 2177809	6.R.2.1:2	6.R.2.2:5	
67 3558332	6.R.2.1:5	6.R.3.1:2	
68 2106314	6.R.1.2:5	6.R.2.1:1	6.R.4.1:1
69 2106315	6.R.1.2:6	6.R.4.1:1	
70 2106317	6.R.4.3:7		
71 2106318	6.R.1.1:7		
72 2177799	6.R.4.3:7		
73 2177800	6.R.1.2:3	6.R.2.1:3	6.R.4.3:1
74 2177801	6.R.1.2:1	6.R.2.1:5	6.R.4.1:1
75 3316581	6.R.4.2:7		
76 3316584	6.R.4.3:7		

Table 6.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 6

Low DOK		Matched DOK		High DOK
1		3		7

6.R.1 [2]:													
6.R.1.1 [2]:	1:6[2]	23:4 [2]	25:7 [1.71]	31:5 [1.8]	47:7 [2]	55:5 [2]	58:1 [2]	59:4 [2]	71:7 [1.71]				
6.R.1.2 [2]:	1:1[2]	4:7[2]	5:7[2]	8:6[1]	21:7 [2]	22:7 [2.14]	27:1 [2]	28:5 [1.8]	30:2 [2]	34:6 [2]	45:3 [1.67]	49:2 [2]	50:5 [2]
	54:4 [2]	56:2 [2.5]	68:5 [1.2]	69:6 [1.33]	73:3 [1.67]	74:1 [2]							
6.R.2 [3]:													
6.R.2.1 [2]:	3:7[2]	27:6 [1.83]	28:2 [2]	30:2 [2]	33:7 [1.86]	34:1 [3]	45:4 [1.75]	48:1 [2]	49:5 [2]	53:1 [2]	62:6 [2.67]	63:4 [2]	64:7 [2.86]
	65:7 [2.57]	66:2 [2]	67:5 [2.8]	68:1 [2]	73:3 [1.67]	74:5 [2]							
6.R.2.2 [3]:	2:7[2]	26:7 [2]	30:2 [2.5]	32:7 [2.14]	48:6 [3]	53:6 [2]	54:1 [2]	62:1 [2]	63:3 [1.67]	66:5 [2]			
6.R.3 [3]:													
6.R.3.1 [3]:	6:7[3]	29:7 [2.14]	30:1 [2]	50:1 [3]	54:2 [2]	57:7 [3]	67:2 [2.5]						
6.R.4 [3]:													
6.R.4.1 [2]:	8:1[1]	23:2 [1.5]	31:1 [1]	55:1 [1]	59:1 [1]	60:1 [2]	61:7 [1.86]	68:1 [1]	69:1 [1]	74:1 [1]			
6.R.4.2 [3]:	9:7[2.86]	10:7 [2.86]	23:1 [2]	31:1 [2]	51:7 [3]	52:7 [2.43]	55:1 [2]	56:4 [2.5]	59:1 [2]	60:4 [2.25]	75:7 [2.29]		
6.R.	7:7[	24:7	46:7	50:1	56:1	58:6	59:1	60:2	70:7	72:7	73:1	76:7	

Table 6.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 6

4.3 [3]:	2]	[2]	[2.14]	[2]	[2]	[2]	[3]	[3]	[1.86]	[2]	[2]	[1.86]

Table 7.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 7
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
7.R.1 - Students are able to apply various reading strateg ...	2	2	2	2	100	20.57	3.54	YES
7.R.2 - Students are able to evaluate text structures, lit ...	2	2.14	2	2	100	13.86	1.46	YES
7.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	6.43	2.06	YES
7.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	2 3	2 1	66 33	15.14	2.53	YES
Total	8	8.14	2 3	6 2	75 25	56	0	

Table 7.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 7
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
7.R.1 - Students are able to apply various reading strateg ...	2	2	20.57	3.54	11	171	80	17	9	10	YES
7.R.2 - Students are able to evaluate text structures, lit ...	2	2.14	13.86	1.46	0	0	73	18	27	18	YES
7.R.3 - Students are able to interpret and respond to dive ...	1	1	6.43	2.06	81	472	19	16	0	0	NO
7.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	15.14	2.53	8	65	69	31	23	23	YES
Total	8	8.14	56	0	17	32	69	31	14	19	

Table 7.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 7
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
7.R.1 - Students are able to apply various reading strateg ...	2	2	20.57	3.54	2	0	100	0	YES	37	6	0.71	0.02	YES
7.R.2 - Students are able to evaluate text structures, lit ...	2	2.14	13.86	1.46	2.14	0.35	100	0	YES	25	3	0.91	0.09	YES
7.R.3 - Students are able to interpret and respond to dive ...	1	1	6.43	2.06	1	0	100	0	YES	11	4	1	0	YES
7.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	15.14	2.53	3	0	100	0	YES	27	5	0.76	0.05	YES
Total	8	8.14	56	0	2.04	0.73	100	0		25	10	0.85	0.13	

Table 7.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 7
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
7.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
7.R.3 - Students are able to interpret and respond to dive ...	YES	NO	YES	YES
7.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	YES	YES	YES

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 7

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	2	2	2	2	2	2	2
2	2	2	2	2	2	2	2
3	3	2	2	3	3	2	3
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	3	3	3	3	3	3	3
7	3	2	3	3	3	2	3
8	2	2	2	2	2	2	2
9	2	2	2	2	3	2	2
20	2	2	1	2	1	1	2
21	2	2	2	2	3	2	2
22	2	2	2	2	2	2	2
23	2	2	2	2	3	2	3
24	2	2	2	2	2	2	3
25	2	2	2	2	2	2	3
26	2	2	2	2	2	2	3
27	2	2	2	2	2	2	2
28	2	2	2	2	2	2	2
29	3	2	3	3	3	2	3
30	2	2	2	3	2	2	3
31	3	2	3	3	3	3	3
32	2	2	2	2	2	2	2
43	1	2	2	1	1	2	2
44	2	2	1	2	1	2	2
45	2	2	2	2	2	3	2
46	2	2	2	2	2	2	2
47	2	2	3	2	3	3	2
48	2	2	2	2	2	2	3
49	2	2	2	3	2	2	3
50	3	2	2	2	3	3	3
51	3	2	3	3	3	3	3
52	2	2	2	2	2	2	2
53	2	2	2	2	2	2	2
54	2	2	2	3	2	2	3
55	2	2	2	2	2	2	3
56	2	2	2	2	2	2	2
57	2	2	2	2	2	2	2
58	2	2	2	2	2	2	2
59	2	2	2	3	3	2	3
60	2	2	2	2	3	2	2
61	3	3	2	3	3	2	3
62	2	2	2	2	2	3	2
63	2	2	1	2	2	2	2
64	2	2	2	2	2	2	2
65	1	2	1	1	1	1	1
66	2	2	2	2	2	2	2
67	2	2	2	2	3	2	2
68	3	2	3	2	3	3	3
69	3	2	2	2	2	2	2

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 7

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
70	2	2	2	2	2	2	2
71	2	2	1	2	2	2	2
72	2	2	3	2	3	3	2
73	2	2	2	2	2	2	2
74	2	2	2	2	3	2	2
75	3	3	3	2	3	2	2
76	2	2	2	1	1	1	1

Intraclass Correlation: 0.8575
Pairwise Comparison: 0.7398

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 7

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1
2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2
3	3	7.R.1.2	2	7.R.1.2	2	7.R.1.2	3	7.R.1.2	3	7.R.1.2	2	7.R.1.2	3	7.R.1.2
4	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1
5	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1
6	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2
7	3	7.R.4.3	2	7.R.1.2	3	7.R.4.3	3	7.R.4.3	3	7.R.4.3	2	7.R.4.3	3	7.R.4.3
8	2	7.R.4.2	2	7.R.1.2	2	7.R.4.2	2	7.R.1.2	2	7.R.4.2	2	7.R.4.2	2	7.R.1.2
9	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.3	3	7.R.4.2	2	7.R.4.3	2	7.R.4.1
20	2	7.R.3.1	2	7.R.1.2	1	7.R.1.2	2	7.R.3.1	1	7.R.3.1	1	7.R.3.1	2	7.R.1.2
21	2	7.R.1.2	2	7.R.1.2	2	7.R.3.1	2	7.R.3.1	3	7.R.3.1	2	7.R.3.1	2	7.R.3.1
22	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1
23	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	3	7.R.1.2	2	7.R.1.2	3	7.R.3.1
24	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	3	7.R.4.1
25	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	3	7.R.2.1
26	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.1.2	3	7.R.3.1
27	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.2.2	2	7.R.1.1	2	7.R.1.1
28	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1
29	3	7.R.4.2	2	7.R.1.2	3	7.R.4.2	3	7.R.4.2	3	7.R.4.2	2	7.R.3.1	3	7.R.4.2
30	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	3	7.R.2.1	2	7.R.2.1	2	7.R.2.2	3	7.R.1.2
31	3	7.R.4.2	2	7.R.4.2	3	7.R.4.3	3	7.R.4.2	3	7.R.4.2	3	7.R.3.1	3	7.R.3.1
32	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.2.1	2	7.R.3.1
43	1	7.R.1.2	2	7.R.1.2	2	7.R.1.2	1	7.R.1.2	1	7.R.1.2	2	7.R.1.2	2	7.R.1.2
44	2	7.R.1.2	2	7.R.2	1	7.R.1.2	2	7.R.1.2	1	7.R.1.2	2	7.R.1.2	2	7.R.1.2
45	2	7.R.1.2	2	7.R.2.1	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	3	7.R.1.2	2	7.R.1.2
46	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1	2	7.R.1.1
47	2	7.R.4.2	2	7.R.1.2	3	7.R.4.2	2	7.R.3.1	3	7.R.4.2	3	7.R.4.2	2	7.R.4.2
48	2	7.R.1.2	2	7.R.4.2	2	7.R.4.2	2	7.R.4.2	2	7.R.4.2	2	7.R.1.2	3	7.R.1.2
49	2	7.R.2.1	2	7.R.2.2	2	7.R.2.2	3	7.R.2.2	2	7.R.3.1	2	7.R.2.2	3	7.R.2.1
50	3	7.R.3.1	2	7.R.4.2	2	7.R.3.1	2	7.R.3.1	3	7.R.2.1	3	7.R.3.1	3	7.R.4.3
51	3	7.R.2.1	2	7.R.2.1	3	7.R.2.1	3	7.R.3.1	3	7.R.3.1	3	7.R.1.2	3	7.R.2.1
52	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1	2	7.R.3.1
53	2	7.R.2.1	2	7.R.1.2	2	7.R.2.1	2	7.R.2.1	2	7.R.2.1	2	7.R.3.1	2	7.R.2.1
54	2	7.R.4.2	2	7.R.4.2	2	7.R.4.2	3	7.R.4.2	2	7.R.4.2	2	7.R.4.2	3	7.R.4.2
55	2	7.R.2.1	2	7.R.2.1	2	7.R.1.1	2	7.R.2.1	2	7.R.2.2	2	7.R.1.1	3	7.R.2.2
56	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1
57	2	7.R.1.2	2	7.R.1.1	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2
58	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.4.2	2	7.R.4.2	2	7.R.1.2	2	7.R.1.2
59	2	7.R.4.2	2	7.R.1.2	2	7.R.4.2	3	7.R.4.2	3	7.R.4.2	2	7.R.4.2	3	7.R.4.2

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 7

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	7.R.2.1	2	7.R.2.1	2	7.R.4.1	2	7.R.1.2	3	7.R.2.1	2	7.R.1.2	2	7.R.2.1
61	3	7.R.2.2	3	7.R.2.2	2	7.R.4.1	3	7.R.2.2	3	7.R.2.2	2	7.R.2.2	3	7.R.2.2
62	2	7.R.4.1	2	7.R.1.2	2	7.R.1.2	2	7.R.4.2	2	7.R.1.2	3	7.R.1.2	2	7.R.4.1
63	2	7.R.4.1	2	7.R.4.1	1	7.R.1.2	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1	2	7.R.4.1
64	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2
65	1	7.R.1.2	2	7.R.1.2	1	7.R.1.2	1	7.R.1.2	1	7.R.1.2	1	7.R.1.2	1	7.R.1.2
66	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.4.2	2	7.R.1.2
67	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	3	7.R.1.2	2	7.R.1.2	2	7.R.1.2
68	3	7.R.4.2	2	7.R.1.2	3	7.R.4.2	2	7.R.4.2	3	7.R.4.2	3	7.R.4.2	3	7.R.4.2
69	3	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2
70	2	7.R.1.2	2	7.R.1.2	2	7.R.4.2	2	7.R.1.2	2	7.R.4.2	2	7.R.1.2	2	7.R.1.2
71	2	7.R.3.1	2	7.R.1.2	1	7.R.1.2	2	7.R.3.1	2	7.R.3.1	2	7.R.1.2	2	7.R.1.2
72	2	7.R.4.2	2	7.R.1.2	3	7.R.4.2	2	7.R.3.1	3	7.R.4.2	3	7.R.4.2	2	7.R.4.2
73	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2	2	7.R.2.2
74	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	2	7.R.1.2	3	7.R.1.2	2	7.R.1.2	2	7.R.1.2
75	3	7.R.2.2	3	7.R.2.2	3	7.R.2.2	2	7.R.2.2	3	7.R.2.2	2	7.R.2.2	2	7.R.2.2
76	2	7.R.4.1	2	7.R.4.3	2	7.R.4.1	1	7.R.4.1	1	7.R.4.1	1	7.R.4.1	1	7.R.4.1

Objective Pairwise Comparison: 0.7151
Standard Pairwise Comparison: 0.7619

Table 7.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 7

Low		Medium		High
0		5.157895		7

1 2106769	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1
2 2106771	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
3 2106770	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
4 2106772	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1
5 2177828	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1
6 2177832	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
7 3555846	7.R.1.2	7.R.4.3	7.R.4.3	7.R.4.3	7.R.4.3	7.R.4.3	7.R.4.3
8 3316784	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
9 3555318	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.2	7.R.4.3	7.R.4.3
20 3556105	7.R.1.2	7.R.1.2	7.R.1.2	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1
21 3556291	7.R.1.2	7.R.1.2	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1
22 3556152	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1
23 3556149	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.3.1
24 3556091	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1
25 3555025	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1
26 3555492	7.R.1.2	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1
27 3556158	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.2.2
28 3556068	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1
29 3556035	7.R.1.2	7.R.3.1	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
30 3555028	7.R.1.2	7.R.2.1	7.R.2.1	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
31 3556057	7.R.3.1	7.R.3.1	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.3
32 3555021	7.R.2.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1
43 2106798	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
44 2106799	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.2
45 2106801	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.2.1
46 2106802	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1	7.R.1.1
47 3555988	7.R.1.2	7.R.3.1	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
48 3316850	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
49 2177842	7.R.2.1	7.R.2.1	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.3.1
50 3305132	7.R.2.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.4.2	7.R.4.3
51 2106807	7.R.1.2	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.3.1	7.R.3.1
52 2106808	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1	7.R.3.1
53 2177845	7.R.1.2	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.3.1
54 3316858	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
55 3555481	7.R.1.1	7.R.1.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.2	7.R.2.2
56 3555482	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1
57 2106810	7.R.1.1	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
58 3316861	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.2	7.R.4.2
59 3556065	7.R.1.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
60 2177849	7.R.1.2	7.R.1.2	7.R.2.1	7.R.2.1	7.R.2.1	7.R.2.1	7.R.4.1

Table 7.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 7

61 2177850	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.4.1
62 3316878	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.1	7.R.4.1	7.R.4.2
63 3555499	7.R.1.2	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1
64 2106780	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
65 2106781	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
66 2106783	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.2
67 2106784	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
68 3316839	7.R.1.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
69 2177834	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
70 3316837	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.4.2	7.R.4.2
71 2177835	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.3.1	7.R.3.1	7.R.3.1
72 3316842	7.R.1.2	7.R.3.1	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2	7.R.4.2
73 2106786	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
74 2106787	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2	7.R.1.2
75 2106790	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2	7.R.2.2
76 3556089	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.1	7.R.4.3

Table 7.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 7

Low		Medium		High
0		30.15385		114

7.R.1																				
7.R.1.1	44	44	44	44	44	44	44	22	22	22	22	22	22	22	27	27	27	27	27	27
	46	46	46	46	46	46	46	55	55	57										
7.R.1.2	33	33	33	33	33	33	33	77	88	88	88	20	20	20	21	21	23	23	23	23
	23	23	26	29	30	43	43	43	43	43	43	43	44	44	44	44	44	44	44	45
	45	45	45	45	45	47	48	48	48	51	53	57	57	57	57	57	57	58	58	
	58	58	58	59	60	60	62	62	62	62	63	64	64	64	64	64	64	64	65	
	65	65	65	65	65	65	66	66	66	66	66	66	67	67	67	67	67	67	67	
	68	70	70	70	70	70	71	71	71	71	72	74	74	74	74	74	74	74		
7.R.2	44																			
7.R.2.1	11	11	11	11	11	11	11	55	55	55	55	55	55	55	25	25	25	25	25	25
	25	30	30	32	45	49	49	50	51	51	51	51	53	53	53	53	53	55	55	
	55	60	60	60	60															
7.R.2.2	22	22	22	22	22	22	22	66	66	66	66	66	66	66	27	30	30	30	30	49
	49	49	49	55	55	61	61	61	61	61	61	69	69	69	69	69	69	69	73	
	73	73	73	73	73	73	75	75	75	75	75	75	75							
7.R.3																				
7.R.3.1	20	20	20	20	21	21	21	21	21	23	26	26	26	26	26	26	29	31	31	32
	32	32	32	32	32	47	49	50	50	50	50	51	51	52	52	52	52	52	52	
	52	53	71	71	71	72														
7.R.4																				
7.R.4.1	99	99	99	99	24	24	24	24	24	24	24	28	28	28	28	28	28	28	56	56

Table 7.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 7

	56	56	56	56	56	60	61	62	62	63	63	63	63	63	63	76	76	76	76	
	76	76																		
7.R.4.2	8	8	8	8	9	29	29	29	29	29	31	31	31	31	47	47	47	47	47	48
	48	48	48	50	54	54	54	54	54	54	54	58	58	59	59	59	59	59	59	
	62	66	68	68	68	68	68	68	70	70	72	72	72	72	72					
7.R.4.3	7	7	7	7	7	7	9	9	31	50	76									

Table 7.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 7

Low		Medium		High
1		3		7

7.R.1													
7.R.1.1	4:7	22:7	27:6	46:7	55:2	57:1							
7.R.1.2	3:7	7:1	8:3	20:3	21:2	23:6	26:1	29:1	30:1	43:7	44:6	45:6	47:1
	48:3	51:1	53:1	57:6	58:5	59:1	60:2	62:4	63:1	64:7	65:7	66:6	67:7
	68:1	70:5	71:4	72:1	74:7								
7.R.2	44:1												
7.R.2.1	1:7	5:7	25:7	30:2	32:1	45:1	49:2	50:1	51:4	53:5	55:3	60:4	
7.R.2.2	2:7	6:7	27:1	30:4	49:4	55:2	61:6	69:7	73:7	75:7			
7.R.3													
7.R.3.1	20:4	21:5	23:1	26:6	29:1	31:2	32:6	47:1	49:1	50:4	51:2	52:7	53:1
	71:3	72:1											
7.R.4													
7.R.4.1	9:4	24:7	28:7	56:7	60:1	61:1	62:2	63:6	76:6				
7.R.4.2	8:4	9:1	29:5	31:4	47:5	48:4	50:1	54:7	58:2	59:6	62:1	66:1	68:6
	70:2	72:5											
7.R.4.3	7:6	9:2	31:1	50:1	76:1								

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 7

Low		Medium		High
1		3		7

1 2106769	7.R.2.1:7			
2 2106771	7.R.2.2:7			
3 2106770	7.R.1.2:7			
4 2106772	7.R.1.1:7			
5 2177828	7.R.2.1:7			
6 2177832	7.R.2.2:7			
7 3555846	7.R.1.2:1	7.R.4.3:6		
8 3316784	7.R.1.2:3	7.R.4.2:4		
9 3555318	7.R.4.1:4	7.R.4.2:1	7.R.4.3:2	
20 3556105	7.R.1.2:3	7.R.3.1:4		
21 3556291	7.R.1.2:2	7.R.3.1:5		
22 3556152	7.R.1.1:7			
23 3556149	7.R.1.2:6	7.R.3.1:1		
24 3556091	7.R.4.1:7			
25 3555025	7.R.2.1:7			
26 3555492	7.R.1.2:1	7.R.3.1:6		
27 3556158	7.R.1.1:6	7.R.2.2:1		
28 3556068	7.R.4.1:7			
29 3556035	7.R.1.2:1	7.R.3.1:1	7.R.4.2:5	
30 3555028	7.R.1.2:1	7.R.2.1:2	7.R.2.2:4	
31 3556057	7.R.3.1:2	7.R.4.2:4	7.R.4.3:1	
32 3555021	7.R.2.1:1	7.R.3.1:6		
43 2106798	7.R.1.2:7			
44 2106799	7.R.1.2:6	7.R.2:1		
45 2106801	7.R.1.2:6	7.R.2.1:1		
46 2106802	7.R.1.1:7			
47 3555988	7.R.1.2:1	7.R.3.1:1	7.R.4.2:5	
48 3316850	7.R.1.2:3	7.R.4.2:4		
49 2177842	7.R.2.1:2	7.R.2.2:4	7.R.3.1:1	
50 3305132	7.R.2.1:1	7.R.3.1:4	7.R.4.2:1	7.R.4.3:1
51 2106807	7.R.1.2:1	7.R.2.1:4	7.R.3.1:2	
52 2106808	7.R.3.1:7			
53 2177845	7.R.1.2:1	7.R.2.1:5	7.R.3.1:1	
54 3316858	7.R.4.2:7			
55 3555481	7.R.1.1:2	7.R.2.1:3	7.R.2.2:2	
56 3555482	7.R.4.1:7			
57 2106810	7.R.1.1:1	7.R.1.2:6		
58 3316861	7.R.1.2:5	7.R.4.2:2		
59 3556065	7.R.1.2:1	7.R.4.2:6		
60 2177849	7.R.1.2:2	7.R.2.1:4	7.R.4.1:1	

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 7

61 2177850	7.R.2.2:6	7.R.4.1:1	
62 3316878	7.R.1.2:4	7.R.4.1:2	7.R.4.2:1
63 3555499	7.R.1.2:1	7.R.4.1:6	
64 2106780	7.R.1.2:7		
65 2106781	7.R.1.2:7		
66 2106783	7.R.1.2:6	7.R.4.2:1	
67 2106784	7.R.1.2:7		
68 3316839	7.R.1.2:1	7.R.4.2:6	
69 2177834	7.R.2.2:7		
70 3316837	7.R.1.2:5	7.R.4.2:2	
71 2177835	7.R.1.2:4	7.R.3.1:3	
72 3316842	7.R.1.2:1	7.R.3.1:1	7.R.4.2:5
73 2106786	7.R.2.2:7		
74 2106787	7.R.1.2:7		
75 2106790	7.R.2.2:7		
76 3556089	7.R.4.1:6	7.R.4.3:1	

Table 7.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 7

Low DOK		Matched DOK		High DOK
1		3		7

7.R.1 [2]:													
7.R.1.1 [2]:	4:7[2]	22:7[2]	27:6[2]	46:7[2]	55:2[2]	57:1[2]							
7.R.1.2 [2]:	3:7[2.57]	7:1[2]	8:3[2]	20:3[1.67]	21:2[2]	23:6[2.17]	26:1[2]	29:1[2]	30:1[3]	43:7[1.57]	44:6[1.67]	45:6[2.17]	47:1[2]
	48:3[2.33]	51:1[3]	53:1[2]	57:6[2]	58:5[2]	59:1[2]	60:2[2]	62:4[2.25]	63:1[1]	64:7[2]	65:7[1.14]	66:6[2]	67:7[2.14]
	68:1[2]	70:5[2]	71:4[1.75]	72:1[2]	74:7[2.14]								
7.R.2 [2]:	44:1[2]												
7.R.2.1 [2]:	1:7[2]	5:7[2]	25:7[2.14]	30:2[2.5]	32:1[2]	45:1[2]	49:2[2.5]	50:1[3]	51:4[2.75]	53:5[2]	55:3[2]	60:4[2.25]	
7.R.2.2 [2]:	2:7[2]	6:7[3]	27:1[2]	30:4[2]	49:4[2.25]	55:2[2.5]	61:6[2.83]	69:7[2.14]	73:7[2]	75:7[2.57]			
7.R.3 [3]:													
7.R.3.1 [3]:	20:4[1.5]	21:5[2.2]	23:1[3]	26:6[2.17]	29:1[2]	31:2[3]	32:6[2]	47:1[2]	49:1[2]	50:4[2.5]	51:2[3]	52:7[2]	53:1[2]
	71:3[2]	72:1[2]											
7.R.4 [2]:													
7.R.4.1 [2]:	9:4[2]	24:7[2.14]	28:7[2]	56:7[2]	60:1[2]	61:1[2]	62:2[2]	63:6[2]	76:6[1.33]				
7.R.4.2	8:4[2]	9:1[3]	29:5[3]	31:4[2.7	47:5[2.6]	48:4[2]	50:1[2]	54:7[2.2	58:2[2]	59:6[2.5]	62:1[2]	66:1[2]	68:6[2.8

Table 7.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 7

[2]:				5]				9]					3]
	70:2 [2]	72:5 [2.6]											
7.R. 4.3 [3]:	7:6[2.83]	9:2[2]	31:1 [3]	50:1 [3]	76:1 [2]								

Table 8.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 8
Number of Assessment Items - 56

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
8.R.1 - Students are able to apply various reading strateg ...	2	2	2	2	100	20.71	3.33	YES
8.R.2 - Students are able to evaluate text structures, lit ...	2	2	2 3	1 1	50 50	16.86	2.64	YES
8.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	5.14	1.36	NO
8.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	2 3	1 2	33 66	13.29	1.58	YES
Total	8	8	2 3	4 4	50 50	56	0	

Table 8.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 8
Number of Assessment Items - 56

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
8.R.1 - Students are able to apply various reading strateg ...	2	2	20.71	3.33	11	132	75	15	13	13	YES
8.R.2 - Students are able to evaluate text structures, lit ...	2	2	16.86	2.64	43	517	55	32	1	6	YES
8.R.3 - Students are able to interpret and respond to dive ...	1	1	5.14	1.36	28	156	72	21	0	0	YES
8.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	13.29	1.58	39	252	54	36	8	16	YES
Total	8	8	56	0	27	32	68	30	6	13	

Table 8.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 8
Number of Assessment Items - 56

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
8.R.1 - Students are able to apply various reading strateg ...	2	2	20.71	3.33	2	0	100	0	YES	37	6	0.83	0.04	YES
8.R.2 - Students are able to evaluate text structures, lit ...	2	2	16.86	2.64	2	0	100	0	YES	30	5	0.83	0.06	YES
8.R.3 - Students are able to interpret and respond to dive ...	1	1	5.14	1.36	1	0	100	0	YES	9	2	1	0	YES
8.R.4 - Students are able to retrieve, analyze, synthesize ...	3	3	13.29	1.58	3	0	100	0	YES	24	3	0.82	0.06	YES
Total	8	8	56	0	2	0.71	100	0		25	11	0.87	0.09	

Table 8.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 8
Number of Assessment Items - 56

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
8.R.2 - Students are able to evaluate text structures, lit ...	YES	YES	YES	YES
8.R.3 - Students are able to interpret and respond to dive ...	NO	YES	YES	YES
8.R.4 - Students are able to retrieve, analyze, synthesize ...	YES	YES	YES	YES

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	3	3	3	3	3	3	3
4	3	3	3	3	3	3	3
5	3	3	3	3	3	3	3
6	2	2	2	2	2	2	2
7	2	2	3	3	3	2	3
8	2	2	2	2	3	2	2
9	3	2	2	3	3	3	2
10	3	3	3	3	3	2	2
21	2	2	2	2	2	2	2
22	2	2	2	2	2	2	3
23	2	2	2	2	2	2	3
24	2	2	2	2	2	2	2
25	2	2	2	3	2	2	2
26	2	1	2	2	2	2	2
27	2	2	2	2	2	2	2
28	2	2	2	2	3	2	3
29	2	2	2	3	3	2	2
30	2	2	2	2	3	2	2
31	2	2	2	2	2	2	3
32	3	3	3	3	3	3	3
33	2	2	2	2	2	2	2
34	2	2	2	2	2	2	2
35	2	2	2	3	2	2	3
46	2	2	2	2	2	2	3
47	2	2	2	2	2	2	2
48	2	2	2	2	2	2	2
49	3	2	3	3	3	3	3
50	3	3	3	2	3	3	3
51	2	2	2	2	2	2	3
52	2	2	2	2	2	2	2
53	2	2	3	2	3	2	3
54	2	2	1	2	2	2	1
55	2	2	2	2	2	2	3
56	2	2	2	2	2	2	3
57	2	2	2	2	2	3	2
58	2	2	1	2	1	2	2
59	3	2	3	2	3	3	3
60	2	2	2	2	2	2	2
61	2	3	3	3	2	2	3
62	2	2	2	2	2	2	2
63	2	2	2	2	3	1	2
64	2	2	2	2	2	2	3
65	3	2	3	3	3	2	2
66	2	2	2	3	3	2	3
67	2	2	2	2	2	1	2
68	2	2	2	2	2	2	2
69	2	2	2	3	2	2	2

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
70	3	2	3	3	3	2	3
71	2	2	2	2	3	2	2
72	3	2	2	3	2	2	2
73	2	2	2	2	2	2	3
74	2	1	2	2	2	2	1
75	2	2	2	2	2	2	3
76	2	2	2	3	3	2	2

Intraclass Correlation: 0.8774
Pairwise Comparison: 0.7338

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	8.R.1.2	1	8.R.1.2	1	8.R.1.2	1	8.R.1.2	1	8.R.1.2	1	8.R.1.2	1	8.R.1.2
2	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1
3	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1
4	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1
5	3	8.R.1.2	3	8.R.1.2	3	8.R.1.2	3	8.R.1.2	3	8.R.1.2	3	8.R.1.2	3	8.R.1.2
6	2	8.R.4.1	2	8.R.4.2	2	8.R.4.1	2	8.R.4.1	2	8.R.4.2	2	8.R.4.2	2	8.R.4.2
7	2	8.R.4.2	2	8.R.4.2	3	8.R.4.2	3	8.R.4.2	3	8.R.4.2	2	8.R.4.2	3	8.R.4.3
8	2	8.R.4.2	2	8.R.2.1	2	8.R.4.2	2	8.R.4.2	3	8.R.4.2	2	8.R.2.1	2	8.R.2.1
9	3	8.R.4.3	2	8.R.1.2	2	8.R.4.2	3	8.R.1.2	3	8.R.4.2	3	8.R.4.2	2	8.R.4.2
10	3	8.R.4.3	3	8.R.4.3	3	8.R.4.3	3	8.R.4.3	3	8.R.4.3	2	8.R.4.3	2	8.R.2.1
21	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2
22	2	8.R.2.2	2	8.R.1.1	2	8.R.2.2	2	8.R.1.1	2	8.R.2.2	2	8.R.1.2	3	8.R.2.2
23	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.4.2	2	8.R.2.1	2	8.R.2.1	3	8.R.2.1
24	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.1.2
25	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	3	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2
26	2	8.R.1.2	1	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.2.1
27	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.4.1
28	2	8.R.4.1	2	8.R.4.2	2	8.R.4.1	2	8.R.4.2	3	8.R.4.1	2	8.R.4.1	3	8.R.3.1
29	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	3	8.R.1.2	3	8.R.1.2	2	8.R.1.2	2	8.R.2.2
30	2	8.R.1.2	2	8.R.1.1	2	8.R.1.2	2	8.R.1.2	3	8.R.2.1	2	8.R.1.2	2	8.R.1.2
31	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	3	8.R.4.2
32	3	8.R.4.3	3	8.R.2.1	3	8.R.3.1	3	8.R.3.1	3	8.R.2.1	3	8.R.3.1	3	8.R.3.1
33	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2
34	2	8.R.4.1	2	8.R.4.2	2	8.R.4.1	2	8.R.4.1	2	8.R.4.2	2	8.R.4.1	2	8.R.1.2
35	2	8.R.4.2	2	8.R.4.2	2	8.R.4.2	3	8.R.4.1	2	8.R.4.2	2	8.R.4.3	3	8.R.4.2
46	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.2	2	8.R.1.1	3	8.R.1.2
47	2	8.R.1.2	2	8.R.2.1	2	8.R.1.2	2	8.R.1.2	2	8.R.2.1	2	8.R.1.2	2	8.R.2.1
48	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.2
49	3	8.R.3.1	2	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1
50	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1	2	8.R.3.1	3	8.R.3.1	3	8.R.3.1	3	8.R.3.1
51	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.1.2	2	8.R.4.1	2	8.R.4.1	3	8.R.4.1
52	2	8.R.2.2	2	8.R.1.2	2	8.R.2.1	2	8.R.2.2	2	8.R.2.2	2	8.R.1.2	2	8.R.2.2
53	2	8.R.2.1	2	8.R.2.1	3	8.R.2.1	2	8.R.3.1	3	8.R.2.1	2	8.R.2.1	3	8.R.3.1
54	2	8.R.1.1	2	8.R.1.1	1	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	1	8.R.1.1
55	2	8.R.3.1	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.3.1	2	8.R.1.2	3	8.R.3.1
56	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.4.3	2	8.R.1.2	3	8.R.1.2
57	2	8.R.3.1	2	8.R.3.1	2	8.R.1.2	2	8.R.3.1	2	8.R.3.1	3	8.R.1.2	2	8.R.3.1
58	2	8.R.1.1	2	8.R.1.1	1	8.R.1.1	2	8.R.1.1	1	8.R.1.1	2	8.R.1.1	2	8.R.1.1
59	3	8.R.2.1	2	8.R.2.1	3	8.R.2.1	2	8.R.2.1	3	8.R.2.2	3	8.R.1.2	3	8.R.2.1

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.4.1	2	8.R.4.3	2	8.R.4.1	2	8.R.4.2
61	2	8.R.4.2	3	8.R.4.2	3	8.R.4.2	3	8.R.4.2	2	8.R.4.2	2	8.R.4.2	3	8.R.4.1
62	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.2.2	2	8.R.1.2
63	2	8.R.2.1	2	8.R.4.2	2	8.R.4.2	2	8.R.1.2	3	8.R.1.2	1	8.R.1.2	2	8.R.1.2
64	2	8.R.1.2	2	8.R.2.1	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	2	8.R.2.1	3	8.R.2.1
65	3	8.R.4.1	2	8.R.4.1	3	8.R.4.3	3	8.R.4.1	3	8.R.4.1	2	8.R.4.3	2	8.R.4.1
66	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	3	8.R.2.1	3	8.R.2.1	2	8.R.2.1	3	8.R.2.1
67	2	8.R.1.2	2	8.R.2.1	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	1	8.R.1.2	2	8.R.2.1
68	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1
69	2	8.R.2.2	2	8.R.2.2	2	8.R.2.1	3	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1
70	3	8.R.2.1	2	8.R.2.1	3	8.R.2.1	3	8.R.2.1	3	8.R.2.1	2	8.R.2.1	3	8.R.2.1
71	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	3	8.R.2.1	2	8.R.1.1	2	8.R.1.1
72	3	8.R.2.1	2	8.R.1.2	2	8.R.2.1	3	8.R.1.2	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1
73	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	2	8.R.2.1	3	8.R.2.1
74	2	8.R.1.1	1	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	2	8.R.1.1	1	8.R.1.1
75	2	8.R.4.2	2	8.R.1.2	2	8.R.4.2	2	8.R.4.2	2	8.R.4.2	2	8.R.1.2	3	8.R.4.3
76	2	8.R.1.2	2	8.R.1.2	2	8.R.1.2	3	8.R.1.2	3	8.R.1.2	2	8.R.1.2	2	8.R.1.2

Objective Pairwise Comparison: 0.6854
Standard Pairwise Comparison: 0.7942

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 8

Low		Medium		High
0		5.157895		7

1 2107229	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2
2 2107230	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
3 2107233	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
4 3316980	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1
5 3305170	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2
6 3541273	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2
7 3541390	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.3
8 3541393	8.R.2.1	8.R.2.1	8.R.2.1	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2
9 3541359	8.R.1.2	8.R.1.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.3
10 3541400	8.R.2.1	8.R.4.3	8.R.4.3	8.R.4.3	8.R.4.3	8.R.4.3	8.R.4.3
21 2107246	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
22 2107247	8.R.1.1	8.R.1.1	8.R.1.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
23 2107249	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.4.2
24 2107251	8.R.1.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
25 2107253	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2
26 2107254	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1
27 2107255	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.4.1
28 3541275	8.R.3.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.2	8.R.4.2
29 2107258	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.2
30 2107260	8.R.1.1	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1
31 2107261	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.2
32 3316975	8.R.2.1	8.R.2.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.4.3
33 2107263	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
34 3541353	8.R.1.2	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.2	8.R.4.2
35 3542669	8.R.4.1	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.3
46 3316796	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.2	8.R.1.2
47 2107279	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1	8.R.2.1	8.R.2.1
48 3316798	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.2
49 3316955	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1
50 3316801	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1
51 3316958	8.R.1.2	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1
52 2177864	8.R.1.2	8.R.1.2	8.R.2.1	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
53 3305196	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.3.1	8.R.3.1
54 3305189	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1
55 3305193	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.3.1	8.R.3.1	8.R.3.1
56 3305198	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.4.3
57 3305194	8.R.1.2	8.R.1.2	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1	8.R.3.1
58 3305190	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1
59 3541270	8.R.1.2	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.2
60 3541355	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.2	8.R.4.3

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 8

61 3541692	8.R.4.1	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2
62 3555485	8.R.1.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2	8.R.2.2
63 3555501	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1	8.R.4.2	8.R.4.2
64 3555825	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1	8.R.2.1	8.R.2.1
65 3555817	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.1	8.R.4.3	8.R.4.3
66 3316781	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
67 3316783	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.2.1	8.R.2.1
68 3305173	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1
69 2107266	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.2	8.R.2.2
70 2107269	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
71 3316966	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.2.1
72 2177859	8.R.1.2	8.R.1.2	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
73 2177861	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1	8.R.2.1
74 3316962	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1	8.R.1.1
75 2107274	8.R.1.2	8.R.1.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.2	8.R.4.3
76 2107275	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2	8.R.1.2

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 8

Low		Medium		High
0		30.15385		97

8.R.1																				
8.R.1.1	22	22	30	46	46	46	46	46	48	48	48	48	48	48	54	54	54	54	54	54
	54	58	58	58	58	58	58	58	68	68	68	68	68	68	68	71	71	71	71	
	71	71	74	74	74	74	74	74	74											
8.R.1.2	1	1	1	1	1	1	1	5	5	5	5	5	5	5	9	9	22	24	25	25
	25	25	25	25	25	26	26	26	26	26	26	27	27	27	27	27	27	29	29	
	29	29	29	29	30	30	30	30	30	34	46	46	47	47	47	47	48	51	52	
	52	55	55	55	55	56	56	56	56	56	56	57	57	59	62	63	63	63	63	
	64	64	64	64	67	67	67	67	67	72	72	75	75	76	76	76	76	76	76	
	76																			
8.R.2																				
8.R.2.1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	8	8	8	10	23	23
	23	23	23	23	26	30	32	32	47	47	47	52	53	53	53	53	53	59	59	
	59	59	59	63	64	64	64	66	66	66	66	66	66	66	67	67	69	69	69	
	69	69	70	70	70	70	70	70	70	71	72	72	72	72	72	73	73	73	73	
	73	73	73																	
8.R.2.2	21	21	21	21	21	21	21	22	22	22	22	24	24	24	24	24	24	29	33	33
	33	33	33	33	33	52	52	52	52	59	62	62	62	62	62	62	69	69		
8.R.3																				
8.R.3.1	4	4	4	4	4	4	4	28	32	32	32	32	49	49	49	49	49	49	49	50
	50	50	50	50	50	50	53	53	55	55	55	57	57	57	57	57				
8.R.4																				
8.R.4.	6	6	6	2	2	2	2	2	3	3	3	3	3	3	3	3	3	3	3	5

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 8

1				7	8	8	8	8	1	1	1	1	1	1	4	4	4	4	5	1
	51	51	51	51	51	60	60	60	60	60	61	65	65	65	65	65				
8.R.4.2	6	6	6	6	7	7	7	7	7	7	8	8	8	8	9	9	9	9	23	28
	28	31	34	34	35	35	35	35	35	60	61	61	61	61	61	61	63	63	75	
	75	75	75																	
8.R.4.3	7	9	10	10	10	10	10	10	32	35	56	60	65	65	75					

Table 8.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 8

Low		Medium		High
1		3		7

8.R.1													
8.R.1.1	22:2	30:1	46:5	48:6	54:7	58:7	68:7	71:6	74:7				
8.R.1.2	1:7	5:7	9:2	22:1	24:1	25:7	26:6	27:6	29:6	30:5	34:1	46:2	47:4
	48:1	51:1	52:2	55:4	56:6	57:2	59:1	62:1	63:4	64:4	67:5	72:2	75:2
	76:7												
8.R.2													
8.R.2.1	2:7	3:7	8:3	10:1	23:6	26:1	30:1	32:2	47:3	52:1	53:5	59:5	63:1
	64:3	66:7	67:2	69:5	70:7	71:1	72:5	73:7					
8.R.2.2	21:7	22:4	24:6	29:1	33:7	52:4	59:1	62:6	69:2				
8.R.3													
8.R.3.1	4:7	28:1	32:4	49:7	50:7	53:2	55:3	57:5					
8.R.4													
8.R.4.1	6:3	27:1	28:4	31:6	34:4	35:1	51:6	60:5	61:1	65:5			
8.R.4.2	6:4	7:6	8:4	9:4	23:1	28:2	31:1	34:2	35:5	60:1	61:6	63:2	75:4
8.R.4.3	7:1	9:1	10:6	32:1	35:1	56:1	60:1	65:2	75:1				

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 8

Low		Medium		High
1		3		7

1 2107229	8.R.1.2:7		
2 2107230	8.R.2.1:7		
3 2107233	8.R.2.1:7		
4 3316980	8.R.3.1:7		
5 3305170	8.R.1.2:7		
6 3541273	8.R.4.1:3	8.R.4.2:4	
7 3541390	8.R.4.2:6	8.R.4.3:1	
8 3541393	8.R.2.1:3	8.R.4.2:4	
9 3541359	8.R.1.2:2	8.R.4.2:4	8.R.4.3:1
10 3541400	8.R.2.1:1	8.R.4.3:6	
21 2107246	8.R.2.2:7		
22 2107247	8.R.1.1:2	8.R.1.2:1	8.R.2.2:4
23 2107249	8.R.2.1:6	8.R.4.2:1	
24 2107251	8.R.1.2:1	8.R.2.2:6	
25 2107253	8.R.1.2:7		
26 2107254	8.R.1.2:6	8.R.2.1:1	
27 2107255	8.R.1.2:6	8.R.4.1:1	
28 3541275	8.R.3.1:1	8.R.4.1:4	8.R.4.2:2
29 2107258	8.R.1.2:6	8.R.2.2:1	
30 2107260	8.R.1.1:1	8.R.1.2:5	8.R.2.1:1
31 2107261	8.R.4.1:6	8.R.4.2:1	
32 3316975	8.R.2.1:2	8.R.3.1:4	8.R.4.3:1
33 2107263	8.R.2.2:7		
34 3541353	8.R.1.2:1	8.R.4.1:4	8.R.4.2:2
35 3542669	8.R.4.1:1	8.R.4.2:5	8.R.4.3:1
46 3316796	8.R.1.1:5	8.R.1.2:2	
47 2107279	8.R.1.2:4	8.R.2.1:3	
48 3316798	8.R.1.1:6	8.R.1.2:1	
49 3316955	8.R.3.1:7		
50 3316801	8.R.3.1:7		
51 3316958	8.R.1.2:1	8.R.4.1:6	
52 2177864	8.R.1.2:2	8.R.2.1:1	8.R.2.2:4
53 3305196	8.R.2.1:5	8.R.3.1:2	
54 3305189	8.R.1.1:7		
55 3305193	8.R.1.2:4	8.R.3.1:3	
56 3305198	8.R.1.2:6	8.R.4.3:1	
57 3305194	8.R.1.2:2	8.R.3.1:5	
58 3305190	8.R.1.1:7		
59 3541270	8.R.1.2:1	8.R.2.1:5	8.R.2.2:1
60 3541355	8.R.4.1:5	8.R.4.2:1	8.R.4.3:1

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 8

61 3541692	8.R.4.1:1	8.R.4.2:6	
62 3555485	8.R.1.2:1	8.R.2.2:6	
63 3555501	8.R.1.2:4	8.R.2.1:1	8.R.4.2:2
64 3555825	8.R.1.2:4	8.R.2.1:3	
65 3555817	8.R.4.1:5	8.R.4.3:2	
66 3316781	8.R.2.1:7		
67 3316783	8.R.1.2:5	8.R.2.1:2	
68 3305173	8.R.1.1:7		
69 2107266	8.R.2.1:5	8.R.2.2:2	
70 2107269	8.R.2.1:7		
71 3316966	8.R.1.1:6	8.R.2.1:1	
72 2177859	8.R.1.2:2	8.R.2.1:5	
73 2177861	8.R.2.1:7		
74 3316962	8.R.1.1:7		
75 2107274	8.R.1.2:2	8.R.4.2:4	8.R.4.3:1
76 2107275	8.R.1.2:7		

Table 8.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Reading 2008 Grade 8

Low DOK		Matched DOK		High DOK
1		3		7

8.R.1 [2]:													
8.R.1.1 [2]:	22:2 [2]	30:1 [2]	46:5 [2]	48:6 [2]	54:7 [1.71]	58:7 [1.71]	68:7 [2]	71:6 [2]	74:7 [1.71]				
8.R.1.2 [2]:	1:7[1]	5:7[3]	9:2[2.5]	22:1 [2]	24:1 [2]	25:7 [2.14]	26:6 [1.83]	27:6 [2]	29:6 [2.33]	30:5 [2]	34:1 [2]	46:2 [2.5]	47:4 [2]
	48:1 [2]	51:1 [2]	52:2 [2]	55:4 [2]	56:6 [2.17]	57:2 [2.5]	59:1 [3]	62:1 [2]	63:4 [2]	64:4 [2]	67:5 [1.8]	72:2 [2.5]	75:2 [2]
	76:7 [2.29]												
8.R.2 [3]:													
8.R.2.1 [3]:	2:7[2]	3:7[3]	8:3[2]	10:1 [2]	23:6 [2.17]	26:1 [2]	30:1 [3]	32:2 [3]	47:3 [2]	52:1 [2]	53:5 [2.4]	59:5 [2.6]	63:1 [2]
	64:3 [2.33]	66:7 [2.43]	67:2 [2]	69:5 [2.2]	70:7 [2.71]	71:1 [3]	72:5 [2.2]	73:7 [2.14]					
8.R.2.2 [2]:	21:7 [2]	22:4 [2.25]	24:6 [2]	29:1 [2]	33:7 [2]	52:4 [2]	59:1 [3]	62:6 [2]	69:2 [2]				
8.R.3 [3]:													
8.R.3.1 [3]:	4:7[3]	28:1 [3]	32:4 [3]	49:7 [2.86]	50:7 [2.86]	53:2 [2.5]	55:3 [2.33]	57:5 [2]					
8.R.4 [3]:													
8.R.4.1 [2]:	6:3[2]	27:1 [2]	28:4 [2.25]	31:6 [2]	34:4 [2]	35:1 [3]	51:6 [2.17]	60:5 [2]	61:1 [3]	65:5 [2.6]			
8.R.	6:4[	7:6[	8:4[	9:4[	23:1	28:2	31:1	34:2	35:5	60:1	61:6	63:2	75:4

Table 8.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 8

4.2 [3]:	2]	2.5]	2.25]	2.5]	[2]	[2]	[3]	[2]	[2.2]	[2]	[2.5]	[2]	[2]
8.R. 4.3 [3]:	7:1[3]	9:1[3]	10:6 [2.8 3]	32:1 [3]	35:1 [2]	56:1 [2]	60:1 [2]	65:2 [2.5]	75:1 [3]				

Table 11.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 11
Number of Assessment Items - 40

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
11.R.1 - Students are able to apply various reading strateg ...	1	1	2	1	100	14.57	2.38	YES
11.R.2 - Students are able to evaluate text structures, lit ...	2	2	3	2	100	12	1.41	YES
11.R.3 - Students are able to interpret and respond to dive ...	1	1	3	1	100	8.57	1.40	YES
11.R.4 - Students are able to retrieve, analyze, synthesize ...	1	1	3	1	100	4.86	1.55	NO
Total	5	5	2 3	1 4	20 80	40	0	

Table 11.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Reading 2008 Grade 11
Number of Assessment Items - 40

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
11.R.1 - Students are able to apply various reading strateg ...	1	1	14.57	2.38	14	240	73	12	12	5	YES
11.R.2 - Students are able to evaluate text structures, lit ...	2	2	12	1.41	74	444	26	22	0	0	NO
11.R.3 - Students are able to interpret and respond to dive ...	1	1	8.57	1.40	35	328	65	14	0	0	YES
11.R.4 - Students are able to retrieve, analyze, synthesize ...	1	1	4.86	1.55	92	378	8	9	0	0	NO
Total	5	5	40	0	56	32	41	29	2	5	

Table 11.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 11
Number of Assessment Items - 40

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
11.R.1 - Students are able to apply various reading strateg ...	1	1	14.57	2.38	1	0	100	0	YES	36	6	1	0	YES
11.R.2 - Students are able to evaluate text structures, lit ...	2	2	12	1.41	2	0	100	0	YES	30	4	0.84	0.10	YES
11.R.3 - Students are able to interpret and respond to dive ...	1	1	8.57	1.40	1	0	100	0	YES	21	3	1	0	YES
11.R.4 - Students are able to retrieve, analyze, synthesize ...	1	1	4.86	1.55	1	0	100	0	YES	12	4	1	0	YES
Total	5	5	40	0	1.25	0.43	100	0		25	10	0.96	0.09	

Table 11.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Reading 2008 Grade 11
Number of Assessment Items - 40

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
11.R.1 - Students are able to apply various reading strateg ...	YES	YES	YES	YES
11.R.2 - Students are able to evaluate text structures, lit ...	YES	NO	YES	YES
11.R.3 - Students are able to interpret and respond to dive ...	YES	YES	YES	YES
11.R.4 - Students are able to retrieve, analyze, synthesize ...	NO	NO	YES	YES

Table 11.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Reading 2008 Grade 11

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	2	2	1	2	2	2	2
2	3	3	3	3	3	3	3
3	2	2	2	2	2	2	2
4	2	2	2	2	2	2	3
5	2	3	2	2	2	2	2
6	3	3	3	3	2	3	3
7	2	2	2	2	2	2	2
8	3	3	3	2	3	2	3
9	2	2	2	2	2	2	2
10	3	3	3	2	3	3	3
11	2	1	3	2	2	2	2
12	2	2	2	2	2	2	2
13	2	2	2	2	3	2	2
14	2	2	2	2	2	3	2
15	1	2	1	2	3	2	2
16	3	2	3	2	2	3	2
17	2	2	2	2	1	2	2
28	3	2	2	3	3	2	3
29	2	2	2	2	2	2	1
30	2	2	3	3	2	2	3
31	2	2	2	2	2	2	2
32	2	2	2	2	2	2	3
33	2	3	2	2	2	2	2
34	3	2	2	3	3	2	3
35	2	2	2	2	1	2	2
36	3	2	3	3	3	3	3
37	3	3	3	3	3	3	3
38	3	3	3	3	3	3	3
49	2	2	2	2	2	2	2
50	2	2	2	2	2	2	2
51	2	2	2	2	2	2	2
52	2	2	2	2	2	2	2
53	3	2	2	3	3	2	3
54	3	2	2	3	3	2	2
55	2	2	2	3	3	2	2
56	2	1	2	2	2	2	2
57	2	1	1	2	1	2	2
58	2	1	1	1	1	2	2
59	2	2	2	2	2	2	3
60	2	2	2	2	2	2	2

Intraclass Correlation: 0.8737
Pairwise Comparison: 0.725

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	2	11.R.2.1	2	11.R.2.1	1	11.R.2.1	2	11.R.2.1	2	11.R.2.1	2	11.R.2.1	2	11.R.2.1
2	3	11.R.2.1	3	11.R.2.1	3	11.R.2.1	3	11.R.2.1	3	11.R.2.1	3	11.R.2.1	3	11.R.2.1
3	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1
4	2	11.R.1.1	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	3	11.R.2.1
5	2	11.R.4.1	3	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1
6	3	11.R.1.1	3	11.R.1.1	3	11.R.1.1	3	11.R.1.1	2	11.R.1.1	3	11.R.1.1	3	11.R.1.1
7	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
8	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	2	11.R.2.2	3	11.R.3.1	2	11.R.3.1	3	11.R.2.1
9	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
10	3	11.R.2.2	3	11.R.2.2	3	11.R.2.2	2	11.R.2.2	3	11.R.2.2	3	11.R.2.2	3	11.R.2.2
11	2	11.R.1.1	1	11.R.1.1	3	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1
12	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
13	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	2	11.R.1.1	3	11.R.1.1	2	11.R.1.1	2	11.R.1.1
14	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	3	11.R.1.1	2	11.R.1.1
15	1	11.R.1.1	2	11.R.1.1	1	11.R.1.1	2	11.R.1.1	3	11.R.1.1	2	11.R.1.1	2	11.R.1.1
16	3	11.R.3.1	2	11.R.3.1	3	11.R.3.1	2	11.R.3.1	2	11.R.1.1	3	11.R.3.1	2	11.R.3.1
17	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	1	11.R.1.1	2	11.R.4.1	2	11.R.4.1
28	3	11.R.2.2	2	11.R.2.1	2	11.R.2.2	3	11.R.2.1	3	11.R.2.2	2	11.R.2.2	3	11.R.2.1
29	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	1	11.R.1.1
30	2	11.R.2.1	2	11.R.2.1	3	11.R.2.1	3	11.R.3.1	2	11.R.3.1	2	11.R.3.1	3	11.R.2.1
31	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1
32	2	11.R.3.1	2	11.R.3.1	2	11.R.1.1	2	11.R.3.1	2	11.R.3.1	2	11.R.3.1	3	11.R.3.1
33	2	11.R.2.2	3	11.R.3.1	2	11.R.2.2	2	11.R.3.1	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
34	3	11.R.1.1	2	11.R.3.1	2	11.R.1.1	3	11.R.3.1	3	11.R.3.1	2	11.R.3.1	3	11.R.3.1
35	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.2.1	1	11.R.1.1	2	11.R.3.1	2	11.R.1.1
36	3	11.R.3.1	2	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1
37	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1
38	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1	3	11.R.3.1
49	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
50	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2	2	11.R.2.2
51	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1
52	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	2	11.R.1.1	2	11.R.2.2	2	11.R.1.1	2	11.R.1.1
53	3	11.R.1.1	2	11.R.4.1	2	11.R.1.1	3	11.R.4.1	3	11.R.1.1	2	11.R.4.1	3	11.R.4.1
54	3	11.R.3.1	2	11.R.4.1	2	11.R.3.1	3	11.R.3.1	3	11.R.3.1	2	11.R.3.1	2	11.R.3.1
55	2	11.R.3.1	2	11.R.4.1	2	11.R.3.1	3	11.R.3.1	3	11.R.3.1	2	11.R.3.1	2	11.R.1.1
56	2	11.R.1.1	1	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.4.1	2	11.R.1.1
57	2	11.R.1.1	1	11.R.1.1	1	11.R.1.1	2	11.R.1.1	1	11.R.1.1	2	11.R.1.1	2	11.R.1.1
58	2	11.R.1.1	1	11.R.1.1	1	11.R.1.1	1	11.R.1.1	1	11.R.1.1	2	11.R.1.1	2	11.R.1.1
59	2	11.R.1.1	2	11.R.2.1	2	11.R.1.1	2	11.R.1.1	2	11.R.1.1	2	11.R.4.1	3	11.R.2.1

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Reading 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
60	2	11.R.1.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1	2	11.R.4.1

Objective Pairwise Comparison: 0.7929
Standard Pairwise Comparison: 0.8095

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Reading 2008 Grade 11

Low		Medium		High
0		4.666667		7

1 2108478	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1
2 2108479	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1
3 2108482	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
4 2108483	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1	11.R.2.1	11.R.2.1
5 2108484	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1
6 2108485	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
7 2177878	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
8 3555959	11.R.2.1	11.R.2.2	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
9 2177885	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
10 2177888	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
11 2108513	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
12 2108515	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
13 2108516	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1
14 2108519	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
15 2108520	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
16 3305046	11.R.1.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
17 2108521	11.R.1.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1
28 3305069	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
29 2108510	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
30 3305038	11.R.2.1	11.R.2.1	11.R.2.1	11.R.2.1	11.R.3.1	11.R.3.1	11.R.3.1
31 2108493	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1
32 3305039	11.R.1.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
33 2177891	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.3.1	11.R.3.1
34 2108491	11.R.1.1	11.R.1.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
35 3555996	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1	11.R.3.1
36 3555983	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
37 3555987	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
38 3555982	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1
49 2177902	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
50 2177903	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2	11.R.2.2
51 2177904	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1
52 2177906	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1	11.R.2.2
53 3305063	11.R.1.1	11.R.1.1	11.R.1.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1
54 3305061	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.4.1
55 3305060	11.R.1.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.3.1	11.R.4.1
56 2108522	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.4.1
57 2108523	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
58 2108524	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1
59 3305050	11.R.1.1	11.R.1.1	11.R.1.1	11.R.1.1	11.R.2.1	11.R.2.1	11.R.4.1
60 2108529	11.R.1.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1	11.R.4.1

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Reading 2008 Grade 11

Low		Medium		High
0		28		102

11.R.1																				
11.R.1.1	3	3	3	3	3	3	3	4	4	4	4	6	6	6	6	6	6	6	11	11
	11	11	11	11	11	13	13	13	13	13	13	14	14	14	14	14	14	14	15	
	15	15	15	15	15	15	16	17	29	29	29	29	29	29	29	32	34	34	35	
	35	35	35	35	51	51	51	51	51	51	52	52	52	52	52	53	53	53	55	
	56	56	56	56	56	56	57	57	57	57	57	57	57	58	58	58	58	58	58	
	58	59	59	59	59	60														
11.R.2																				
11.R.2.1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	4	4	4	8	13	28
	28	28	30	30	30	30	35	51	52	59	59									
11.R.2.2	7	7	7	7	7	7	7	8	9	9	9	9	9	9	9	10	10	10	10	10
	10	10	12	12	12	12	12	12	12	28	28	28	28	33	33	33	33	33	49	
	49	49	49	49	49	49	50	50	50	50	50	50	50	52						
11.R.3																				
11.R.3.1	8	8	8	8	8	16	16	16	16	16	16	30	30	30	32	32	32	32	32	32
	33	33	34	34	34	34	34	35	36	36	36	36	36	36	36	37	37	37	37	
	37	37	37	38	38	38	38	38	38	38	54	54	54	54	54	54	55	55	55	
	55	55																		
11.R.4																				
11.R.4.1	5	5	5	5	5	5	5	17	17	17	17	17	17	31	31	31	31	31	31	31
	53	53	53	53	54	55	56	59	60	60	60	60	60	60						

Table 11.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Reading 2008 Grade 11

Low		Medium		High
1		3		7

11.R.1													
11.R.1.1	3:7	4:4	6:7	11:7	13:6	14:7	15:7	16:1	17:1	29:7	32:1	34:2	35:5
	51:6	52:5	53:3	55:1	56:6	57:7	58:7	59:4	60:1				
11.R.2													
11.R.2.1	1:7	2:7	4:3	8:1	13:1	28:3	30:4	35:1	51:1	52:1	59:2		
11.R.2.2	7:7	8:1	9:7	10:7	12:7	28:4	33:5	49:7	50:7	52:1			
11.R.3													
11.R.3.1	8:5	16:6	30:3	32:6	33:2	34:5	35:1	36:7	37:7	38:7	54:6	55:5	
11.R.4													
11.R.4.1	5:7	17:6	31:7	53:4	54:1	55:1	56:1	59:1	60:6				

Table 11.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Reading 2008 Grade 11

Low		Medium		High
1		3		7

1 2108478	11.R.2.1:7		
2 2108479	11.R.2.1:7		
3 2108482	11.R.1.1 :7		
4 2108483	11.R.1.1 :4	11.R.2.1:3	
5 2108484	11.R.4.1:7		
6 2108485	11.R.1.1 :7		
7 2177878	11.R.2.2:7		
8 3555959	11.R.2.1:1	11.R.2.2:1	11.R.3.1:5
9 2177885	11.R.2.2:7		
10 2177888	11.R.2.2:7		
11 2108513	11.R.1.1 :7		
12 2108515	11.R.2.2:7		
13 2108516	11.R.1.1 :6	11.R.2.1:1	
14 2108519	11.R.1.1 :7		
15 2108520	11.R.1.1 :7		
16 3305046	11.R.1.1 :1	11.R.3.1:6	
17 2108521	11.R.1.1 :1	11.R.4.1:6	
28 3305069	11.R.2.1:3	11.R.2.2:4	
29 2108510	11.R.1.1 :7		
30 3305038	11.R.2.1:4	11.R.3.1:3	
31 2108493	11.R.4.1:7		
32 3305039	11.R.1.1 :1	11.R.3.1:6	
33 2177891	11.R.2.2:5	11.R.3.1:2	
34 2108491	11.R.1.1 :2	11.R.3.1:5	
35 3555996	11.R.1.1 :5	11.R.2.1:1	11.R.3.1:1
36 3555983	11.R.3.1:7		
37 3555987	11.R.3.1:7		
38 3555982	11.R.3.1:7		
49 2177902	11.R.2.2:7		
50 2177903	11.R.2.2:7		
51 2177904	11.R.1.1 :6	11.R.2.1:1	
52 2177906	11.R.1.1 :5	11.R.2.1:1	11.R.2.2:1
53 3305063	11.R.1.1 :3	11.R.4.1:4	
54 3305061	11.R.3.1:6	11.R.4.1:1	
55 3305060	11.R.1.1 :1	11.R.3.1:5	11.R.4.1:1
56 2108522	11.R.1.1 :6	11.R.4.1:1	
57 2108523	11.R.1.1 :7		
58 2108524	11.R.1.1 :7		
59 3305050	11.R.1.1 :4	11.R.2.1:2	11.R.4.1:1
60 2108529	11.R.1.1 :1	11.R.4.1:6	

Table 11.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Reading 2008 Grade 11

Low DOK		Matched DOK		High DOK
1		3		7

11.R.1 [2]:													
11.R.1.1 [2]:	3:7[2]	4:4[2]	6:7[2.86]	11:7[2]	13:6[2.17]	14:7[2.14]	15:7[1.86]	16:1[2]	17:1[1]	29:7[1.86]	32:1[2]	34:2[2.5]	35:5[1.8]
	51:6[2]	52:5[2]	53:3[2.67]	55:1[2]	56:6[1.83]	57:7[1.57]	58:7[1.43]	59:4[2]	60:1[2]				
11.R.2 [3]:													
11.R.2.1 [3]:	1:7[1.86]	2:7[3]	4:3[2.33]	8:1[3]	13:1[2]	28:3[2.67]	30:4[2.5]	35:1[2]	51:1[2]	52:1[2]	59:2[2.5]		
11.R.2.2 [3]:	7:7[2]	8:1[2]	9:7[2]	10:7[2.86]	12:7[2]	28:4[2.5]	33:5[2]	49:7[2]	50:7[2]	52:1[2]			
11.R.3 [3]:													
11.R.3.1 [3]:	8:5[2.8]	16:6[2.5]	30:3[2.33]	32:6[2.17]	33:2[2.5]	34:5[2.6]	35:1[2]	36:7[2.86]	37:7[3]	38:7[3]	54:6[2.5]	55:5[2.4]	
11.R.4 [3]:													
11.R.4.1 [3]:	5:7[2.14]	17:6[2]	31:7[2]	53:4[2.5]	54:1[2]	55:1[2]	56:1[2]	59:1[2]	60:6[2]				

Appendix C

Reviewers' Notes and Source-of-Challenge Comments

South Dakota
Grades 3-8 and 11
Reading
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.5

Comments made by reviewers on items identified as having a Source-of-Challenge issue by item number.

Tables *grade*.7

All notes made by reviewers on items by item number.

Table 3.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 3

Item Number	Comments by Reviewer

Table 3.7
Notes by Reviewer
South Dakota Reading 2008 Grade 3

Item Number	Comments by Reviewer
7	Seven items of decoding and word recognition in isolation are too many of this type. Greater emphasis should be put on context and comprehension.
14	This item requires prior knowledge. Question if this item measures reading comprehension or prior knowledge.
32	Could be two correct answers.
33	"Correct" answer may not be the "best" answer.
65	Rephrase item stem to include "bold" print instead of "dark" print.

Table 4.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 4

Item Number	Comments by Reviewer
51	It is difficult to distinguish the small fish from the large one in the illustration. I looked at it for over a minute without seeing the smal fish.
51	There is no correct answer to this question. Please consider removing this question from the test.
52	It is difficult to distinguish the small fish from the large one in the illustration. I looked at it for over a minute without seeing the smal fish.
53	This is a poorly worded question. I gave it a reading level 3 because it was very difficult to comprehend. Please consider removing this question from the test.
54	The passage is too long for the number of questions.
75	International question

Table 4.7
Notes by Reviewer
South Dakota Reading 2008 Grade 4

Item Number	Comments by Reviewer
51	The graphic on this item is very poor. The wrasse looks like a fin on the larger fish. Coders all had trouble with this item. What will it be like for a 4th grader?
51	This question is based on the illustration. It is a very poor illustration, I could not see the other fish on the big fish until it was pointed out. I think this would be a big disadvantage to most students and the item wouldn't really measure what we want it to.
51	The wrasse is difficult to see in the picture.
51	This picture is very misleading; hard to see fish on fish. Picture should show smaller fish heading toward mouth of larger fish.
51	Question ask for student to refer to illustration to determine why the size of the animal helps it do it's job. However, the picture is such that it is difficult to see the smaller animal. Poor illustration.
52	You wouldn't really need the story to answer this question. So that leaves 1 poor question (#1), one question not about the story (#2) and another not so good item for a full page passage. Not sure this passage and items are worth the paper.
53	A fairly detailed passage, "A Brave Helper," is followed by only three fairly basic questions.
55	Item is not passage specific. That means that developers got only one item, #54, from this entire passage.
55	There are only 2 items for this full page passage. The second item is a vocabulary question that could be asked in absence of the passage. Not sure this passage and items are worth the paper and time.
55	The full-page passage "Ring on a String" has only two fairly basic questions following it.
55	The story this item relates to is the directions to a cute Columbian game. However, there are only two questions that relate to the directions and both can be answered without reading the directions.
68	Item stem is misleading as reader is directed to look at the bold words (there are two sets); only one set is used to determine the answer to this item. (There is nothing about science ("Science and Drongo Birds") in this item.
70	This is a good item. It focuses on the language the author used to show the main character.
72	A fairly long and interesting story about a boy's brush with the Lewis & Clark Expedition is followed by only 3 questions.
75	The question specifying "an article about Asian culture" doesn't really seem to connect with the answer choices given, or may even suggest some stereotyping. At least one of the answer choices is negative.
75	Item is very biased with re: to answer choices; reword or eliminate.

Table 5.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 5

Item Number	Comments by Reviewer
11	Students who had been to Hawaii might find this item easier than those who had not. They would know that Hawaii, the big island, was being referred to.
11	Hawaii is the name of an island and it is also a reference to the group of islands. Unless the students have had a geography lesson on it, this could cause confusion for students that would lead to incorrect answers that truly don't measure the standard.
11	specialized knowledge could be a factor in student performance. Those who have been to Hawaii would do much better on this item.
11	The title of the map "Hawaii" may be a source of bias and confusion for some students.
25	Indicate that you must also use the chart to answer this question.
53	None of the answers is really correct as there is no evidence on either the boxes or in the letter for what is supposedly the correct letter.
53	There is no information about buying the cereal in order to get the sweatshirt. This is completely prior knowledge with no passage based information.
58	The pictures referred to are on the preceding page. Students may not know which pictures are being referred to.
74	The illustration is black and white. It cannot show how the body is colored.

Table 5.7
Notes by Reviewer
South Dakota Reading 2008 Grade 5

Item Number	Comments by Reviewer
11	The key is hard to read. Use more contrast or color.
12	This passage may be considered multicultural but no items were coded to 5.R.3.1.
16	Poor item. Discard.
26	Number paragraphs for ease of reading for students or state "last paragraph" instead of paragraph 7.
27	Give students an instructional sentence to read at the top of the item; otherwise they will skip to the answers without reading the chart.
28	Item is misplaced since it refers to the selection, not the graph; it makes more sense to put it before the item where students have to interpret the chart.
30	Could also be coded to 5.R.2.2 as it refers to plot as a literary element. Could also be coded as sequence in 5.R.2.1
37	I appreciate the inclusion of the tale from West Africa, and wonder if the cultural dimension could have been referenced in at least one item (per Standard 5.R.3.1.
38	Responses are all very close. Sounds as if there may be more than one correct answer.
51	this seems like a very artificial task. Who would ever outline a letter?
53	Illustration of sweatshirt does not show pocket on outside as writer of letter indicates.
57	Very confusing format. Need an introductory sentence to focus reader. Reader needs to infer a great deal to understand this item. It is not clear!
58	Item 57 is misplaced; it refers to the pictures next to the selection; item 57 should be placed after item 61, the last item in this series.
65	Passage might be considered multicultural but items 62 to 68 do not address that standard.
68	Item and responses should reflect a positive, not a negative, image of children in Puerto Rico. This appears biased.
75	Number the paragraphs for the students for ease of reading.
76	This item is a stretch to address this standard.

Table 6.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 6

Item Number	Comments by Reviewer

Table 6.7
Notes by Reviewer
South Dakota Reading 2008 Grade 6

Item Number	Comments by Reviewer
9	Where is the excerpt from Healthy You magazine students are supposed to refer to?
10	Where is the brochure students are supposed to refer to? These last two items have identical responses. Supply other answers for this item.
25	Number paragraph or at least bold word for ease of reading for students.
47	Bold or otherwise draw reader's attention to this word.
50	Not sure the answer is a true statement.
55	Bold or indicate word to be noticed in some other way.
57	I'm glad to see that the distractors all present positive cultural characteristics.
62	Cool poem!
71	Foils are very simple; a level 2 could be made by using other verbs that might fit as foils are not even the correct part of speech.

Table 7.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 7

Item Number	Comments by Reviewer

Table 7.7
Notes by Reviewer
South Dakota Reading 2008 Grade 7

Item Number	Comments by Reviewer
21	How is this item measuring reading comprehension of this passage if in the item stem the words "and other sources you have read" is part of the stem?
44	This items deals with sequence which isn't addressed by a specific standard but fits most closely to 7.R.2.

Table 8.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 8

Item Number	Comments by Reviewer
7	There was only one question for this reading selection.
75	There were only two questions for this reading passage.

Table 8.7
Notes by Reviewer
South Dakota Reading 2008 Grade 8

Item Number	Comments by Reviewer
6	No specific statement for genre at this grade level so placed in 4.2 evaluating sources.
25	The reader of a commercial test (i.e. students) might expect the first question to be on the first selection; in this way, this item could be construed as being "tricky."
27	In the absence of an objective statement about text features, this item is coded to details in 8.R.1.2.
46	Not sure if info about Latin root of submit is essential to understanding this item.
50	Do students know the meaning of suffrage?
51	Item stem is confusing. Add the title of the article to the item stem so it reads, "Which one of the following details from the text above is included in the article, "Mattie Knight and the Paper Bag."
52	Literary techniques not specifically listed at this grade level except at generic level.
61	The passage on Kandinsky's art provides interest and information about a topic to which not all students are exposed.
76	The full-page advertisement for camp counselors requires more reading and thought than are reflected in the two questions that follow it. Neither of the questions really requires the student to read the passage.

Table 11.5
Source-of-Challenge Issues by Reviewer
South Dakota Reading 2008 Grade 11

Item Number	Comments by Reviewer
6	This was a poorly written question. It would be a good one to ask with the title of the piece; however there appears to be no correct answer.

Table 11.7
Notes by Reviewer
South Dakota Reading 2008 Grade 11

Item Number	Comments by Reviewer
5	No specific objective related to fact/opinion at this grade level.
6	Of the four choices for pre-reading questions for the passage on quilts, none of the questions addressed the central focus of the piece.
6	Include and refer to title of selection for a more effective item.
7	Include just the words "land was resting" as the stem of this item.
17	Perhaps the intent of this item was to address fact/opinion. Yet when a fact is asked for and it is in the text, it is a low level item and a detail and coded that way, not as fact/opinion.
35	Some students may be very familiar with Thoreau as his works are frequently anthologized in American Literature.
38	Results for the items on the Thoreau passage may privilege those who have already studied Transcendentalism and Thoreau.

Appendix D

Debrief Summary Notes

South Dakota
Grades 3-8 and 11
Reading
2008

Table 3.15
Debriefing Summary
South Dakota Reading 2008 Grade 3

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Did not find many items on Personal connections 3R3.
· Standard on literary elements focuses on "comparison" of character, setting, plot, and rhyme patterns; items on these topics did not always involve comparison. Some items relating to non-fiction characters were best coded to the "character traits" element under "literary elements and devices," usually addressed to fictional characters.
· Yes, to a certain degree. Several items at the beginning focused on decoding, word structure, etc. They could be asked in context (possibly increasing the DOK level) and limited to fewer items; seems as if there is an overabundance of items on 3.R.4.1. (research) asked in a "proxy" way. Items seem to gloss over many important reading comprehension strategies (setting, problem-solution, characters [to some extent], main idea, supporting detail, author's purpose [especially in non-fiction passages]). Items that were on note taking (tables, charts, graphic organizers) were coded to 4.1 even though standard stem was on research. This is an example of the bullets not being consistent with the standard and forcing the coding.
· Each standard appears to address a variety of strategies. I feel that this approach is too broad and causes confusion when trying to tie the DOK to the standards.
· Very few questions related to diverse works, specifically various cultures and time periods. Difficult to write questions that connect personal traditions and experiences as backgrounds can be very diverse. Not many questions related to 3.R.4.1, specifically using features of a book to locate information.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Did not find too many DOK 3s.
· The first 7 items involved decoding and word recognition questions in isolation, a very basic level of DOK all clustered in one section and taking time and effort that might be used for more meaningful reading and comprehension tasks.
· Yes. I expected Levels 1, 2, and 3. There were many Level 2, too many. There were very few Level 3. Level 1 was used exclusively in the first 7 items, all in isolation.
· I felt that the items covered a variety of DOK levels and followed the expectations of the standards.
· DOK level 3 for standard 3.R.3 (see above) Synthesis and evaluation of a variety of informational text (3.R.4) is beyond the DOK level indicated (2) however, in addition, there are few questions that are written at that level either.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· I found these standards very hard to work with. There is some overlap, and not enough differences among some of the sub-points
· There is some overlap in these standards.
· There were some overlapping areas, particularly involving text features and text structures. In some cases, fairly lengthy passages involving considerable reading for a third grader were

followed by only three questions.
· No. Inference and main idea, two very important reading comprehension strategies, are not listed specifically in the standards. Neither was fact/opinion listed specifically but there were assessment items that were coded as comprehension strategies (3.R.1.2) On the other hand, text features are used as examples in three different standards; comprehension strategies (3.R.1.2), organization (3.R.1.3), and research (3.R.4.1). Lack of specificity may result in coding difficulty.
· I thought that the standards were not always written in concise, straightforward language that was easy to understand and interpret.
· Overall, the standards are consistent with expectations for students at this level.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (1) : 14%
iii. Needs slight improvement (5) : 71%
iv. Needs major improvement (1) : 14%

E. Comments

· Passages were quite varied and there was a substantial amount of text. I would have preferred getting more mileage out of some of the passages.
· The problem is the standards, because of some overlap especially in the bulleted areas, it was sometimes difficult to determine exactly which one it belonged to. Also some standards are too specific and the items are broader than the standard. In other words, I'm not sure the item really fits with the standards because the standard will have eliminated it.
· Many passages to read; one passage only has two items; seems like a lot for a third grader to read and then answer only 2 items. Several passages have only three questions to answer. The examples (bullets) in standards are overlapping, making it necessary to focus on the stem of the standard, but then it becomes necessary as a reviewer to add to the bulleted list (which can be done but may be subject to interpretation as to which bullet goes where.) Seven items coded to 3.R.1.1, Level 1; ok but seems like overkill, especially since these items do not measure reading comprehension in context. Nice selection of various genres: poetry, fiction, non-fiction, and directions.
· If the standards are to be the framework upon which our teaching and assessment is built, I believe that they should be written in a more precise and easily understood manner. They are often ambiguous in nature and leave too much room for personal interpretation; thus causing confusion and misrepresentation.

Table 4.15
Debriefing Summary
South Dakota Reading 2008 Grade 4

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Fairly good coverage of the various elements. Could use a few more items on 4.R.2.2.
· Yes. Items at this grade level did center more on reading essentials (character items, inference) than at previous grade level. However, 4.R.1.3 seems to overemphasize the use of the same text features (at least 3 bullets not used: glossary, sorting bold-faced words, and headings into questions). Did not use 4.R.4.2 either.
· No. For example, questions 51-53 were poorly written and would be very difficult for 4th grade students to comprehend. The illustration was not helpful in determining the answer in question 51. Also, in question 53, the words, "looking at" might serve to confuse students.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· I thought that the items were fairly easy. I think more DOK level three items are needed.
· In some cases, passages that are fairly long and rich are followed by a small number of questions written on a fairly basic level.
· Yes. I expected many Level 1 and 2 and that is what I coded. There were a few level 3.
· Except for those questions yes.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· I think that too much material is crowded into two few objectives. That means that one is always trying to find the right spot for an item. There is also some overlap among objectives.
· The level of interpretation expected of students seems rather low.
· Standards at this grade level are more specific than at the previous grade level; however, some holes still exist; no specific statement for main idea, inference, or fact/opinion; inference and main idea are essential to reading comprehension. Research standard is more fully defined.
· Yes, except for questions 51-53.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (2) : 29%
iii. Needs slight improvement (4) : 57%
iv. Needs major improvement (1) : 14%

E. Comments

· There are too few items for each passage. That means that students must read much more material. It would be possible to get more, richer items per passage. The passages themselves, are pretty good. More could be done with them.
· Fourth graders should be able to read longer passages; I would like to see fewer selections with more items; as in previous grade level one passage had only two items and neither one was content-related! (They asked about superficial material.)Several selections had only three items.

Table 4.15
Debriefing Summary
South Dakota Reading 2008 Grade 4

Good to have fewer Level 1 items coded to 4.R.1.1. Nevertheless, they still do not measure reading comprehension. Again, a variety of passages--poetry, fiction, non-fiction and directions; understanding other cultures was also evident in three selections, but one item (75) has some cultural bias as noted above.
· It seemed that overall there was a lack of higher level questions. Many passages were very rich in text however there were very few questions for the passage or the questions were very low level.

Table 5.15
Debriefing Summary
South Dakota Reading 2008 Grade 5

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes, I thought that most objectives were adequately addressed by items.
· Yes as best you can when there is overlap among the standards.
· Selections presented a good variety of genres and cultures, but these dimensions were not always reflected in the questions asked. The emphasis on reading strategies and research methods and resources was good.
· Yes, items covered a variety of standards; however, not all bullets were addressed in the items; little on figurative language even though mentioned in two standards. Some coding issues as graphic organizers are mentioned more than once. See note for item #12.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Although better than grades 3 and 4, there are still relatively few level 3 items.
· Based on the summary table I have 6 items coded to this standard that are below the standard DOK of 3. I'm thinking if this is true across other raters that there is a need for more rigorous items.
· Yes. Levels 1, 2, and 3 were all used. Many levels 2; a few more level 3 than at previous grade level.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Better than at earlier grades. Less overlap among the objectives. When there was some overlap, enough information was given in the descriptions to make assignment fairly easy.
· There is overlap that just isn't distinguishable so it is difficult to place some items in the right standard area.
· Standards improving with regard to their specificity as key ideas and inference are mentioned specifically. Author's purpose, important to reading comprehension, is still not mentioned as has been the case in previous grade levels.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (4) : 57%
iii. Needs slight improvement (3) : 43%

E. Comments

· Still too few items for some of the passages, and still a number of items that are not really reading items as they are not passage specific.
· I would think there should be more items to go with many of the stories. There's a lot of reading with 2-4 questions (some bad or don't really need the story to begin with).
· The passages from other cultures could have been used more to get at issues related to 5.R.3.1.
· Passages are multi cultural but items are not necessarily addressed to this standard.

Table 6.15
Debriefing Summary
South Dakota Reading 2008 Grade 6

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Could have included more figurative language items: 6.R.2.2 Otherwise, pretty good.
· Yes
· Reading passages presented a good variety of genres, purposes, and cultures.
· Yes, all standards were used at this grade level but items seemed to fall into rigid categories for that standard; (the same item stem was used over and over again for vocab in context; fact/opinion was used several times, sometimes more than once for the same passage. One bullet (out of two) under 6.R 4.3, credibility of facts, was not assessed.
· Yes, I thought that these standards were covered in a fairly clear cut manner. A variety of standards were assessed.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· There were a number of DOK 3s, but not well distributed across the standards and objectives
· There are quite a few standards written at a DOK of 3 and it seemed that most questions aligned to these standards didn't quite hit a level 3 so I have at least 3 standards where I am below the standard DOK. Not sure if the problem is me or the items.
· Yes. Levels 1, 2, and 3 were all used. Several items asked students to make comparison across two passages, or rather a passage and a sentence from another supposed passage.
· Due to the simplicity of some of the items I scored them at a lower DOK level than was expected by the standard.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Getting better with each grade level.
· Yes
· The standards at this level are much more clear and concise than the ones at grades 3-5. Very little overlap.
· Yes, standards are more specific at this grade level than at some previous grades (i.e. grade three); some specifics are missing, however (no specific statement about illustrations even though there were a few items about illustrations which were coded to inference (could also have been coded to text structure); no specific statements about character traits, setting, plot, and theme as we have seen in other grade levels; no statement on author's purpose either which has been missing at all grade levels, an essential reading comprehension strategy. Standard 6.R.2.1 states "text structures and patterns in various literary texts" and then bullet states "fiction, informational texts;" which is it? Idiom is not listed under figurative language even though there was one item on idioms.
· I was unsure what standard to use for illustrations and pictures. That should perhaps be addressed more clearly.

D. What is your general opinion of the alignment between the standards and assessment:

Table 6.15
Debriefing Summary
South Dakota Reading 2008 Grade 6

ii. Acceptable Alignment (6) : 86%
iii. Needs slight improvement (1) : 14%

E. Comments

· Objectives are dropped at various grade levels, but the test continues to include items for those objectives at subsequent grade levels and that means no place to code them that fits well.
· Items related to vocab in context all are written the same way, using a dictionary entry. There is more than one way to write a good item stem for vocab in context and could be used in this test development. Passages are varied in genre and cultures; poem was especially good selection.
· Overall, I believe that the alignment between the standards and assessments is the best among the grade levels that I have reviewed. Perhaps a more exhaustive list of items to be covered in each standard, such as idioms and onomatopoeia, could be included to enhance specificity.
· Nice variety of DOK levels and reading materials (i.e., poems, short story).

Table 7.15
Debriefing Summary
South Dakota Reading 2008 Grade 7

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Need more items 7.R.1.1 The poetry items on the test do not really address the features of poetry in the bullets.
· Yes
· The variety of passages reflected the breadth of the standards.
· Yes. I used all the standards in this grade level. Several items could be coded to more than one objective. For example, #55, could be coded to 1.1 (word choice); 2.1 (sensory detail); and 2.2 (literary elements.)
· Many of the items fell into standard 1.2. However, I felt that there was a good representation of assessed items per standard.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Much better balance among DOK levels than on previous tests.
· Yes. Levels 1, 2, and 3 were all used; level 3 was mostly used for items that connected one passage with one sentence from a supposed other passage.
· I rated some of the items higher than the DOK level for the standard. I did this because I felt that the students would have to synthesize information across the whole text, or multiple texts, in order to arrive at a conclusive answer.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Quite good at this level. Good separation.
· Text structure seems to have dropped off the standards so even though there were items written around text structure, they had to be coded to the indicator level.
· Standards are clear and concise.
· Yes, they are better than an earlier grade level (three); yet, there still are some important missing elements (a direct statement about author's purpose and figurative language, and text features). Otherwise they are adequate.
· For clarification purposes I believe that the standards should specifically state its inherent components. Examples include the terms "text features" and "illustrations or pictures".

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (6) : 86%
iii. Needs slight improvement (1) : 14%

E. Comments

· This was the best aligned grade level so far. Pretty good passages and pretty good items.
· I think the items in which students are asked to connect passages are a bit contrived as students have read one passage and with each item they are given another sentence from a supposed other

source; a few of these might be ok; but students at this grade level (and earlier) can answer questions about full, complete cross passages on the same topic (two poems which we saw in an earlier grade level; two short stories, a short story and a non-fiction piece, etc. etc.) This would be more authentic and would create fewer, longer passages rather than so many short, somewhat disjointed ones, making the assessment a truer measure of reading.

Table 8.15
Debriefing Summary
South Dakota Reading 2008 Grade 8

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Pretty good distribution of items across objectives.
· Yes
· Yes. LA topics are covered. All objs. were used.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Very few DOK 1s, which is probably a good thing owing to the coding of DOK for the objectives, which is high.
· Yes
· Yes, there were many level 3 items which is great at this grade level. A few level 1 could be tweaked into level 2.
· Overall there were some variances between the DOK levels and the standards. However, for the most part they were consistent.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Fairly specific, but there was some unexpected overlap. This occurred especially between 8.R.2.1 and the information retrieval objectives in 8.R.4
· There were only a few places where there was some overlap or lack of concepts that usually cause the problems for us. Fairly minimal with 8th grade.
· No. Many specific statements from previous grade levels are missing here yet there are items; text features, literary techniques in prose selections, fact/opinion, genre and graphic organizers all had to be coded to other objectives. There were persuasive items but no objective specifically related to this topic.
· There were some questions about various types of genre and where they belonged in relation to the standards.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (6) : 86%
iii. Needs slight improvement (1) : 14%

E. Comments

· I thought that there were some excellent items on this test, quite challenging and well distributed across the objectives. Best alignment so far, in my opinion.
· The items connected to 8R4.3 seemed to be something of a stretch.
· The reading passages were interesting and informative, particularly the ones about Mattie Knight and the art of Kandinsky.
· Passages are mature and appropriate for this grade level. High interest in topics. Various genres also presented. Good to see related passages of different genres that students had to compare.

Many times there was much reading to answer a few items. Again, would like to see fewer, longer passages.

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· I would expect items under 11.R.4.1 that looked at faulty logic. I found none that directly fit this, although a couple that might peripherally meet the object. Generally I felt that few items directly addressed the bullets in any of the objectives.
· No items addressed the standard related to "faulty logic techniques in expository text."
· Yes. Only 5 objectives at this grade level. The emphasis on historical and cultural aspects is a plus. Literary structures, elements, and devices are listed and examples given, but the same is not true of definitions and examples of informational pieces.
· I thought that the standards were very broad and sometimes it was difficult to place items within a specific standard.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Pretty good balance here.
· All the DOKs for the standards are at level 3 for 11sth grade. I don't think many of the questions were written at that level even though they were aligned to the content of the standard.
· Yes. There were many level 2 and level 3 and some level 1.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· There are too few objectives in my opinion and many times they are written in such a way that the items do not fit very well. I get the feeling that they were drawn from an item bank without any real attempt to address them to the objectives.
· No. Many items were coded under reading strategies but not listed specifically as we have seen in previous grade levels: fact/opinion, cause/effect, main idea, and summaries to name a few. I think the grade level expectation is ok, but not the specificity. Vocab in context, usually seen as a separate objective because of its frequent use, is not listed either. Objectives under R.11.2 deal with literary topics but do not mention information text even though there are informational passages. Nothing is mentioned about persuasive writing; research is defined in very different ways than in several previous grade levels.
· Sometimes it was hard to place items because of a lack of specificity. An example would include item number 37.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (2) : 29%
iii. Needs slight improvement (4) : 57%
iv. Needs major improvement (1) : 14%

Table 8.15
Debriefing Summary
South Dakota Reading 2008 Grade 8

E. Comments

· Although I liked the passages and sometimes the items, I did not feel that there was a good alignment. There may be an alignment, perhaps, but a forced rather than a real one.
· Several items appear to be written for standards that existed at other levels, but are no longer at this level.
· It's good to see passages with challenging intellectual content, e.g., accounts of archaeological discoveries and of American Transcendentalism. I also appreciated reading the biographical piece about the Paralympian.
· High school students should be able to compare and draw conclusions across passages. For example, there is a short poem with only two items; this could easily be paired with another passage on a similar topic, more items added for that passage, and cross-passage items added as well.
· Depth of knowledge/difficulty of items on this test compared to other, lower grade level test items seems to be easier.

APPENDIX P: Mathematics Alignment Report

REPORT

Alignment Analysis of Mathematics Standards and Assessments

South Dakota
Grades 3-8 and 11
2008

Norman L. Webb

October 25, 2008

Acknowledgements

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Mathematics

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Executive Summary

A three-day alignment institute was conducted in Sioux Falls, South Dakota to analyze the alignment between the mathematics standards and the assessments administered in the spring of 2008 for grades 3-8 and 11. Seven reviewers participated in the analysis, three from South Dakota and four from other states. The reviewers included mathematics education experts, classroom teachers, university professors, and a district mathematics coordinator.

The alignment between the mathematics assessment and standards was found to be at least acceptable for all seven grades. The grade 8 assessment and standards were fully aligned. The seven assessments, each with 84 items, had over six items for each of the five mathematics strands, enough to have an acceptable level for the Categorical Concurrence criterion for each strand for each grade. Range also was acceptable for all strands for all seven grades. For most assessments reviewers found at least one item for each of the approximately 20 underlying standards. The main alignment issue was a weak Depth-of-Knowledge Consistency criterion for one or two strands for a grade. On six of the seven assessments fewer than 50% of the items had a DOK level that was the same or higher than the DOK level of the assigned standard for one or two strands. From one to three items would need to be replaced to remove this weakness in DOK. There were also balance weaknesses, but these were associated with a weakness in DOK or where the overemphasis of a standard was considered more a matter of preference than a major alignment issue.

Overall, only one to three items would need to be replaced on six of the assessments to attain full alignment between the assessments and the standards (see the summary table below). As such, the alignment was considered acceptable for all grades. Reviewers did make a number of comments on how individual items could be improved. Reviewers felt the assessments were too long and the emphasis for some grades was missed place while some important topics were not assessed.

Summary Table
Percent of South Dakota Mathematics Standards with Acceptable Level on Each Alignment Criteria for Grade 3-8 and 11

Grade	*Categorical Concurrence* (six or more items)	*Depth-of-Knowledge Consistency* (50% at/above)	*Range of Knowledge* (50% of objectives)	*Balance of Representation* (without possible weakness)	*Estimated Range of Items per to be Added or Replaced for Full Alignment*
Grade 3	100	80	100	100	1
Grade 4	100	80	100	100	3
Grade 5	100	80	100	60	1
Grade 6	100	80	100	100	1
Grade 7	100	80	100	100	1
Grade 8	100	100	100	80	0
Grade 11	100	60	100	80	3

Categorical Concurrence	>6 items
Depth-of-Knowledge	>50% with DOK level the same or higher than level of corresponding Objectives
Range-of-Knowledge	>70% of objectives under a standard
Balance of Representation	A possible weakness if one or more objectives with a relative large number of items (e.g. five or more than the objective with the next highest number of items)

Alignment Analysis of Mathematics Standards and Assessments

South Dakota
Grades 3-8 and 11
2008

Norman L. Webb

Introduction

The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective standards-based education system. Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide an education system toward students learning what they are expected to know and do. As such, alignment is a quality of the relationship between expectations and assessments and not an attribute of any one of these two system components.

Alignment describes the match between expectations and an assessment that can be legitimately improved by changing either student expectations or the assessments. As a relationship between two or more system components, alignment is determined by using the multiple criteria described in detail in a National Institute for Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education* (Webb, 1997).

A three-day Alignment Analysis Institute was conducted September 29, 30, and October 1, 2008, in Sioux Falls, South Dakota. Seven reviewers—including mathematics content experts, district mathematics coordinator, university professors, assessment experts, and mathematics teachers—analyzed the agreement between the South Dakota assessments for mathematics and the South Dakota Mathematics Content Standards for grades 3-8 and 11. The assessments administered in April 2008 were used in this analysis. Four of the reviewers were from states other than South Dakota and three reviewers were from South Dakota.

South Dakota used the terminology of *goal/strand, indicator,* and *standard*. For mathematics the South Dakota content standards had five goal/strands—algebra (A), geometry (G), measurement (M), number sense (N), and statistics and probability (S). Indicators described key aspects of the goals/strands. The standards under the indicators specified what students are to know and be able to do related to the indicator at the specific grade level.

As part of the alignment institute, reviewers were trained to identify the depth of knowledge (DOK) of the standards and assessment items. This training included reviewing the definitions of the four DOK levels and reviewing examples of each. Then, the reviewers reviewed the DOK values determined through a consensus process in the

2007 analysis. Following the review of the complexity levels of the individual indicators, individuals analyzed the assessment items. Following individual analyses of the items, reviewers participated in a debriefing discussion in which they assessed the degree to which they had coded particular items to the standards.

To derive the results from the analysis, the reviewers' responses were averaged. Any variance among reviewers was considered legitimate, with the true DOK level for the item falling somewhere between the two or more assigned values. Such variation could signify a lack of clarity in how the standards were written, the robustness of an item that could legitimately correspond to more than one standard and/or a DOK that falls in between two of the four defined levels. Reviewers were allowed to identify one assessment item as corresponding to up to three standards—one primary hit (standard) and up to two secondary hits. However, reviewers could only code one DOK level to each assessment item, even if the item corresponded to more than one standard.

Reviewers were instructed to focus primarily on the alignment between the state's standards and assessments. However, reviewers were encouraged to offer their opinions on the quality of the standards or of the assessment activities/items by writing a note about the item. Reviewers also could indicate whether there was a source-of-challenge issue with the item—i.e., a problem with the item that might cause the student who knows the material to give a wrong answer or enable someone who does not have the knowledge being tested to answer the item correctly.

The results produced from the institute pertain only to the issue of alignment between the South Dakota Mathematics Content Standards and the assessments. Note that an alignment analysis of this nature does not serve as external verification of the general quality of the state's standards or assessments. Rather, only the degree of alignment is discussed in the results. For these results, the means of the reviewers' coding were used to determine whether the alignment criteria were met. When reviewers did vary in their judgments, the means lessened the error that might result from any one reviewer's finding. Standard deviations are reported in the tables provided in Appendix B, which give one indication of the variance among reviewers.

This report describes the results of an alignment study of the South Dakota assessment administered in the spring 2008 and mathematics content standards for grades 3-8 and 11. The study addressed specific criteria related to the content agreement between the state's standards and grade-level assessments. Four criteria received major attention: categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence and balance of representation.

Alignment Criteria Used for This Analysis

This analysis judged the alignment between the standards and the assessments on the basis of four criteria. Information is also reported on the quality of items by identifying items with sources of challenge and other issues. For each alignment criterion,

an acceptable level was defined by what would be required to assure that a student had met the standards.

Categorical Concurrence

An important aspect of alignment between standards and assessments is whether both address the same content categories. The categorical-concurrence criterion provides a very general indication of alignment if both documents incorporate the same content. *The criterion of categorical concurrence between standards and assessments is met if the same or consistent categories of content appear in both documents.* This criterion was judged by determining whether the assessment included items measuring content from each strand. The analysis assumed that the assessment had to have at least six items for measuring content from a strand in order for an acceptable level of categorical concurrence to exist between the strand and the assessment. The number of items, six, is based on estimating the number of items that could produce a reasonably reliable subscale for estimating students' mastery of content on that subscale. Of course, many factors have to be considered in determining what a reasonable number is, including the reliability of the subscale, the mean score, and cutoff score for determining mastery. Using a procedure developed by Subkoviak (1988) and assuming that the cutoff score is the mean and that the reliability of one item is .1, it was estimated that six items would produce an agreement coefficient of at least .63. This indicates that about 63% of the group would be consistently classified as masters or nonmasters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score is increased to one standard deviation from the mean to .77 and, with a cutoff score of 1.5 standard deviations from the mean, to .88. Usually states do not report student results by strands or require students to achieve a specified cutoff score on indicators related to a strand. If a state did do this, then the state would seek a higher agreement coefficient than .63. Six items were assumed as a minimum for an assessment measuring content knowledge related to a strand, and as a basis for making some decisions about students' knowledge of that strand. If the mean for six items is 3 and one standard deviation is one item, then a cutoff score set at 4 would produce an agreement coefficient of .77. Any fewer items with a mean of one-half of the items would require a cutoff that would only allow a student to miss one item. This would be a very stringent requirement, considering a reasonable standard error of measurement on the subscale.

Depth-of-Knowledge Consistency

Standards and assessments can be aligned not only on the category of content covered by each, but also on the basis of the complexity of knowledge required by each. *Depth-of-knowledge consistency between standards and assessment indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards.* For consistency to exist between the assessment and the strands, as judged in this analysis, at least 50% of the items corresponding to a strand had to be at or above the depth-of-knowledge level of the corresponding standards: 50%, a conservative cutoff point, is based on the assumption that a minimal passing score for any one strand of 50% or higher would require the student to successfully answer at least some items at or above the depth-of-knowledge

level of the corresponding standards. For example, assume an assessment included six items related to one strand and students were required to answer correctly four of those items to be judged proficient—i.e., 67% of the items. If three, 50%, of the six items were at or above the depth-of-knowledge level of the corresponding standards, then for a student to achieve a proficient score would require the student to answer correctly at least one item at or above the depth-of-knowledge level of one standard. Some leeway was used in this analysis on this criterion. If a strand had between 40% and 50% of items at or above the depth-of-knowledge levels of the standards, then it was reported that the criterion was "weakly" met.

Interpreting and assigning depth-of-knowledge levels to both standards within strands and assessment items are essential requirements of alignment analysis. These descriptions help to clarify what the different levels represent in mathematics:

Level 1 (Recall) includes the recall of information such as a fact, definition, term or a simple procedure, as well as performing a simple algorithm or applying a formula. That is, in mathematics, a one-step, well defined and straight algorithmic procedure should be included at this lowest level. Other key words that signify Level 1 include "identify," "recall," "recognize," "use" and "measure." Verbs such as "describe" and "explain" could be classified at different levels, depending on what is to be described and explained.

Level 2 (Skill/Concept) includes the engagement of some mental processing beyond a habitual response. A Level 2 assessment item requires students to make some decisions about how to approach the problem or activity, whereas Level 1 requires students to demonstrate a rote response, perform a well-known algorithm, follow a set procedure (like a recipe) or perform a clearly defined series of steps. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data" and "compare data." These actions imply more than one step. For example, to compare data requires first identifying characteristics of the objects or phenomenon and then grouping or ordering the objects. Some action verbs, such as "explain," "describe" or "interpret," could be classified at different levels depending on the object of the action. Interpreting information from a simple graph or requiring mathematics information from the graph also is at Level 2. Interpreting information from a complex graph that requires some decisions on what features of the graph need to be considered and how information from the graph can be aggregated is at Level 3. Level 2 activities are not limited solely to number skills, but can involve visualization skills and probability skills. Other Level 2 activities include noticing and describing non-trivial patterns; explaining the purpose and use of experimental procedures; carrying out experimental procedures; making observations and collecting data; classifying, organizing and comparing data; and organizing and displaying data in tables, graphs and charts.

Level 3 (Strategic Thinking) requires reasoning, planning, using evidence and a higher level of thinking than the previous two levels. In most instances, requiring

students to explain their thinking is at Level 3. Activities that require students to make conjectures also are at this level. The cognitive demands at Level 3 are complex and abstract. The complexity does not result from the fact that there are multiple answers, a possibility for both Levels 1 and 2, but because the task requires more demanding reasoning. However, an activity that has more than one possible answer and requires students to justify the response they give would most likely be at Level 3. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve problems.

Level 4 (Extended Thinking) requires complex reasoning, planning, developing and thinking, most likely over an extended period of time. The extended time period is not a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as Level 2. However, if the student is to conduct a river study that requires taking into consideration a number of variables, this would be at Level 4.

At Level 4, the cognitive demands of the task should be high and the work should be very complex. Students should be required to make several connections—relate ideas *within* the content area or *among* content areas—and to select one approach among many alternatives on how the situation should be solved in order to be at this highest level. Level 4 activities include developing and proving conjectures; designing and conducting experiments; making connections between a finding and related concepts and phenomena; combining and synthesizing ideas into new concepts; and critiquing experimental designs.

Range-of-Knowledge Correspondence

For standards and assessments to be aligned, the breadth of knowledge required on both should be comparable. *The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a strand is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment items/activities.* The criterion for correspondence between span of knowledge for a strand and an assessment considers the number of standards within the strand with one related assessment item/activity. Fifty percent of the standards for a strand had to have at least one related assessment item in order for the alignment on this criterion to be judged acceptable. This level is based on the assumption that students' knowledge should be tested on content from over half of the domain of knowledge for a strand. This assumes that each standard for a strand should be given equal weight. Depending on the balance in the distribution of items and the need to have a low number of items related to any one standard, the requirement that assessment items need to be related to more than 50% of the standards for an strand increases the likelihood that students will have to demonstrate knowledge on more than one standard per strand to achieve a minimal passing score. As with the other criteria, a state may choose to make

the acceptable level on this criterion more rigorous by requiring an assessment to include items related to a greater number of the standards. However, any restriction on the number of items included on the test will place an upper limit on the number of standards that can be assessed. Range-of-knowledge correspondence is more difficult to attain if the content expectations are partitioned among a greater number of strands and a large number of standards. If 50% or more of the standards for a strand had a corresponding assessment item, then the range-of-knowledge correspondence criterion was met. If between 40% and 50% of the standards for a strand had a corresponding assessment item, the criterion was "weakly" met.

Balance of Representation

In addition to comparable depth and breadth of knowledge, aligned standards and assessments require that knowledge be distributed equally in both. The range-of-knowledge criterion only considers the number of standards within a strand hit (a standard with a corresponding item); it does not take into consideration how the hits (or assessment items/activities) are distributed among these standards. *The balance-of-representation criterion is used to indicate the degree to which one standard is given more emphasis on the assessment than another.* An index is used to judge the distribution of assessment items. This index only considers the standards for a strand that have at least one hit—i.e., one related assessment item per standard. The index is computed by considering the difference in the proportion of standards and the proportion of hits assigned to the standard. An index value of 1 signifies perfect balance and is obtained if the hits (corresponding items) related to a strand are equally distributed among the standards for the given strand. Index values that approach 0 signify that a large proportion of the hits are on only one or two of all of the standards hit. Depending on the number of standards and the number of hits, a unimodal distribution (most items related to one standard and only one item related to each of the remaining standards) has an index value of less than .5. A bimodal distribution has an index value of around .55 or .6. Index values of .7 or higher indicate that items/activities are distributed among all of the standards at least to some degree (e.g., every standard has at least two items) and is used as the acceptable level on this criterion. Index values between .6 and .7 indicate the balance-of-representation criterion has only been "weakly" met.

Source-of-Challenge Criterion

The source-of-challenge criterion is only used to identify items on which the major cognitive demand is inadvertently placed and is other than the targeted mathematics standard, concept, or application. Cultural bias or specialized knowledge could be reasons for an item to have a source-of-challenge problem. Such item characteristics may result in some students not answering an assessment item, or answering an assessment item incorrectly, or at a lower level, even though they possess the understanding and skills being assessed.

Findings

Standards

The consensus DOK value for each mathematics standard from the 2007 analysis can be found in Appendix A. Table 1 shows the percentages of standards at each DOK level for each of the five strands. The proportion of the DOK levels by standards for grades 3-6 was fairly constant. The majority of the standards were judged to have a DOK level 1. Only one standard for each grade was judged to have a DOK level 3. For grades 7 and 8, reviewers did not judge that any of the standards had a DOK level 3. For both of these grades the standards were nearly evenly divided between DOK levels 1 and 2. Grades 7 and 8 did have a slightly higher proportion of standards with a DOK level 2 than did the standards for grades 3-6 indicating some increase in complexity. For grade 11, only one-third of the standards were judged to have a DOK level 1. Half of the standards had a DOK level 2 and three standards (12%) had a DOK level 3 (strategic thinking). As appropriate, the grade 11 standards were judged to have the highest proportion of items with DOK levels 2 and 3.

Table 1
Percent of Standards by Depth-of-Knowledge (DOK) Levels for Grades 3-8 and 11 South Dakota Alignment Analysis for Mathematics

Grade	Total Number of Standards	DOK Level	Number of Standards by Level	Percent within Strand by Level
3	23	1 2 3	12 10 1	52 43 4
4	25	1 2 3	16 8 1	64 32 4
5	28	1 2 4	18 9 1	64 32 3
6	18	1 2 3	11 6 1	61 33 5
7	18	1 2	10 8	55 44
8	16	1 2	7 9	43 56
11	24	1 2 3	9 12 3	37 50 12

If no particular standard is targeted by a given assessment item, reviewers were instructed to code the item at the level of a strand or an indicator. This coding to a generic standard sometimes indicates that the item is inappropriate for the grade level. However, if the item is grade-appropriate, then this situation may instead indicate that there is a part of the content not expressly or precisely described in the standards. These items may highlight areas in the standards that should be changed, or made more precise. Table 2 displays the assessment items coded to generic standards by more than one reviewer.

A majority of the reviewers coded four or five items to generic standards (objectives) for grades 4, 5, 6, and 11. Two or more reviewers did not code any items on the grades 3 and 8 assessments to generic standards and only one item on the grade 7 assessment to generic standards. Reviewers were unable to find precise standards that mapped to the items assigned to generic standards. For example, grade 4 Item 70 required students to use a line of symmetry, but no grade 4 standard included line of symmetry. Other items mapped to standards at different grade levels or did not match the full intent of a standard. For example, grade 5 Item 89 was a function (input/output) table with one operation. Standard 5.A.4.1 (students are able to solve problems using patterns involving more than one operation) was the standard that was the closest match, but this standard expected students to use more than one operation. The number of items coded to generic standards does indicate that the assessments for at least four of the grades included a few items—less than 10 percent—that did not coincide precisely to the grade level expectations.

Reviewers' debriefing comments also highlight some ambiguities in the objectives. These comments can be found in Appendix D.

Table 2
Items Coded to Generic Objectives by More Than One Reviewer, South Dakota Alignment Analysis for Mathematics, Grades 3-8 and 11 2008

Grade	Generic Objective	Assessment Item (Number of Reviewers)
4	4.G.1	70(7)
4	4.N.1	5(6), 12(7), 38(6)
4	4.S.1	89(7)
5	5.A.4	89(6)
5	5.N.1	30(7)
5	5.N.2	1(5), 68(7)
5	5.S.2	37(6)
6	6.G.2	1(7)
6	6.N.2	30(7), 58(7)
6	6.S.2	70(7), 92(5)
7	7.G.1	30(6)
11	9-12 A.2	7(3)
11	9-12 A.3	64(2)
11	9-12 M.1	85(2)
11	9-12 S.2	91(2)

Alignment of Curriculum Standards and Assessments

Table 3 displays the number of items and points for each assessment form. In the analysis that follows, multiple-point items are given additional weight for alignment purposes. For example, a 3-point item is counted towards the alignment as 3 identically coded 1-point items. The items on all of the forms were assigned a value of one point so the total point value was the same as the total number of items.

Table 3
Number of Items and Point Value by Grade for South Dakota Assessments, Grades 3-8 and 11 2008

Grade Level	Number of Items	Number of Multi-Point Items	Total Point Value
3	84	0	84
4	84	0	84
5	84	0	84
6	84	0	84
7	84	0	84
8	84	0	84
11	84	0	84

The results of the analysis for each of the four alignment criteria are summarized in Tables 4.1-4.7. More detailed data on each of the criteria are given in Appendix B, in the first three tables. With each table and for each grade, a description of the satisfaction of the alignment criteria for the given grade is provided. The reviewers' debriefing comments provide further detail about the individual reviewers' impressions of the alignment.

In Tables 4.1-4.7, "YES" indicates that an acceptable level was attained between the assessment and the learning goal on the criterion. "WEAK" indicates that the criterion was nearly met, within a margin that could simply be due to error in the system. "NO" indicates that the criterion was not met by a noticeable margin—10% over an acceptable level for Depth-of-Knowledge Consistency, 10% over an acceptable level for Range-of-Knowledge Correspondence, and .1 under an index value of .7 for Balance of Representation.

Grade 3

The alignment between the mathematics grade 3 assessment for 2008 and the South Dakota mathematics standards was acceptable and nearly found to be fully aligned. The assessment had six or more items for each of the five strands, a sufficient number to reliably make a judgment about students' proficiency for each strand. Thus, the Categorical Concurrence criterion was acceptable for all five strands. The Depth-of-Knowledge Consistency criterion was acceptable for four of the five strands. The only weakness was between the Strand 3A (Algebra) and the assessment. Only 49% of the 26 items, on the average, that mapped to standards under this strand had a DOK level that

was the same or higher than the DOK level of the assigned standard, one percentage point lower than the 50% needed to be considered acceptable. Range and balance was acceptable for all five strands. Eighty percent or more of the standards under each of the grade 3 standards for each strand had at least one corresponding items. The items were also evenly distributed among these standards to have balance.

Overall, the alignment for grade 3 was acceptable with only one item targeting a standard under Strand 3A needed to be replaced by an item with a DOK level that is the same or higher than the DOK level of the assigned standard. Although the data support strong alignment between the grade 3 mathematics standards and the assessment, reviewers indicated that the alignment could be improved. Reviewers felt that the assessment was longer than it needed to be to assess students' mathematics competency at grade 3. The number of items devoted to computation could be reduced whereas the number of measurement items was lower than would be expected. Reviewers noted that money was used as a context for decimal computation, but was only briefly assessed. The items' level of complexity was comparable to that expected by the standards, but tended toward DOK levels 1 and 2. Five of the reviewers made a note that the grade 3 assessment should have more items at DOK level 3, strategic thinking.

Table 4.1
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 3 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 3	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
3.A - ALGEGRA	YES	WEAK	YES	YES
3.G - GEOMETRY	YES	YES	YES	YES
3.M - MEASUREMENT	YES	YES	YES	YES
3.N - NUMBER SENSE	YES	YES	YES	YES
3.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Grade 4

The alignment between the grade 4 mathematics assessment and standards was acceptable. All of the five strands had more than nine items that targeted underlying standards, sufficient for acceptable levels on the Categorical Concurrence criterion. The DOK levels for four of the five strands were appropriate. However, reviewers found that nearly two-thirds of the 13 items that mapped to standards under Strand 4.S (Statistics and Probability) had a DOK level that was lower than the DOK level of the assigned standard. This was higher than the proportion needed to have an acceptable level on the Depth-of-Knowledge Consistency criterion. The assessment did have at least one item that targeted nearly all of the standards for an appropriate range. The balance was also

good with all of the items nearly evenly distributed among the standards underlying a strand.

Overall, the alignment for grade 4 was considered acceptable. Only three of the S4 items would need to be replaced to attain full alignment. The three items to be replaced would need to be those items with a lower DOK level than the DOK level of the targeted standard under Strand 4.S. Reviewers did denote some topics that were omitted from the assessment such as median and range. Reviewers' notes indicated a few other topics that could have been tested in more detail while other areas were over emphasized (Appendix D). As for grade 3, reviewers felt that the assessment was too long and could have included a few items with a DOK level 3. The comment of one reviewer was representative of the others, "Although this assessment seemed to have more Level 2 items than grade 3, there were few that really pushed the thinking. There were no Level 3 items."

Table 4.2
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 4 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 4	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
4.A - ALGEBRA	YES	YES	YES	YES
4.G - GEOMETRY	YES	YES	YES	YES
4.M - MEASUREMENT	YES	YES	YES	YES
4.N - NUMBER SENSE	YES	YES	YES	YES
4.S - STATISTICS AND PROBABILITY	YES	NO	YES	YES

Grade 5

The alignment between the grade 5 mathematics assessment and the South Dakota standards was acceptable. The items on the 84 item assessment were adequately distributed among the five strands with over 12 items for each strand. Thus, the Categorical Concurrence criterion was acceptable for all five strands. Depth-of-Knowledge Consistency was acceptable except for a weakness for Strand 5.S. Only five of the 12 items had a DOK level that was the same or higher than the DOK level of the assigned standard under Strand 5.S. This is below the 50% used in this study as an acceptable level. Range was acceptable for all five strands. However, one standard under each of two strands (measurement and statistics and probability) was over emphasized compared to other underlying standards. The measurement Standard 5.M.1.2 had eight of 12 corresponding items and the statistics and probability standard 5.S.1.1 had six of the 12 corresponding items. For both of these standards, the assessment included more items than needed to adequately sample students' knowledge in relationship to other content knowledge represented by the other standards.

Overall, the alignment for grade 5 was acceptable. Only one item with a DOK level lower than the DOK level of the assigned standard under Strand 5.S would need to be replaced to have full alignment. If an item that currently targets Standard 5.S.1.1 is replaced by an item that targets another statistics and probability standard, then the balance issue would be removed. Since all of the other three alignment criteria were acceptable for Strand 5.M, the balance issue for that standard is considered more a matter of preference. One reviewer noted a number of topics that were expected to be assessed that were not:

> The items did not address transformational geometry (turns or flips). There were no items measuring finding prime or composite numbers or factors of whole numbers. There were no items addressing squares of numbers, and none addressing multiplication and division of decimals that were not also money problems. These are all topics I would have expected based on the standards to be assessed at this grade level. There was extremely heavy attention given to the standard on writing one-step equations and solving them, on problems with money (which was very heavily measured in previous grades as well), on solving problems with estimation, and on analyzing data.

Reviewers felt the assessment was too long and found issues with the standards as well as the assessment. One reviewer commented, "The alignment is off because of the wording of the objectives and the over emphasis on some rather trivial objectives (the probability one at this level). There is also an over-emphasis on translations problems (writing an algebraic equation or expression) for a problem."

Table 4.3
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 5 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 5	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
5.A - ALGEBRA	YES	YES	YES	YES
5.G - GEOMETRY	YES	YES	YES	YES
5.M - MEASUREMENT	YES	YES	YES	WEAK
5.N - NUMBER SENSE	YES	YES	YES	YES
5.S - STATISTICS AND PROBABILITY	YES	WEAK	YES	WEAK

Grade 6

The alignment between the South Dakota grade 6 mathematics standards and the grade 6 assessment was acceptable, nearly fully aligned. The 84 items on the assessment were distributed among the five strands with from seven items (measurement) to 32 items (algebra) allocated to individual strands. This was sufficient for the assessment and the strands to have an acceptable level for the Categorical Concurrence criterion. Reviewers judged that all of the grade 6 items had a DOK level of 1 or 2, but this was sufficient for

at least two thirds of the items for each strand, except geometry, to have a DOK level that was comparable to the assigned standard. For geometry slightly fewer than half of the items, on the average, had a DOK level that was the same or higher than the DOK level of the assigned standard, 49%. Range and balance was acceptable for all five strands. At least one item mapped to each of the underlying standards under each of the five strands.

Overall, the grade 6 alignment for mathematics was acceptable. Only one item that mapped to a standard under the geometry strand would need to be replaced to meet the minimum requirement for full alignment used in this analysis. Reviewers acknowledged that the alignment between the grade 6 standards and the assessment was good. One reviewer did note that the assessment was longer than needed with about one-third of the items targeting five of the 20 standards. Even though the assessment had at least one item for each of the standards, some topics under standards were not assessed including similarity, parallel, and reflections. Also, Standard 6.G.2.1 expected students to identify a reflection, but only a translation was tested, which was not mentioned in the standards. For standard 6.M.1.1, students were never asked to convert measurements within the metric system. Reviewers found five items that did not precisely match any of the grade 6 standards and were coded to generic standards. This, along with one item identified as having a source-of-challenge issue, indicated that some improvements could be made on the grade 6 assessment.

Table 4.4
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 6 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 6	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
6.A – ALGEBRA	YES	YES	YES	YES
6.G - GEOMETRY	YES	WEAK	YES	YES
6.M - MEASUREMENT	YES	YES	YES	YES
6.N - NUMBER SENSE	YES	YES	YES	YES
6.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Grade 7

For grade 7, the South Dakota standards and the assessment were fully aligned. The only alignment weakness was with balance for Strand 7.G (Geometry). Most of the items were mapped to two standards (seven items to Standard 7.G.2.1 and six items to Standard 7.G.1.1) while other geometry items only had one or three items. Because all of the other alignment criteria were acceptably met for Strand 7.G, the over emphasis of these two geometry standards is considered a matter of preference. Reviewers found from six (Strand 7.M) to 27 (Strand 7.A) items that mapped to each of the five standards. Over 50% of the items for each strand had the same or higher DOK level than the assigned standard. Also, the assessment had at least one item that mapped to each of the

underlying standards with the items fairly evenly distributed accept for Strand 7.G. Thus, the alignment criteria of Categorical Concurrence, Depth-of-Knowledge Consistency, and the Range-of-Knowledge Correspondence were acceptably met for all five standards.

Overall, the grade 7 standards and assessment were fully aligned. Even though the results of the analysis indicated the grade 7 standards and the assessment met the minimum requirements for being fully aligned, reviewers made a number of comments on how the assessment could be improved. Reviewers noted that the level of complexity of the items did not require students to use critical thinking skills and that the assessment was longer than needed to be. Other reviewers' comments included:

> Reviewer 1-There were two general issues needing attention--algebraic vs. numeric expressions, and equations vs. expressions. Algebraic expressions should be distinguished from numeric expressions, and equations should be distinguished from expressions. The assessment items did not address those distinctions adequately.
> Reviewer 2-Although the results will probably look aligned, many of the objectives are rated at level 1 that should be pushed to level 2 at this grade. It is maintaining a low-level advancement for sixth grade. (The sixth-grade test requires more thinking than this one).
> Reviewer 3-The measurement standard was weak and there needed to be more questions in this area. Standard A.1.1 deals only with algebraic expressions and you could also add equations here when you deal with replacement values. The formula page was given to the students but there weren't any questions that needed it and this may stress the students. A huge concept is missing here. I thought the test was very weak in the use of integers as this is a major focus in 7th grade.

Table 4.5
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 7 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 7	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
7.A - ALGEBRA	YES	YES	YES	YES
7.G - GEOMETRY	YES	YES	YES	WEAK
7.M - MEASUREMENT	YES	YES	YES	YES
7.N - NUMBER SENSE	YES	YES	YES	YES
7.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Grade 8

The grade 8 mathematics standards and assessment were fully aligned. All four alignment criteria for each of the five standards were acceptably met. The items were found to target the grade 8 standards with none of the items mapped to a generic standard

by two or more of the reviewers. The majority of the reviewers indicated they thought the alignment was acceptable, a higher percentage than for other grades. But, similar to the other grades, the reviewers thought level of complexity of the standards and assessment should be increased some, particularly at the grade 8 level. Other comments made by reviewers included:

> Reviewer 1-Proportional reasoning is slighted. It occurs in two places in the objectives, so it being slighted is rather lost in the analysis. The objectives are broad, so many things fit under each one. The geometry ideas did not move forward (only more on 3-d, but rather low level).
> Reviewer 2-The test weighed heavily on algebra, with 28 of the items being devoted to this particular strand (3 standards had seven or eight items). Measurement was quite weak, with only 8 questions being devoted to this strand. However, each standard was assessed with at least one question. The number sense strand also had 2 standards with seven or eight items.

Table 4.6
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 8 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 8	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
8.A - ALGEBRA	YES	YES	YES	YES
8.G - GEOMETRY	YES	YES	YES	YES
8.M - MEASUREMENT	YES	YES	YES	YES
8.N - NUMBER SENSE	YES	YES	YES	YES
8.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Grade 11

The alignment between the grade 11 mathematics standards and the grade 11 assessment was acceptable. However, unlike for the previous grades, the alignment had three weaknesses. The DOK levels of items that mapped to Strand 9-12.A (Algebra) and Strand 9-12.S (Statistics and Probability), on the average, had a lower DOK level than the DOK level of the assigned standards. Only 44% of the 28 items that mapped to standards under Strand A and 46% of the 13 items that mapped to standards under Strand S had a DOK level that was the same or higher than DOK level of the assigned standard. The balance weakness between the assessment and Strand S also signified an alignment issue. Five items mapped to Standard 9-12.S.1.2 and five items mapped to Standard 9-12.S.2.2 while only one or two items mapped to other standards under Strand S. Other than these three alignment weaknesses, the alignment was good. The distribution of items among the five strands was essentially the same as for grades 7 and 8 and sufficient to have an acceptable level for the Categorical Concurrence criterion. The DOK was acceptable for three of the five strands. Range was acceptable for all five strands and balance for four.

Overall, the grade 11 mathematics assessment and standards was acceptable. Only three items would need to be replaced to attain full alignment. Two items that mapped to standards under Strand A and one item that mapped to a standard under Strand S would need to be replaced to attain full alignment. These items would need to be replaced by items with DOK levels that are at least the same as the DOK level of the assigned standard. If one item that was mapped to one of the two over emphasized standards under Strand S is replaced by one that targets another standard then the balance would be improved. Reviewers made a number of comments on individual items and about how the assessment could be improved. Some comments by reviewers include:

> Reviewer 1-Once again, the alignment is there---but need to think about the depth of thinking expected. Much of this is school mathematics and not the type of thinking that will be needed for the future, everyday person. This can be nicely combined with the mathematics that students will need for advanced study.
> Reviewer 2- The standards were appropriately specific for the most part. There should be more specificity in the standards around the practical applications of percentages that students are more likely to need to know as adults. There is no mention in the standards to substituting values for variables in formulas, although the skill appeared often in the assessment and would be useful to students as they use common formulas.
> Reviewer 3- The statistic S.1.1 I thought was below grade level and higher level questions could be placed here. S.1.2 should state compare multiple variable data sets or find mean, median, mode and range in one data set. Standard A.2.1 states that students are able to use algebraic properties to transform multi-step, single variable, first degree equations and there was a question that dealt with one step equations.

Table 4.7
Summary of Acceptable Levels on Alignment Criteria for Mathematics Grade 11 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 11	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*
9-12.A - ALGEBRA	YES	WEAK	YES	YES
9-12.G - GEOMETRY	YES	YES	YES	YES
9-12.M - MEASUREMENT	YES	YES	YES	YES
9-12.N - NUMBER SENSE	YES	YES	YES	YES
9-12.S - STATISTICS AND PROBABILITY	YES	WEAK	YES	WEAK

Source-of-Challenge Issue and Reviewers' Comments

Reviewers were instructed to document any source-of-challenge issue and to provide any other comments they may have. These comments can be found in Tables

(grade).5 and (grade).7 in Appendix C. Two or more reviewers identified source-of-challenge issues with from one to three items for grades 3 through 6 and no items for grades 7, 8, and 11. Reviewers wrote detailed notes on several items for each grade. After coding each grade-level assessment, reviewers also were asked to respond to five debriefing questions. All of the comments made by the reviewers are given in Appendices D. The notes in general offer an opinion on the item or give an explanation of the reviewers' coding.

Reliability Among Reviewers

The overall intraclass correlations among the mathematics reviewers' assignment of DOK levels to items was high for seven reviewers for grades 3-8 and 11 (Table 5). An intraclass correlation value greater than 0.8 generally indicates a high level of agreement among the reviewers. The intraclass correlations either equaled this high level or were higher. A pairwise comparison was used to determine the degree of reliability of reviewer coding at the standard level and at the strand level. The values for all of the pairwise comparison indices were high, higher than for most alignment studies. Reviewers discussed their codings after analyzing the items for each grade. The intraclass correlations and pairwise agreements were computed after the adjudication when reviewers had the option to change their codings if there was a compelling reason. The reliability coefficients may not represent values obtained from independent codings.

Table 5
Intraclass and Pairwise Comparisons, South Dakota Alignment Analysis for Mathematics Grades 3-8 and 11 Assessments

Grade	Intraclass Correlation	Pairwise Comparison:	Pairwise: Standard	Pairwise: Strand
3	.84	.80	.87	.94
4	.86	.78	.87	.94
5	.93	.81	.92	.96
6	.86	.74	.91	.98
7	.90	.77	.90	.97
8	.88	.74	.82	.92
11	.80	.68	.78	.95

Summary

A three-day alignment institute was conducted in Sioux Falls, South Dakota to analyze the alignment between the mathematics standards and the assessments administered in the spring of 2008 for grades 3-8 and 11. Seven reviewers participated in the analysis, three from South Dakota and four from other states. The reviewers included mathematics education experts, classroom teachers, university professors, and a district mathematics coordinator.

The alignment between the mathematics assessment and standards was found to be at least acceptable for all seven grades. The grade 8 assessment and standards were fully aligned. The seven assessments, each with 84 items, had over six items for each of the five mathematics strands, enough to have an acceptable level for the Categorical Concurrence criterion for each strand for each grade. Range also was acceptable for all strands for all seven grades. For most assessments reviewers found at least one item for each of the approximately 20 underlying standards. The main alignment issue was a weak Depth-of-Knowledge Consistency criterion for one or two strands for a grade. On six of the seven assessments fewer than 50% of the items had a DOK level that was the same or higher than the DOK level of the assigned standard for one or two strands. From one to three items would need to be replaced to remove this weakness in DOK. There were also balance weaknesses, but these were associated with a weakness in DOK or where the overemphasis of a standard was considered more a matter of preference than a major alignment issue.

Overall, only one to three items would need to be replaced on six of the assessments to attain full alignment between the assessments and the standards (see the summary table below). As such, the alignment was considered acceptable for all grades. Reviewers did make a number of comments on how individual items could be improved. Reviewers felt the assessments were too long and the emphasis for some grades was missed place while some important topics were not assessed.

Summary Table
Percent of South Dakota Mathematics Standards with Acceptable Level on Each Alignment Criteria for Grade 3-8 and 11

Grade	*Categorical Concurrence* (six or more items)	*Depth-of-Knowledge Consistency* (50% at/above)	*Range of Knowledge* (50% of objectives)	*Balance of Representation* (without possible weakness)	*Estimated Range of Items per to be Added or Replaced for Full Alignment*
Grade 3	100	80	100	100	1
Grade 4	100	80	100	100	3
Grade 5	100	80	100	60	1
Grade 6	100	80	100	100	1
Grade 7	100	80	100	100	1
Grade 8	100	100	100	80	0
Grade 11	100	60	100	80	3

Categorical Concurrence	>6 items
Depth-of-Knowledge	>50% with DOK level the same or higher than level of corresponding Objectives
Range-of-Knowledge	>70% of objectives under a standard
Balance of Representation	A possible weakness if one or more objectives with a relative large number of items (e.g. five or more than the objective with the next highest number of items)

References

Subkoviak, M. J. (1988). A practitioner's guide to computation and interpretation of reliability indices for mastery tests. *Journal of Educational Measurement, 25*(1), 47-55.

Webb, N. L. (1997). *Criteria for alignment of expectations and assessments in mathematics and science education*. Council of Chief State School Officers and National Institute for Science Education Research Monograph No. 6. Madison: University of Wisconsin, Wisconsin Center for Education Research.

Appendix A

South Dakota
Grades 3-8 and 11
Mathematics
Standards and Group Consensus
DOK Values

Table 3.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 3

Level	Description	DOK
3.A	ALGEGRA	2
3.A.1	Use procedures to transform algebraic expressions.	2
3.A.1.1	Students are able to explain the relationship between repeated addition and multiplication.	2
3.A.1.2	Students are able to identify special properties of 0 and 1 with respect to arithmetic operations (addition, subtraction, multiplication).	1
3.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
3.A.2.1	Students are able to select appropriate relational symbols (<, >, =) to compare numbers.	2
3.A.2.2	Students are able to solve problems involving addition and subtraction of whole numbers. • Use concrete materials to model and solve equations (hands-on). • Represent given problem situations using diagrams, models, and symbolic expressions.	2
3.A.3	Interpret and develop mathematical models.	1
3.A.3.1	Students are able to use the relationship between multiplication and division to compute and check results.	1
3.A.4	Describe and use the properties and behaviors of relations, functions, and inverses.	2
3.A.4.1	Students are able to extend linear patterns.	2
3.A.4.2	Students are able to use number patterns and relationships to learn basic facts.	2
3.G	GEOMETRY	1
3.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	1
3.G.1.1	Students are able to recognize and compare the following plane and solid geometric figures: square, rectangle, triangle, cube, sphere, and cylinder.	1
3.G.1.2	Students are able to identify points, lines, line segments, and rays.	1
3.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
3.G.2.1	Students are able to demonstrate relationships between figures using similarity and congruence.	2
3.M	MEASUREMENT	1
3.M.1	Apply measurement concepts in practical applications.	1
3.M.1.1	Students are able to read and tell time before and after the hour within five-minute intervals on an analog clock.	1
3.M.1.2	Students are able to count, compare, and solve problems using a collection of coins and bills.	2
3.M.1.3	Students are able to identify U.S. Customary units of length (feet), weight (pounds), and capacity (gallons).	1
3.M.1.4	Students are able to select appropriate units to measure length (inch, foot, mile, yard); weight (ounces, pounds, tons); and capacity (cups, pints, quarts, gallons).	2
3.M.1.5	Students are able to measure length to the nearest 1/2 inch.	1
3.N	NUMBER SENSE	1
3.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real	1

Table 3.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 3

Level	Description	DOK
	numbers.	
3.N.1.1	Students are able to place in order and compare whole numbers less than 10,000, using appropriate words and symbols.	1
3.N.1.2	Students are able to find multiples of whole numbers 2, 5, and 10.	1
3.N.1.3	Students are able to name and write fractions from visual representations. • Recognize that fractions and decimals are parts of a whole.	2
3.N.2	Apply operations within the set of real numbers.	1
3.N.2.1	Students are able to add and subtract whole numbers up to three digits and multiply two digits by one digit. • Recall multiplication facts through the tens.	1
3.N.3	Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.	1
3.N.3.1	Students are able to round two-digit whole numbers to the nearest tens, and three-digit whole numbers to the nearest hundreds.	1
3.S	STATISTICS AND PROBABILITY	2
3.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	3
3.S.1.1	Students are able to ask and answer questions from data represented in bar graphs, pictographs and tally charts.	3
3.S.1.2	Students are able to gather data and use the information to complete a scaled and labeled graph.	2
3.S.2	Apply the concepts of probability to predict outcomes and solve problems.	1
3.S.2.1	Students are able to describe events as certain or impossible.	1

Table 4.14
Group Consensus
South Dakota Content Standards, Mathematics, Grade 4

Level	Description	DOK
4.A	ALGEBRA	1
4.A.1	Use procedures to transform algebraic expressions.	1
4.A.1.1	Students are able to simplify whole number expressions involving addition, subtraction, multiplication, and division.	1
4.A.1.2	Students are able to recognize and use the commutative property of addition and multiplication. • Use models to identify commutative property.	1
4.A.1.3	Students are able to relate the concepts of addition, subtraction, multiplication, and division to one another.	1
4.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	1
4.A.2.1	Students are able to select appropriate relational symbols (<, >, =) to make number sentences true.	1
4.A.2.2	Students are able to simplify a two-step equation using whole numbers.	1
4.A.3	Interpret and develop mathematical models.	2
4.A.3.1	Students are able to write and solve number sentences that represent one-step word problems using whole numbers. • Use multiple methods, such as physical models, tables and charts, the number line, and graphs.	2
4.A.4	Describe and use the properties and behaviors of relations, functions and inverses.	2
4.A.4.1	Students are able to solve problems involving pattern identification and completion of patterns.	2
4.G	GEOMETRY	1
4.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	1
4.G.1.1	Students are able to identify the following plane and solid figures: pentagon, hexagon, octagon, pyramid, rectangular prism, and cone.	1
4.G.1.2	Students are able to identify parallel, perpendicular, and intersecting lines.	1
4.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
4.G.2.1	Students are able to compare geometric figures using size, shape, orientation, congruence, and similarity.	2
4.G.2.2	Students are able to identify a slide (translation) of a given figure.	1
4.M	MEASUREMENT	2
4.M.1	Apply measurement concepts in practical applications.	2
4.M.1.1	Students are able to identify equivalent periods of time and solve problems. • Measure time using fractions to 1/4.	1
4.M.1.2	Students are able to solve problems involving money including unit conversion. • Use of proper notation.	2
4.M.1.3	Students are able to use scales of length, temperature, capacity, and weight. • Select and use the most appropriate U.S. Customary units for given measurement situations.	2
4.M.1.4	Students are able to measure length to the nearest quarter inch. • Estimate length to the nearest inch.	1
4.N	NUMBER SENSE	1

Table 4.14
Group Consensus
South Dakota Content Standards, Mathematics, Grade 4

Level	Description	DOK
4.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	1
4.N.1.1	Students are able to read, write, order, and compare numbers from .01 to 1,000,000. • Read and write word names and the appropriate symbols in mathematical sentences. • Use expanded form notation.	1
4.N.1.2	Students are able to find multiples of whole numbers through 12.	1
4.N.1.3	Students are able to use a number line to compare numerical value of fractions or mixed numbers (fourths, halves, and thirds). • Identify improper fractions, proper fractions, and mixed numbers.	2
4.N.1.4	Students are able to interpret negative integers in temperature.	1
4.N.2	Apply operations within the set of real numbers.	1
4.N.2.1	Students are able to find the products of two-digit factors and quotient of two natural numbers using a one-digit divisor. • Recall and apply multiplication and division facts through the 12s.	1
4.N.2.2	Students are able to add and subtract decimals with the same number of decimal places.	1
4.N.3	Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.	2
4.N.3.1	Students are able to estimate sums and differences in whole numbers and money to determine if a given answer is reasonable.	2
4.S	STATISTICS AND PROBABILITY	2
4.S.1	Use statistical models to gather, analyze and display data to draw conclusions.	3
4.S.1.1	Students are able to interpret data from graphical representations and draw conclusions.	3
4.S.1.2	Given a small ordered data set of whole number data points (odd number of points), students are able to identify the median, mode, and range.	1
4.S.2	Apply the concepts of probability to predict outcomes and solve problems.	2
4.S.2.1	Students are able to determine the probability of simple events limited to equally likely and not equally likely outcomes.	2

Table 5.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 5

Level	Description	DOK
5.A	ALGEBRA	2
5.A.1	Use procedures to transform algebraic expressions.	2
5.A.1.1	Students are able to use a variable to write an addition expression.	2
5.A.1.2	Students are able to recognize and use the associative property of addition and multiplication.	1
5.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
5.A.2.1	Students are able to write one-step first degree equations using the set of whole numbers and find a solution.	2
5.A.3	Interpret and develop mathematical models.	2
5.A.3.1	Students are able to, using whole numbers, write and solve number sentences that represent two-step word problems.	2
5.A.3.2	Students are able to identify information and apply it to a given formula.	1
5.A.4	Describe and use the properties and behaviors of relations, functions, and inverses.	2
5.A.4.1	Students are able to solve problems using patterns involving more than one operation.	2
5.G	GEOMETRY	1
5.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	1
5.G.1.1	Students are able to describe and identify isosceles and equilateral triangles, pyramids, rectangular prisms, and cones.	1
5.G.1.2	Students are able to identify acute, obtuse, and right angles.	1
5.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	1
5.G.2.1	Students are able to determine lines of symmetry in rectangles, squares, and triangles.	1
5.G.2.2	Students are able to identify a turn or flip (rotation or reflection) of a given figure.	1
5.G.2.3	Students are able to use two-dimensional coordinate grids to find locations and represent points and simple figures.	1
5.M	MEASUREMENT	1
5.M.1	Apply measurement concepts in practical applications.	1
5.M.1.1	Students are able to determine elapsed time within an a.m. or p.m. period on the quarter-hour.	1
5.M.1.2	Students are able to solve problems involving money including making change.	2
5.M.1.3	Students are able to use and convert U.S. Customary units of length (inches, feet, yard), and weight (ounces, pounds).	1
5.M.1.4	Students are able to use appropriate tools to measure length, weight, temperature, and area in problem solving. • Estimate length and weight.	1
5.N	NUMBER SENSE	1
5.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	1
5.N.1.1	Students are able to read, write, order, and compare numbers from .001 to 1,000,000,000.	1
5.N.1.2	Students are able to find prime, composite, and factors of whole numbers from 1 to 50.	1
5.N.1.3	Students are able to identify alternative representations of fractions and decimals involving tenths, fourths, halves, and hundredths.	2

Table 5.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 5

Level	Description	DOK
5.N.1.4	Students are able to locate negative integers on a number line.	1
5.N.1.5	Students are able to determine the squares of numbers 1 – 12.	1
5.N.2	Apply operations within the set of real numbers.	1
5.N.2.1	Students are able to find the quotient of whole numbers using two-digit divisors. • Use the inverse relationship of multiplication and division to find a missing factor.	1
5.N.2.2	Students are able to determine equivalent fractions including simplification (lowest terms of fractions).	1
5.N.2.3	Students are able to multiply and divide decimals by natural numbers (1 – 9).	1
5.N.3	Develop conjectures, predictions, or estimations in the process of problem solving and verify or justify the results.	2
5.N.3.1	Students are able to use different estimation strategies to solve problems involving whole numbers, decimals, and fractions to the nearest whole number. • Solve problems using non-routine strategies.	2
5.S	STATISTICS AND PROBABILITY	2
5.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	4
5.S.1.1	Students are able to gather, graph, and interpret data. • Develop survey questions and collect appropriate data. • Use appropriate scales to represent data in simple bar graphs, line graphs, pictographs, and line plots.	4
5.S.1.2	Students are able to calculate and explain mean for a whole number data set.	2
5.S.2	Apply the concepts of probability to predict outcomes and solve problems.	2
5.S.2.1	Students are able to classify probability of simple events as certain, likely, unlikely, or impossible.	1
5.S.2.2	Students are able to use models to display possible outcomes.	2

Table 6.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 6

Level	Description	DOK
6.A	ALGEBRA	2
6.A.1	Use procedures to transform algebraic expressions.	2
6.A.1.1	Students are able to use order of operations, excluding nested parentheses and exponents, to simplify whole number expressions.	1
6.A.1.2	Students are able to write algebraic expressions involving addition or multiplication using whole numbers. • Show multiplication in various forms: 2•3 or 2n or 2(3).	2
6.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
6.A.2.1	Students are able to write and solve one-step 1st degree equations, with one variable, involving inverse operations using the set of whole numbers.	2
6.A.3	Interpret and develop mathematical models.	1
6.A.3.1	Students are able to identify and graph ordered pairs in Quadrant I on a coordinate plane.	1
6.A.3.2	Students are able to solve one-step problems involving ratios and rates.	1
6.A.4	Describe and use properties and behaviors of relations, functions, and inverses.	2
6.A.4.1	Students are able to use concrete materials, graphs and algebraic statements to represent problem situations. • Recognize, describe, and extend arithmetic sequences and patterns. • Use variables to represent given quantities in problem situations.	2
6.G	GEOMETRY	2
6.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	2
6.G.1.1	Students are able to identify and describe the characteristics of triangles and quadrilaterals. • Identify and describe similarities and differences of triangles: Scalene Isosceles Equilateral Right Acute • Identify and describe similarities and differences of quadrilaterals: Trapezoid Parallelogram Rectangle Rhombus Square Obtuse	2
6.G.1.2	Students are able to identify and describe angles. • Identify and describe differences of angles: Acute Obtuse Right	1
6.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
6.G.2.1	Students are able to use basic shapes to demonstrate geometric concepts. • Demonstrate lines of symmetry.	2

Table 6.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 6

Level	Description	DOK
	• Use basic shapes to demonstrate congruency (triangle, rectangle, square, parallelogram). • Use basic shapes to demonstrate similarity (triangle, rectangle, square, parallelogram). • Use basic shapes to demonstrate perpendicular lines (triangle, rectangle, square, trapezoid). • Use basic shapes to demonstrate parallel lines (rectangles, squares, parallelograms). • Identify a reflection.	
6.M	MEASUREMENT	1
6.M.1	Apply measurement concepts in practical applications.	1
6.M.1.1	Students are able to select, use, and convert appropriate unit of measurement for a situation. • Determine elapsed time. • Convert length, capacity, and mass within the Metric system (kilo-, base unit, centi-, milli-). • Convert weight and length within U.S. Customary system.	1
6.M.1.2	Students are able to find the perimeter and area of squares and rectangles (whole number measurements). • Apply strategies and/or formulas. • Use appropriate unit of measure.	1
6.N	NUMBER SENSE	1
6.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	1
6.N.1.1	Students are able to represent fractions in equivalent forms and convert between fractions, decimals, and percents using halves, fourths, tenths, hundredths. • Identify both standard and word forms (millions to ten-thousandths) of positive rational numbers.	1
6.N.1.2	Students are able to find factors and multiples of whole numbers. • Classify numbers as prime or composite.	1
6.N.2	Apply number operations with real numbers and other number systems.	1
6.N.2.1	Students are able to add, subtract, multiply, and divide decimals.	1
6.N.3	Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	2
6.N.3.1	Students are able to use various strategies to solve one- and two-step problems involving positive decimals. • Formulate rules to solve practical problems (problem solving). • Use estimation strategies to make predictions and test the reasonableness of answer. • Explain strategies and justify answers.	2
6.S	STATISTICS AND PROBABILITY	1
6.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	3
6.S.1.1	Students are able to find the mean, mode, and range of an ordered set of positive data.	1

Table 6.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 6

Level	Description	DOK
6.S.1.2	Students are able to display data using bar and line graphs and draw conclusions from data displayed in a graph.	3
6.S.2	Apply the concepts of probability to predict events/outcomes and solve problems.	1
6.S.2.1	Students are able to find the probability of a simple event. • Express the result as a fraction.	1

Table 7.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 7

Level	Description	DOK
7.A	ALGEBRA	2
7.A.1	Use procedures to transform algebraic expressions.	2
7.A.1.1	Students are able to write and evaluate algebraic expressions using the set of whole numbers. • Use replacement values for variables. • Use order of operations.	2
7.A.1.2	Students are able to identify associative, commutative, distributive, and identity properties involving algebraic expressions.	1
7.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
7.A.2.1	Students are able to write and solve one-step 1st degree equations, with one variable, using the set of integers and inequalities, with one variable, using the set of whole numbers. • Addition property of equality. • Multiplication property of equality. • Inverse operations.	2
7.A.3	Interpret and develop mathematical models.	2
7.A.3.1	Students are able to identify and graph ordered pairs on a coordinate plane and inequalities on a number line. • Quadrants I-IV • Use a scatterplot to draw an approximate line of best fit in a coordinate plane.	1
7.A.3.2	Students are able to model and solve multi-step problems involving rates. • Better buy • Unit rates	2
7.A.4	Describe and use properties and behaviors of relations, functions, and inverses.	2
7.A.4.1	Students are able to recognize one-step patterns using tables, graphs, and models and create one-step algebraic expressions representing the pattern. • Identify arithmetic and geometric sequences. • Extend arithmetic and geometric sequences.	2
7.G	GEOMETRY	1
7.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	1
7.G.1.1	Students are able to identify, describe, and classify polygons having up to 10 sides. • Relationships among triangles. • Relationships among quadrilaterals. • Sketch two-dimensional figures.	1
7.G.1.2	Students are able to identify and describe elements of geometric figures. • Altitude • Midpoint • Bisector • Radius • Diameter • Chord	1
7.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
7.G.2.1	Students are able to demonstrate ways that shapes can be transformed.	2

Table 7.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 7

Level	Description	DOK
	• Translation • Rotation • Reflection	
7.M	MEASUREMENT	1
7.M.1	Apply measurement concepts in practical applications.	1
7.M.1.1	Students are able to select, use, and convert appropriate units of measurement for a situation including capacity and angle measurement. • Measure angles to the nearest degree. • Measure length, capacity, and mass. • Convert within the Metric system (kilo- thru milli-). • Convert within the U.S. Customary system (weight, length, capacity).	1
7.M.1.2	Students, when given the formulas, are able to find circumference, perimeter, and area of circles, parallelograms, triangles, and trapezoids (whole number measurements). • Use appropriate unit of measure. • Estimate the area of irregular shapes.	1
7.N	NUMBER SENSE	2
7.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	2
7.N.1.1	Students are able to represent numbers in a variety of forms by describing, ordering, and comparing integers, decimals, percents, and fractions. • Describe and compare numbers using ratios including appropriate notation, e.g., a:b, a/b, a to b.	2
7.N.1.2	Students are able to find and use common multiples and factors of whole numbers. • Least Common Multiple • Greatest Common Factor • Divisibility rules (2, 3, 4, 6, 9, 10).	1
7.N.2	Apply number operations with real numbers and other number systems.	1
7.N.2.1	Students are able to add, subtract, multiply, and divide integers and positive fractions.	1
7.N.3	Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	2
7.N.3.1	Students are able to use various strategies to solve one- and two-step problems involving positive fractions and integers. • Formulate rules to solve practical problems involving integers (problem solving). • Use estimation strategies to make predictions and test the reasonableness of the answer. • Explain strategies and justify answers.	2
7.S	STATISTICS AND PROBABILITY	1
7.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	2
7.S.1.1	Students are able to find the mean, median, mode, and range of a set of data.	1
7.S.1.2	Students are able to display data, using frequency tables, line plots, stem-and-leaf plots, and make predictions from data displayed in a graph.	2
7.S.2	Apply the concepts of probability to predict events/outcomes and solve problems.	1

Table 7.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 7

Level	Description	DOK
7.S.2.1	Students are able, given a sample space, to find the probability of a specific outcome. • Simple probability. • Express probability as a ratio, decimal, or percent.	1

Table 8.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 8

Level	Description	DOK
8.A	ALGEBRA	2
8.A.1	Use procedures to transform algebraic expressions.	1
8.A.1.1	Students are able to use properties to expand, combine, and simplify 1st degree algebraic expressions with the set of integers. • Properties include associative, commutative, distributive, and identity properties. • Use order of operations with exponents and nested parentheses. • Determine if two 1st degree algebraic expressions are equivalent.	1
8.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
8.A.2.1	Students are able to write and solve two-step 1st degree equations, with one variable, and one-step inequalities, with one variable, using the set of integers. • Inverse operations • Addition property of equality. • Multiplication property of equality.	2
8.A.3	Interpret and develop mathematical models.	2
8.A.3.1	Students are able to describe and determine linear relationships. • Determine slope from a line or ordered pairs on a graph. • Identify x and y intercepts from a graph.	2
8.A.4	Describe and use properties and behaviors of relations, functions, and inverses.	2
8.A.4.1	Students are able to create rules to explain the relationship between numbers when a change in the first variable affects the second variable.	2
8.A.4.2	Students are able to describe and represent relations using tables, graphs, and rules. • Represent situations with patterns and relations to find exact or approximate solutions to problems. • Make predictions relating two variables using a rule or a graph.	2
8.G	GEOMETRY	1
8.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	1
8.G.1.1	Students are able to describe and classify prisms, pyramids, cylinders, and cone. • Faces, edges, and vertices.	1
8.G.1.2	Students, when given any two sides of an illustrated right triangle, are able to use the Pythagorean Theorem to find the third side. • Given the formula. • Using whole numbers for the known values.	1
8.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
8.G.2.1	Students are able to write and solve proportions that express the relationships between corresponding parts of similar quadrilaterals and triangles.	2
8.M	MEASUREMENT	2
8.M.1	Apply measurement concepts in practical applications.	2
8.M.1.1	Students are able to apply proportional reasoning to solve measurement problems with rational number measurements. • Conversion within measurement systems. • Use scale drawings to represent situations. • Indirect measurement.	2
8.M.1.2	Students are able to find area, volume, and surface area with whole number	1

Table 8.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 8

Level	Description	DOK
	measurements. • Use appropriate unit of measure • Apply strategies and/or formulas. • Volume of rectangular prisms, rectangular pyramids, cylinders, and cones. • Surface area of rectangular prisms and cylinders. • Area of composite shapes.	
8.N	NUMBER SENSE	1
8.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	1
8.N.1.1	Students are able to represent numbers in a variety of forms and identify the subsets of rational numbers. • Exponents • Scientific notation • Absolute value • Radicals (perfect squares) • Graph on a number line	1
8.N.2	Apply number operations with real numbers and other number systems.	1
8.N.2.1	Students are able to read, write, and compute within any subset of rational numbers. • Solve problems involving discount, markup, commission, profit, and simple interest.	1
8.N.3	Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	2
8.N.3.1	Students are able to use various strategies to solve multi-step problems involving rational numbers. • Explain strategies and justify answers. • Formulate rules to solve practical problems involving rational numbers. • Use estimation strategies to make predictions and test the reasonableness of the answer.	2
8.S	STATISTICS AND PROBABILITY	2
8.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	2
8.S.1.1	Students are able to find the mean, median, mode, and range of a data set from a stem-and-leaf plot and a line plot.	1
8.S.1.2	Students are able to use a variety of visual representations to display data to make comparisons and predictions. • Double bar graph • Double line graph • Scatterplot	2
8.S.2	Apply the concepts of probability to predict events/outcomes and solve problems.	2
8.S.2.1	Students are able to find the sample space and compute probability for two simultaneous independent events. • Express probability as a ratio, decimal, or percent.	2

Table 11.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 11

Level	Description	DOK
9-12.A	ALGEBRA	2
9-12.A.1	Use procedures to transform algebraic expressions.	2
9-12.A.1.1	Students are able to write equivalent forms of algebraic expressions using properties of the set of real numbers. • Evaluate algebraic expressions. • Use laws of exponents. • Use conventional order of operations, including grouping and exponents.	2
9-12.A.2	Use a variety of algebraic concepts and methods to solve equations and inequalities.	2
9-12.A.2.1	Students are able to use algebraic properties to transform multi-step, single-variable, first-degree equations.	1
9-12.A.2.2	Students are able to use algebraic properties to transform multi-step, single-variable, first-degree inequalities and represent solutions using a number line.	2
9-12.A.3	Interpret and develop mathematical models.	2
9-12.A.3.1	Students are able to create linear models to represent problem situations. • Calculate and interpret slope.	2
9-12.A.3.2	Students are able to distinguish between linear and nonlinear models.	1
9-12.A.4	Describe and use properties and behaviors of relations, functions, and inverses.	2
9-12.A.4.1	Students are able to use graphs, tables, and equations to represent linear functions.	2
9-12.G	GEOMETRY	2
9-12.G.1	Use deductive and inductive reasoning to recognize and apply properties of geometric figures.	2
9-12.G.1.1	Students are able to apply the properties of triangles and quadrilaterals to find unknown parts.	2
9-12.G.1.2	Students are able to identify and apply relationships among triangles. • Definitions and postulates • Similarity theorems • Congruence theorems	2
9-12.G.2	Use properties of geometric figures to solve problems from a variety of perspectives.	2
9-12.G.2.1	Students are able to recognize the relationship between a three-dimensional figure and its two-dimensional representation. • Interpret floor plans • Follow instructions for assembly of a product, e.g., “some assembly required.”	2
9-12.G.2.2	Students are able to reflect across vertical or horizontal lines, and translate two-dimensional figures. • Identify lines of symmetry. • Use the coordinate plane.	1
9-12.G.2.3	Students are able to use proportions to solve problems.	2
9-12.M	MEASUREMENT	1
9-12.M.1	Apply measurement concepts in practical applications.	1
9-12.M.1.	Students are able to choose appropriate unit label, scale, and precision. • Determine appropriate scales for histograms, scatterplots, and other graphs.	2

Table 11.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 11

Level	Description	DOK
1		
9-12.M.1.2	Students are able to use suitable units when describing rate of change.	1
9-12.M.1.3	Students are able to use formulas to find perimeter, circumference, and area to solve problems involving common geometric figures. • Use algebraic expressions with geometric formulas.	1
9-12.N	NUMBER SENSE	1
9-12.N.1	Analyze the structural characteristics of the real number system and its various subsystems. Analyze the concept of value, magnitude, and relative magnitude of real numbers.	1
9-12.N.1.1	Students are able to identify multiple representations of a real number. • Given a real number identify the subset(s) of real numbers to which it belongs. • Represent rational and irrational numbers in different forms.	1
9-12.N.1.2	Students are able to apply the concept of place value, magnitude, and relative magnitude of real numbers. • Scientific notation • Infinitely many solutions • Completeness of the real numbers (density, i.e. between any two real numbers is another real number).	1
9-12.N.2	Apply number operations with real numbers and other number systems.	1
9-12.N.2.1	Students are able to add, subtract, multiply, and divide real numbers including integral exponents.	1
9-12.N.3	Develop conjectures, predictions, or estimations to solve problems and verify or justify the results.	3
9-12.N.3.1	Students are able to use estimation strategies in problem situations to predict results and to check the reasonableness of results. • Use rounding as an estimation strategy. • Use non-routine estimation strategies.	2
9-12.N.3.2	Students are able to select alternative computational strategies and explain the chosen strategy. • Use properties of numbers that allow operational shortcuts for computational procedures.	3
9-12.S	STATISTICS AND PROBABILITY	2
9-12.S.1	Use statistical models to gather, analyze, and display data to draw conclusions.	3
9-12.S.1.1	Students are able to draw conclusions from a set of data. • Determine and use appropriate statistical values. • Determine which questions can or cannot be answered from a given data set.	3
9-12.S.1.2	Students are able to compare multiple one-variable data sets, using range, interquartile range, mean, mode, and median.	2
9-12.S.1.3	Represent a set of data in a variety of graphical forms and draw conclusions. • Make a scatterplot to draw a regression line and make predictions. • Make a box-and-whisker plot to model a set of one-variable data. • Make a histogram from a frequency distribution.	3

Table 11.14
Group Consensus
South Dakota Math Content Standards, Mathematics, Grade 11

Level	Description	DOK
9-12.S.2	Apply the concepts of probability to predict events/outcomes and solve problems.	2
9-12.S.2.1	Students are able to distinguish between experimental and theoretical probability.	1
9-12.S.2.2	Students are able to predict outcomes of simple events using given theoretical probabilities. • Determine the sample space of an experiment.	2

Appendix B

Data Analysis Tables

South Dakota
Grades 3-8 and 11
Mathematics
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.1

Standards #	Number of standards plus one for a generic standard for each standard.
Standards #	Average number of standards for reviewers. If the number is greater than the actual number in the standard, then at least one reviewer coded an item for the standard/standard but did not find any standard in the standard that corresponded to the item.
Level	The Depth-of-Knowledge level coded by the reviewers for the standards for each standard.
# of standards by Level	The number of standards coded at each level
% w/in std by Level	The percent of standards coded at each level
Hits Mean & SD	Mean and standard deviation number of items reviewers coded as corresponding to standard. The total is the total number of coded hits.
Cat. Conc. Accept.	"Yes" indicates that the standard met the acceptable level for criterion. "Yes" if mean is six or more. "Weak" if mean is five to six. "No" if mean is less than five.

Tables *grade*.2

	First five columns repeat columns from Table 1.
Level of Item w.r.t. Stand	Mean percent and standard deviation of items coded as "under" the Depth-of-Knowledge level of the corresponding standard, as "at" (the same) the Depth-of-Knowledge level of the corresponding standard, and as "above" the Depth-of-Knowledge level of the corresponding standard.
Depth-of-Know. Consistency Accept.	"Yes" indicates that 50% or more of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "Weak" indicates that 40% to 50% of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "No" indicates that less than 40% items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards.

Tables *grade*.3

First five columns repeat columns from Table 1 and 2.

Range of Standards

Standards Hit — Average number and standard deviation of the standards hit coded by reviewers.

% of Total — Average percent and standard deviation of the total standards that had at least one item coded.

Range of Know.

Accept. — "Yes" indicates that 50% or more of the standards had at least one coded standard.
"Weak" indicates that 40% to 50% of the standards had at least one coded standard.
"No" indicates that 40% or less of the standards had at least one coded standard.

Balance Index

% Hits in Std/Ttl Hits — Average and standard deviation of the percent of the items hit for a standard of total number of hits (see total under the Hits column).

Index — Average and standard deviation of the Balance Index.

Note: BALANCE INDEX $1 - (\sum_{k=1} \left| 1/(O) - I_{(k)}/(H) \right|)/2$

Where O = Total number of standards hit for the standard
$I_{(k)}$ = Number of items hit corresponding to standard (k)
H = Total number of items hit for the standard

Bal. of Rep Accept. — "Yes" indicates that the Balance Index was .7 or above (items evenly distributed among standards).
"Weak" indicates that the Balance Index was .6 to .7 (a high percentage of items coded as corresponding to two or three standards).
"No" indicates that the Balance Index was .6 or less (a high percentage of items coded as corresponding to one standard.)

Tables *grade*.4

Summary if standard met the acceptable level for the four criteria by each standard.

Tables *grade*.6

The DOK value for each assessment item given by each reviewer. The intraclass correlation for the group of reviewers is given on the last row.

Tables *grade*.8

The DOK level and standard code assigned by each reviewer for each item.

Tables *grade*.9

This list for each item all of the standards coded by the group of reviewers as corresponding to the item. Repeat of a standard indicates the number of reviewers who coded that standard as corresponding to the item.

Tables *grade*.10

This lists for each standard all of the items coded by the group of reviewers as corresponding to the standard. Repeat of an item indicates the number of reviewers who coded the item as corresponding to the standard.

Tables *grade*.12

This table summarizes the number of reviewers who coded an item as corresponding to a standard. It contains the same information as in Table 10.

Tables *grade*.13

This table can be used to compare the DOK level of a standard to the average DOK level of the items reviewers assigned to the standard. This table is helpful to identify items with a lower DOK level that should be replaced by an item with a higher DOK level to improve the Depth-of-Knowledge Consistency.

Table 3.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 3
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
3.A - ALGEGRA	4	7	1 2	2 5	28 71	26.71	1.58	YES
3.G - GEOMETRY	2	3	1 2	2 1	66 33	14	0	YES
3.M - MEASUREMENT	1	5	1 2	3 2	60 40	6.29	0.70	YES
3.N - NUMBER SENSE	3	5	1 2	4 1	80 20	22.86	1.46	YES
3.S - STATISTICS AND PROBABILITY	2	3	1 2 3	1 1 1	33 33 33	14.14	0.35	YES
Total	12	23	1 2 3	12 10 1	52 43 4	84	0	

Table 3.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 3

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
3.A - ALGEGRA	4	7	26.71	1.58	51	235	47	39	2	5	WEAK
3.G - GEOMETRY	2	3	14	0	39	301	60	39	1	5	YES
3.M - MEASUREMENT	1	5	6.29	0.70	42	96	58	42	0	0	YES
3.N - NUMBER SENSE	3	5	22.86	1.46	13	137	67	36	20	26	YES
3.S - STATISTICS AND PROBABILITY	2	3	14.14	0.35	37	266	57	45	6	13	YES
Total	12	23	84	0	34	42	62	41	4	15	

Table 3.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers

South Dakota Mathematics 2008 Grade 3

Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
3.A - ALGEGRA	4	7	26.71	1.58	6.71	0.45	96	6	YES	32	2	0.85	0.04	YES
3.G - GEOMETRY	2	3	14	0	3	0	100	0	YES	17	0	0.86	0.03	YES
3.M - MEASUREMENT	1	5	6.29	0.70	4	0	80	0	YES	7	1	0.82	0.03	YES
3.N - NUMBER SENSE	3	5	22.86	1.46	5	0	100	0	YES	27	2	0.75	0.04	YES
3.S - STATISTICS AND PROBABILITY	2	3	14.14	0.35	3	0	100	0	YES	17	0	0.82	0.07	YES
Total	12	23	84	0	4.34	1.41	95	8		20	9	0.82	0.06	

Table 3.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 3
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
3.A - ALGEGRA	YES	WEAK	YES	YES
3.G - GEOMETRY	YES	YES	YES	YES
3.M - MEASUREMENT	YES	YES	YES	YES
3.N - NUMBER SENSE	YES	YES	YES	YES
3.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 3

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	2	2	2	2	2	1	2
6	1	1	1	1	1	1	1
7	1	1	1	1	1	1	1
8	2	1	1	2	2	1	1
9	1	1	1	1	1	1	1
10	1	1	1	1	1	1	1
11	1	1	1	1	1	1	1
12	1	2	1	2	2	1	1
16	1	1	2	1	2	1	1
17	1	2	1	1	1	1	2
18	1	1	1	1	1	1	1
19	1	2	2	2	2	1	1
20	2	2	2	2	2	2	2
21	1	2	1	1	2	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1
27	1	1	2	1	1	1	1
28	1	1	1	1	1	1	1
29	1	2	1	1	1	1	1
30	2	2	2	2	2	2	2
31	1	1	1	1	2	1	1
32	1	2	1	1	1	1	1
33	1	1	1	1	2	1	1
34	1	1	1	1	1	1	1
35	1	1	1	1	1	1	2
36	1	2	1	1	2	1	1
37	2	2	1	1	1	1	1
38	1	1	1	1	1	1	1
39	1	2	1	2	1	1	1
43	1	2	1	1	1	1	1
44	1	1	1	1	1	1	1
45	1	1	1	1	2	1	1
46	1	1	1	1	1	1	1
47	1	1	1	2	2	1	2
48	2	2	1	2	2	1	2
49	1	1	1	1	1	1	1
50	1	1	1	2	1	1	1
51	1	1	1	1	1	1	2

Table 3.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 3

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	2	2	2	2	2	2	2
53	1	2	1	1	2	2	2
54	2	2	2	2	2	2	2
55	1	1	1	1	1	1	1
56	1	1	1	2	1	1	1
57	1	2	2	2	1	1	1
58	1	1	1	1	1	1	1
59	1	1	1	1	2	1	1
60	2	2	1	1	2	1	1
61	1	2	1	1	1	1	1
62	1	1	1	1	2	1	1
63	1	1	1	1	1	1	1
64	1	2	1	1	1	1	1
65	1	1	1	1	1	1	1
66	2	2	2	2	2	2	2
67	1	2	1	1	2	1	1
68	1	1	1	1	1	1	1
69	2	2	1	1	2	1	1
70	1	1	1	1	1	1	1
71	1	1	1	1	1	1	1
72	1	2	1	1	1	1	1
73	2	2	2	2	2	1	2
74	2	2	2	2	2	1	2
75	1	2	1	1	1	1	1
76	1	1	1	1	1	1	1
77	1	1	1	2	1	2	2
78	1	1	1	1	2	1	1
79	1	1	1	1	1	1	1
80	1	2	1	1	1	1	1
83	1	2	1	1	1	1	1
84	2	1	1	1	1	1	1
85	1	1	1	1	1	1	1
86	2	2	2	2	2	2	1
87	1	1	1	1	1	1	1
88	1	1	1	1	1	1	1
89	2	2	1	1	1	1	1
90	1	1	1	1	1	1	2
91	1	1	1	1	2	1	1
92	1	1	1	1	1	1	1

Intraclass Correlation: 0.8483
Pairwise Comparison: 0.7959

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 3

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1
2	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.1.2	1	3.G.2.1	1	3.G.2.1
3	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1
4	1	3.M.1.1	1	3.M.1.1	1	3.M.1.1	1	3.M.1.1	1	3.M.1.1	1	3.M.1.1	1	3.M.1.1
5	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	1	3.N.2.1	2	3.N.2.1
6	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1
7	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1
8	2	3.N.2.1	1	3.N.2.1	1	3.N.2.1	2	3.N.2.1	2	3.N.2.1	1	3.N.2.1	1	3.N.2.1
9	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.2	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1
10	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1
11	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2
12	1	3.N.2.1	2	3.A.2.2	1	3.N.2.1	2	3.N.1.2	2	3.A.2.2	1	3.N.2.1	1	3.N.2.1
16	1	3.N.1.3	1	3.N.1.3	2	3.N.1.3	1	3.N.1.3	2	3.N.1.3	1	3.N.1.3	1	3.N.1.3
17	1	3.N.1.3	2	3.N.1.3	1	3.N.1.3	1	3.N.1.3	1	3.N.3.1	1	3.N.1.3	2	3.N.1.3
18	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
19	1	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	1	3.S.1.1	1	3.S.1.1
20	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1
21	1	3.M.1.2	2	3.M.1.2	1	3.M.1.2	1	3.M.1.2	2	3.M.1.2	1	3.M.1.2	1	3.M.1.2
22	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1
23	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.N.3.1	1	3.A.4.1
24	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2
25	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1
26	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2
27	1	3.S.2.1	1	3.S.2.1	2	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1
28	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2
29	1	3.N.2.1	2	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.N.2.1
30	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1
31	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	2	3.A.1.1	1	3.A.1.1	1	3.A.1.1
32	1	3.N.1.1	2	3.N.1.1	1	3.N.1.1	1	3.N.1.1	1	3.N.1.1	1	3.N.1.1	1	3.N.1.1
33	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	2	3.A.2.1	1	3.A.2.1	1	3.A.2.1
34	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1
35	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	2	3.N.1.3
36	1	3.S.1.1	2	3.S.1.1	1	3.S.1.1	1	3.S.1.1	2	3.S.1.1	1	3.S.1.1	1	3.S.1.1
37	2	3.S.2.1	2	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1
38	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	1	3.A.2.1	1	3.S.2.1
39	1	3.N.3.1	2	3.N.3.1	1	3.N.3.1	2	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
43	1	3.S.2.1	2	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.1.2	1	3.S.2.1
44	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
45	1	3.M.1.4	1	3.M.1.4	1	3.M.1.4	1	3.M.1.4	2	3.M.1.4	1	3.M.1.4	1	3.M.1.4

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 3

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
46	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.1.2	1	3.S.2.1
47	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	2	3.A.1.1	2	3.A.1.1	1	3.A.1.1	2	3.A.1.1
48	2	3.G.2.1	2	3.G.2.1	1	3.G.2.1	2	3.G.2.1	2	3.G.2.1	1	3.G.2.1	2	3.G.2.1
49	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2
50	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	2	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1
51	1	3.G.1.2	1	3.G.1.1	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	1	3.G.1.2	2	3.G.1.2
52	2	3.M.1.2	2	3.M.1.2	2	3.M.1.2	2	3.M.1.2	2	3.M.1.2	2	3.M.1.2	2	3.M.1.2
53	1	3.A.2.1	2	3.A.2.1	1	3.A.2.1	1	3.A.2.1	2	3.A.2.1	2	3.A.2.1	2	3.A.2.1
54	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2
55	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2
56	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	2	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1
57	1	3.A.4.2	2	3.A.4.2	2	3.A.4.2	2	3.N.2.1	1	3.A.4.2	1	3.N.1.2	1	3.N.2.1
58	1	3.A.4.1	1	3.A.4.1	1	3.A.4.1	1	3.A.4.2	1	3.A.4.1	1	3.A.4.1	1	3.N.1.2
59	1	3.N.1.2	1	3.A.1.1	1	3.N.1.2	1	3.N.1.2	2	3.A.4.2	1	3.A.2.2	1	3.N.1.2
60	2	3.S.1.2	2	3.S.1.1	1	3.S.1.1	1	3.S.1.2	2	3.S.1.1	1	3.S.1.2	1	3.S.1.1
61	1	3.N.3.1	2	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
62	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	1	3.N.1.3	2	3.N.1.3	1	3.N.1.3	1	3.N.1.3
63	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1
64	1	3.N.2.1	2	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.N.2.1	1	3.A.2.2
65	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
66	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.2	2	3.S.1.1	2	3.S.1.2	2	3.S.1.1
67	1	3.G.2.1	2	3.G.2.1	1	3.G.2.1	1	3.G.2.1	2	3.G.2.1	1	3.G.2.1	1	3.G.2.1
68	1	3.M.1.2	1	3.A.3.1	1	3.N.1.2	1	3.A.3.1	1	3.N.2.1	1	3.A.3.1	1	3.A.3.1
69	2	3.A.4.1	2	3.A.4.1	1	3.A.4.1	1	3.A.4.1	2	3.A.4.1	1	3.A.4.1	1	3.A.4.1
70	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1
71	1	3.M.1.2	1	3.A.3.1	1	3.N.1.2	1	3.A.3.1	1	3.N.2.1	1	3.A.3.1	1	3.A.3.1
72	1	3.S.2.1	2	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1
73	2	3.A.2.2	2	3.A.2.2	2	3.A.2.2	2	3.A.2.2	2	3.A.2.2	1	3.A.2.2	2	3.A.2.2
74	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	2	3.N.2.1	1	3.N.2.1	2	3.N.2.1
75	1	3.N.3.1	2	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
76	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1	1	3.G.1.1
77	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	2	3.A.3.1	1	3.A.3.1	2	3.A.2.2	2	3.A.3.1
78	1	3.M.1.4	1	3.M.1.4	1	3.M.1.4	1	3.M.1.4	2	3.M.1.4	1	3.M.1.4	1	3.M.1.4
79	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2
80	1	3.G.1.1	2	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.2.1	1	3.G.1.1
83	1	3.S.2.1	2	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1	1	3.S.2.1
84	2	3.A.4.2	1	3.A.1.1	1	3.A.1.1	1	3.A.1.1	1	3.A.4.2	1	3.A.1.1	1	3.N.2.1
85	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1	1	3.N.3.1
86	2	3.S.1.2	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	2	3.S.1.1	1	3.S.1.1

Table 3.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 3

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
87	1	3.M.1.5	1	3.M.1.5	1	3.M.1.5	1	3.M.1.5	1	3.M.1.5	1	3.M.1.5	1	3.M.1.5
88	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1	1	3.A.3.1
89	2	3.A.2.2	2	3.A.2.2	1	3.A.2.2	1	3.N.2.1	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2
90	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	1	3.A.1.2	2	3.A.2.2
91	1	3.A.2.2	1	3.A.2.2	1	3.A.2.2	1	3.N.2.1	2	3.A.2.2	1	3.N.2.1	1	3.A.2.2
92	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2	1	3.A.4.1	1	3.N.1.2	1	3.N.1.2	1	3.N.1.2

Objective Pairwise Comparison: 0.873
Standard Pairwise Comparison: 0.9354

Table 3.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 3

Low		Medium		High
0		6.391304		7

1 3351226	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
2 3528046	3.G.1.2	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
3 2176941	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
4 2176949	3.M.1.1	3.M.1.1	3.M.1.1	3.M.1.1	3.M.1.1	3.M.1.1	3.M.1.1
5 3427068	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
6 2176979	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1
7 3528467	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1
8 2104973	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
9 3529121	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.2
10 3328607	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1
11 3328617	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2
12 2104978	3.A.2.2	3.A.2.2	3.N.1.2	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
16 2176958	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3
17 3528162	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.3.1
18 3427064	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
19 3530552	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1
20 2176989	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1
21 2176972	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2
22 3427071	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
23 2176987	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.N.3.1
24 3344689	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2
25 2176926	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1
26 3528476	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2
27 3528688	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
28 2345751	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2
29 2176946	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
30 2176966	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
31 3528475	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1
32 3528132	3.N.1.1	3.N.1.1	3.N.1.1	3.N.1.1	3.N.1.1	3.N.1.1	3.N.1.1
33 3344686	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1
34 3528033	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1
35 2176956	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3
36 3427067	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1
37 3537250	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
38 3525574	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.S.2.1
39 3528048	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
43 3528676	3.S.1.2	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
44 3328564	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
45 2176950	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4
46 3528687	3.S.1.2	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
47 2176903	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1
48 3351228	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1

Table 3.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 3

49 2176909	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2
50 3528731	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1
51 2345752	3.G.1.1	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2	3.G.1.2
52 3537228	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2	3.M.1.2
53 3351210	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1	3.A.2.1
54 3529262	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2
55 3528172	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2
56 3426897	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1
57 3528161	3.A.4.2	3.A.4.2	3.A.4.2	3.A.4.2	3.N.1.2	3.N.2.1	3.N.2.1
58 3525572	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.2	3.N.1.2
59 3529153	3.A.1.1	3.A.2.2	3.A.4.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2
60 3529201	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.2	3.S.1.2	3.S.1.2
61 3528051	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
62 2176969	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3	3.N.1.3
63 3328560	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
64 3528169	3.A.2.2	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
65 3344693	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
66 3529224	3.S.1.1	3.S.1.1	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2	3.S.1.2
67 3351223	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
68 2176976	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.M.1.2	3.N.1.2	3.N.2.1
69 3533641	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1	3.A.4.1
70 3528474	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1
71 2176973	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.M.1.2	3.N.1.2	3.N.2.1
72 3537270	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
73 2176911	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2
74 2176964	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1	3.N.2.1
75 3351233	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
76 2176933	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1	3.G.1.1
77 2176919	3.A.2.2	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1
78 3528044	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4	3.M.1.4
79 3525575	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2
80 3328559	3.G.1.1	3.G.1.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1	3.G.2.1
83 3528645	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1	3.S.2.1
84 3529171	3.A.1.1	3.A.1.1	3.A.1.1	3.A.1.1	3.A.4.2	3.A.4.2	3.N.2.1
85 3351231	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1	3.N.3.1
86 2176988	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.1	3.S.1.2
87 3526951	3.M.1.5	3.M.1.5	3.M.1.5	3.M.1.5	3.M.1.5	3.M.1.5	3.M.1.5
88 2176921	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1	3.A.3.1
89 3528482	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.N.2.1
90 3525576	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.1.2	3.A.2.2
91 3525573	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.A.2.2	3.N.2.1	3.N.2.1
92 3528485	3.A.4.1	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2	3.N.1.2

Table 3.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 3

Low		Medium		High
0		14.34146		53

3.A																				
3.A.1																				
3.A.1.1	31	31	31	31	31	31	31	47	47	47	47	47	47	47	56	56	56	56	56	56
	56	59	70	70	70	70	70	70	70	84	84	84	84							
3.A.1.2	49	49	49	49	49	49	49	79	79	79	79	79	79	79	90	90	90	90	90	90
3.A.2																				
3.A.2.1	33	33	33	33	33	33	33	38	38	38	38	38	38	53	53	53	53	53	53	53
3.A.2.2	12	12	26	26	26	26	26	26	26	59	64	73	73	73	73	73	73	73	77	89
	89	89	89	89	89	90	91	91	91	91	91									
3.A.3																				
3.A.3.1	6	6	6	6	6	6	6	25	25	25	25	25	25	25	50	50	50	50	50	50
	50	68	68	68	68	71	71	71	71	77	77	77	77	77	77	88	88	88	88	
	88	88	88																	
3.A.4																				
3.A.4.1	7	7	7	7	7	7	7	9	9	9	9	9	9	23	23	23	23	23	23	58
	58	58	58	58	69	69	69	69	69	69	69	92								
3.A.4.2	9	57	57	57	57	58	59	84	84											
3.G																				
3.G.1																				
3.G.1.1	10	10	10	10	10	10	10	34	34	34	34	34	34	34	51	76	76	76	76	76
	76	76	80	80																
3.G.1.2	2	11	11	11	11	11	11	11	24	24	24	24	24	24	24	28	28	28	28	28

Table 3.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 3

	28	28	51	51	51	51	51	51												
3.G.2																				
3.G.2.1	1	1	1	1	1	1	1	2	2	2	2	2	2	3	3	3	3	3	3	3
	48	48	48	48	48	48	48	63	63	63	63	63	63	63	67	67	67	67	67	
	67	67	80	80	80	80	80													
3.M																				
3.M.1																				
3.M.1.1	4	4	4	4	4	4	4													
3.M.1.2	21	21	21	21	21	21	21	52	52	52	52	52	52	52	68	71				
3.M.1.3																				
3.M.1.4	45	45	45	45	45	45	45	78	78	78	78	78	78	78						
3.M.1.5	87	87	87	87	87	87	87													
3.N																				
3.N.1																				
3.N.1.1	32	32	32	32	32	32	32													
3.N.1.2	12	55	55	55	55	55	55	55	57	58	59	59	59	59	68	71	92	92	92	92
	92	92																		
3.N.1.3	16	16	16	16	16	16	16	17	17	17	17	17	17	35	35	35	35	35	35	35
	62	62	62	62	62	62	62													
3.N.2																				
3.N.2.1	5	5	5	5	5	5	5	8	8	8	8	8	8	8	12	12	12	12	29	29
	29	29	29	29	29	30	30	30	30	30	30	30	57	57	64	64	64	64	64	
	64	68	71	74	74	74	74	74	74	74	84	89	91	91						
3.N.3																				
3.N.3.1	17	18	18	18	18	18	18	18	23	39	39	39	39	39	39	39	44	44	44	44

Table 3.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 3

	44	44	44	61	61	61	61	61	61	61	65	65	65	65	65	65	65	75	75
	75	75	75	75	75	85	85	85	85	85	85	85							
3.S																			
3.S.1																			
3.S.1.1	19	19	19	19	19	19	19	20	20	20	20	20	20	20	36	36	36	36	36	36
	36	60	60	60	60	66	66	86	86	86	86	86	86						
3.S.1.2	43	46	54	54	54	54	54	54	54	60	60	60	66	66	66	66	66	86	
3.S.2																			
3.S.2.1	22	22	22	22	22	22	22	27	27	27	27	27	27	27	37	37	37	37	37	37
	37	38	43	43	43	43	43	43	46	46	46	46	46	46	72	72	72	72	72
	72	72	83	83	83	83	83	83	83										

Table 3.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 3

Low		Medium		High
1		3		7

3.A													
3.A.1													
3.A.1.1	31:7	47:7	56:7	59:1	70:7	84:4							
3.A.1.2	49:7	79:7	90:6										
3.A.2													
3.A.2.1	33:7	38:6	53:7										
3.A.2.2	12:2	26:7	59:1	64:1	73:7	77:1	89:6	90:1	91:5				
3.A.3													
3.A.3.1	6:7	25:7	50:7	68:4	71:4	77:6	88:7						
3.A.4													
3.A.4.1	7:7	9:6	23:6	58:5	69:7	92:1							
3.A.4.2	9:1	57:4	58:1	59:1	84:2								
3.G													
3.G.1													
3.G.1.1	10:7	34:7	51:1	76:7	80:2								
3.G.1.2	2:1	11:7	24:7	28:7	51:6								
3.G.2													
3.G.2.1	1:7	2:6	3:7	48:7	63:7	67:7	80:5						
3.M													
3.M.1													
3.M.1.1	4:7												
3.M.1.2	21:7	52:7	68:1	71:1									
3.M.1.3													
3.M.1.4	45:7	78:7											
3.M.1.5	87:7												
3.N													
3.N.1													
3.N.1.1	32:7												
3.N.1.2	12:1	55:7	57:1	58:1	59:4	68:1	71:1	92:6					
3.N.1.3	16:7	17:6	35:7	62:7									
3.N.2													
3.N.2.1	5:7	8:7	12:4	29:7	30:7	57:2	64:6	68:1	71:1	74:7	84:1	89:1	91:2
3.N.3													
3.N.3.1	17:1	18:7	23:1	39:7	44:7	61:7	65:7	75:7	85:7				
3.S													
3.S.1													
3.S.1.1	19:7	20:7	36:7	60:4	66:2	86:6							
3.S.1.2	43:1	46:1	54:7	60:3	66:5	86:1							
3.S.2													
3.S.2.1	22:7	27:7	37:7	38:1	43:6	46:6	72:7	83:7					

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 3

Low		Medium		High
1		3		7

1 3351226	3.G.2.1:7		
2 3528046	3.G.1.2:1	3.G.2.1:6	
3 2176941	3.G.2.1:7		
4 2176949	3.M.1.1:7		
5 3427068	3.N.2.1:7		
6 2176979	3.A.3.1:7		
7 3528467	3.A.4.1:7		
8 2104973	3.N.2.1:7		
9 3529121	3.A.4.1:6	3.A.4.2:1	
10 3328607	3.G.1.1:7		
11 3328617	3.G.1.2:7		
12 2104978	3.A.2.2:2	3.N.1.2:1	3.N.2.1:4
16 2176958	3.N.1.3:7		
17 3528162	3.N.1.3:6	3.N.3.1:1	
18 3427064	3.N.3.1:7		
19 3530552	3.S.1.1:7		
20 2176989	3.S.1.1:7		
21 2176972	3.M.1.2:7		
22 3427071	3.S.2.1:7		
23 2176987	3.A.4.1:6	3.N.3.1:1	
24 3344689	3.G.1.2:7		
25 2176926	3.A.3.1:7		
26 3528476	3.A.2.2:7		
27 3528688	3.S.2.1:7		
28 2345751	3.G.1.2:7		
29 2176946	3.N.2.1:7		
30 2176966	3.N.2.1:7		
31 3528475	3.A.1.1:7		
32 3528132	3.N.1.1:7		
33 3344686	3.A.2.1:7		
34 3528033	3.G.1.1:7		
35 2176956	3.N.1.3:7		
36 3427067	3.S.1.1:7		
37 3537250	3.S.2.1:7		
38 3525574	3.A.2.1:6	3.S.2.1:1	
39 3528048	3.N.3.1:7		
43 3528676	3.S.1.2:1	3.S.2.1:6	
44 3328564	3.N.3.1:7		
45 2176950	3.M.1.4:7		
46 3528687	3.S.1.2:1	3.S.2.1:6	
47 2176903	3.A.1.1:7		
48 3351228	3.G.2.1:7		

Table 3.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 3

49 2176909	3.A.1.2:7			
50 3528731	3.A.3.1:7			
51 2345752	3.G.1.1:1	3.G.1.2:6		
52 3537228	3.M.1.2:7			
53 3351210	3.A.2.1:7			
54 3529262	3.S.1.2:7			
55 3528172	3.N.1.2:7			
56 3426897	3.A.1.1:7			
57 3528161	3.A.4.2:4	3.N.1.2:1	3.N.2.1:2	
58 3525572	3.A.4.1:5	3.A.4.2:1	3.N.1.2:1	
59 3529153	3.A.1.1:1	3.A.2.2:1	3.A.4.2:1	3.N.1.2:4
60 3529201	3.S.1.1:4	3.S.1.2:3		
61 3528051	3.N.3.1:7			
62 2176969	3.N.1.3:7			
63 3328560	3.G.2.1:7			
64 3528169	3.A.2.2:1	3.N.2.1:6		
65 3344693	3.N.3.1:7			
66 3529224	3.S.1.1:2	3.S.1.2:5		
67 3351223	3.G.2.1:7			
68 2176976	3.A.3.1:4	3.M.1.2:1	3.N.1.2:1	3.N.2.1:1
69 3533641	3.A.4.1:7			
70 3528474	3.A.1.1:7			
71 2176973	3.A.3.1:4	3.M.1.2:1	3.N.1.2:1	3.N.2.1:1
72 3537270	3.S.2.1:7			
73 2176911	3.A.2.2:7			
74 2176964	3.N.2.1:7			
75 3351233	3.N.3.1:7			
76 2176933	3.G.1.1:7			
77 2176919	3.A.2.2:1	3.A.3.1:6		
78 3528044	3.M.1.4:7			
79 3525575	3.A.1.2:7			
80 3328559	3.G.1.1:2	3.G.2.1:5		
83 3528645	3.S.2.1:7			
84 3529171	3.A.1.1:4	3.A.4.2:2	3.N.2.1:1	
85 3351231	3.N.3.1:7			
86 2176988	3.S.1.1:6	3.S.1.2:1		
87 3526951	3.M.1.5:7			
88 2176921	3.A.3.1:7			
89 3528482	3.A.2.2:6	3.N.2.1:1		
90 3525576	3.A.1.2:6	3.A.2.2:1		
91 3525573	3.A.2.2:5	3.N.2.1:2		
92 3528485	3.A.4.1:1	3.N.1.2:6		

Table 3.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 3

Low DOK		Matched DOK		High DOK
1		3		7

3.A [2]:									
3.A.1 [2]:									
3.A.1.1 [2]:	31:7 [1.14]	47:7 [1.43]	56:7 [1.14]	59:1 [1]	70:7 [1]	84:4 [1]			
3.A.1.2 [1]:	49:7 [1]	79:7 [1]	90:6 [1]						
3.A.2 [2]:									
3.A.2.1 [2]:	33:7 [1.14]	38:6 [1]	53:7 [1.57]						
3.A.2.2 [2]:	12:2 [2]	26:7 [1]	59:1 [1]	64:1 [1]	73:7 [1.86]	77:1 [2]	89:6 [1.33]	90:1 [2]	91:5 [1.2]
3.A.3 [1]:									
3.A.3.1 [1]:	6:7[1]	25:7 [1]	50:7 [1.14]	68:4 [1]	71:4 [1]	77:6 [1.33]	88:7 [1]		
3.A.4 [2]:									
3.A.4.1 [2]:	7:7[1]	9:6[1]	23:6 [1]	58:5 [1]	69:7 [1.43]	92:1 [1]			
3.A.4.2 [2]:	9:1[1]	57:4 [1.5]	58:1 [1]	59:1 [2]	84:2 [1.5]				
3.G [1]:									
3.G.1									

Table 3.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 3

[1]:								
3.G.1.1 [1]:	10:7 [1]	34:7 [1]	51:1 [1]	76:7 [1]	80:2 [1]			
3.G.1.2 [1]:	2:1[1]	11:7 [1]	24:7 [1]	28:7 [1]	51:6 [1.17]			
3.G.2 [2]:								
3.G.2.1 [2]:	1:7[1]	2:6[1]	3:7[1]	48:7 [1.71]	63:7 [1]	67:7 [1.29]	80:5 [1.2]	
3.M [1]:								
3.M.1 [1]:								
3.M.1.1 [1]:	4:7[1]							
3.M.1.2 [2]:	21:7 [1.29]	52:7 [2]	68:1 [1]	71:1 [1]				
3.M.1.3 [1]:								
3.M.1.4 [2]:	45:7 [1.14]	78:7 [1.14]						
3.M.1.5 [1]:	87:7 [1]							
3.N [1]:								
3.N.1 [1]:								
3.N.1.1 [1]:	32:7 [1.14]							
3.N.1.2 [1]:	12:1 [2]	55:7 [1]	57:1 [1]	58:1 [1]	59:4 [1]	68:1 [1]	71:1 [1]	92:6 [1]

Table 3.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 3

3.N.1.3 [2]:	16:7 [1.29]	17:6 [1.33]	35:7 [1.14]	62:7 [1.14]									
3.N.2 [1]:													
3.N.2.1 [1]:	5:7[1.86]	8:7[1.43]	12:4 [1]	29:7 [1.14]	30:7 [2]	57:2 [1.5]	64:6 [1.17]	68:1 [1]	71:1 [1]	74:7 [1.86]	84:1 [1]	89:1 [1]	91:2 [1]
3.N.3 [1]:													
3.N.3.1 [1]:	17:1 [1]	18:7 [1]	23:1 [1]	39:7 [1.29]	44:7 [1]	61:7 [1.14]	65:7 [1]	75:7 [1.14]	85:7 [1]				
3.S [2]:													
3.S.1 [3]:													
3.S.1.1 [3]:	19:7 [1.57]	20:7 [2]	36:7 [1.29]	60:4 [1.5]	66:2 [2]	86:6 [1.83]							
3.S.1.2 [2]:	43:1 [1]	46:1 [1]	54:7 [2]	60:3 [1.33]	66:5 [2]	86:1 [2]							
3.S.2 [1]:													
3.S.2.1 [1]:	22:7 [1]	27:7 [1.14]	37:7 [1.29]	38:1 [1]	43:6 [1.17]	46:6 [1]	72:7 [1.14]	83:7 [1.14]					

Table 4.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 4
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
4.A - ALGEBRA	4	7	1 2	5 2	71 28	26.29	0.45	YES
4.G - GEOMETRY	2	5	1 2	3 1	75 25	13.86	0.35	YES
4.M - MEASUREMENT	1	4	1 2	2 2	50 50	9.57	1.05	YES
4.N - NUMBER SENSE	3	8.43	1 2	5 2	71 28	21.29	1.39	YES
4.S - STATISTICS AND PROBABILITY	2	4	1 2 3	1 1 1	33 33 33	13	0	YES
Total	12	28.43	1 2 3	16 8 1	64 32 4	84	0	

Table 4.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 4

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
4.A - ALGEBRA	4	7	26.29	0.45	22	170	67	26	11	19	YES
4.G - GEOMETRY	2	5	13.86	0.35	7	48	81	26	11	23	YES
4.M - MEASUREMENT	1	4	9.57	1.05	35	120	58	38	7	19	YES
4.N - NUMBER SENSE	3	8.43	21.29	1.39	20	123	75	30	5	15	YES
4.S - STATISTICS AND PROBABILITY	2	4	13	0	63	233	35	40	2	11	NO
Total	12	28.43	84	0	23	36	70	36	8	18	

Table 4.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers

South Dakota Mathematics 2008 Grade 4

Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
4.A - ALGEBRA	4	7	26.29	0.45	7	0	100	0	YES	31	1	0.80	0.01	YES
4.G - GEOMETRY	2	5	13.86	0.35	5	0	100	0	YES	16	0	0.84	0.03	YES
4.M - MEASUREMENT	1	4	9.57	1.05	4	0	100	0	YES	11	1	0.78	0.05	YES
4.N - NUMBER SENSE	3	8.43	21.29	1.39	8.14	0.35	97	5	YES	25	2	0.77	0.03	YES
4.S - STATISTICS AND PROBABILITY	2	4	13	0	4	0	100	0	YES	15	0	0.71	0.01	YES
Total	12	28.43	84	0	5.63	1.67	99	3		20	7	0.78	0.05	

Table 4.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 4
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
4.A - ALGEBRA	YES	YES	YES	YES
4.G - GEOMETRY	YES	YES	YES	YES
4.M - MEASUREMENT	YES	YES	YES	YES
4.N - NUMBER SENSE	YES	YES	YES	YES
4.S - STATISTICS AND PROBABILITY	YES	NO	YES	YES

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 4

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	2	2	2	2	2	2	2
4	1	1	1	1	1	1	1
5	1	1	1	1	1	1	1
6	2	1	2	2	2	1	2
7	1	1	1	2	1	1	1
8	1	1	1	1	1	1	1
9	1	1	1	2	1	1	2
10	1	1	1	1	1	1	1
11	1	1	2	1	2	1	1
12	1	1	1	1	1	1	1
16	1	1	2	1	1	1	2
17	1	1	1	1	1	1	1
18	1	1	1	1	1	1	1
19	1	2	2	2	2	2	2
20	1	2	2	1	2	2	2
21	2	2	2	2	2	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1
24	2	2	2	2	2	1	2
25	1	1	1	1	1	1	1
26	2	1	1	1	1	1	1
27	2	2	1	1	1	2	2
28	1	1	1	1	1	1	1
29	1	2	2	1	1	2	1
30	1	1	1	1	1	1	1
31	2	2	1	1	2	2	2
32	1	1	1	1	1	1	1
33	2	2	1	1	1	1	2
34	2	2	2	2	1	1	2
35	1	2	1	1	1	1	1
36	1	1	1	2	1	1	1
37	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1
39	2	2	1	1	2	1	2
43	2	1	1	1	1	1	1
44	1	1	1	1	1	1	1
45	2	2	2	2	2	2	2
46	2	2	2	1	1	1	2
47	2	2	2	2	1	2	2
48	2	1	1	1	1	1	2
49	1	1	1	2	1	1	1
50	2	2	2	2	2	2	2
51	2	2	2	1	2	1	2

Table 4.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 4

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	2	1	1	1	1	1	1
53	1	1	1	1	1	1	1
54	2	1	1	1	1	1	2
55	1	1	1	1	1	1	1
56	2	2	2	2	2	1	2
57	2	2	2	2	2	2	2
58	1	1	1	1	1	1	2
59	1	1	1	1	1	1	1
60	1	1	1	1	1	1	1
61	1	1	1	1	1	1	1
62	1	1	1	1	1	1	1
63	2	2	1	1	1	1	2
64	1	1	1	1	1	1	1
65	1	2	2	2	2	2	2
66	1	1	2	1	1	1	2
67	1	1	1	1	1	1	1
68	1	1	1	1	1	1	1
69	1	2	1	1	1	1	2
70	1	1	1	1	2	1	1
71	2	2	2	2	2	2	2
72	1	1	1	1	1	1	1
73	1	2	2	2	1	1	2
74	1	1	1	1	1	1	1
75	2	2	1	2	1	1	2
76	1	1	1	1	1	1	1
77	1	2	1	1	2	1	2
78	2	2	2	2	1	2	2
79	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1
81							
82							
83	1	1	1	1	1	1	1
84	2	2	2	2	1	2	2
85	1	2	1	1	1	1	2
86	2	1	2	1	1	1	1
87	1	2	1	1	1	1	1
88	2	2	2	1	2	1	1
89	1	1	1	1	2	1	1
90	2	1	1	1	1	1	1
91	2	1	1	1	1	1	1
92	1	1	1	1	1	1	1

Intraclass Correlation: 0.8695
Pairwise Comparison: 0.7789

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 4

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2
2	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1
3	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1
4	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2
5	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.3	1	4.N.1	1	4.N.1
6	2	4.N.1.3	1	4.N.1.3	2	4.N.1.3	2	4.N.1.3	2	4.N.1.3	1	4.N.1.3	2	4.N.1.3
7	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	2	4.S.1.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1
8	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3
9	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	2	4.A.1.1	1	4.A.1.1	1	4.A.1.1	2	4.A.1.1
10	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2
11	1	4.M.1.3	1	4.M.1.3	2	4.M.1.3	1	4.M.1.3	2	4.M.1.3	1	4.M.1.3	1	4.M.1.3
12	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1
16	1	4.M.1.2	1	4.M.1.2	2	4.M.1.2	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2	2	4.M.1.2
17	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4
18	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1
19	1	4.S.1.1	2	4.S.1.1	2	4.S.1.1	2	4.S.1.1	2	4.S.1.1	2	4.S.1.1	2	4.S.1.1
20	1	4.S.1.1	2	4.S.1.1	2	4.S.1.1	1	4.S.1.1	2	4.S.1.1	2	4.S.1.1	2	4.S.1.1
21	2	4.M.1.2	2	4.M.1.2	2	4.M.1.2	2	4.M.1.2	2	4.M.1.2	1	4.M.1.2	1	4.M.1.2
22	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2
23	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1
24	2	4.M.1.2	2	4.A.4.1	2	4.M.1.2	2	4.M.1.2	2	4.M.1.2	1	4.M.1.2	2	4.M.1.2
25	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1
26	2	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1
27	2	4.A.4.1	2	4.N.2.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	2	4.A.4.1	2	4.A.4.1
28	1	4.G.2.2	1	4.G.2.1	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2
29	1	4.N.1.3	2	4.N.1.3	2	4.N.1.3	1	4.N.1.3	1	4.N.1.3	2	4.N.1.3	1	4.N.1.3
30	1	4.N.1.2	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1
31	2	4.S.1.1	2	4.S.1.1	1	4.S.1.1	1	4.S.1.1	2	4.S.1.1	2	4.S.1.2	2	4.S.1.1
32	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1
33	2	4.G.1.1	2	4.G.2.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	2	4.G.1.1
34	2	4.M.1.1	2	4.M.1.1	2	4.M.1.1	2	4.M.1.1	1	4.M.1.1	1	4.M.1.1	2	4.M.1.1
35	1	4.S.1.2	2	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2
36	1	4.A.3.1	1	4.A.1.3	1	4.A.1.1	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1
37	1	4.M.1.3	1	4.N.1.4	1	4.N.1.4	1	4.N.1.4	1	4.N.1.4	1	4.N.1.4	1	4.N.1.4
38	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.1	1	4.N.3	1	4.N.1	1	4.N.1
39	2	4.S.2.1	2	4.S.2.1	1	4.S.2.1	1	4.S.2.1	2	4.S.2.1	1	4.S.2.1	2	4.S.2.1
43	2	4.G.2.1	1	4.G.2.1	1	4.G.2.1	1	4.G.2.1	1	4.G.2.1	1	4.G.2.1	1	4.G.2.1
44	1	4.A.1.2	1	4.A.1.2	1	4.A.1.2	1	4.A.1.2	1	4.A.1.2	1	4.A.1.2	1	4.A.1.2
45	2	4.A.2.1	2	4.A.2.1	2	4.A.2.1	2	4.A.2.1	2	4.A.2.1	2	4.A.2.1	2	4.A.2.1

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 4

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
46	2	4.N.3.1	2	4.N.3.1	2	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	2	4.N.3.1
47	2	4.A.4.1	2	4.A.4.1	2	4.M.1.2	2	4.M.1.2	1	4.A.4.1	2	4.A.4.1	2	4.A.4.1
48	2	4.A.4.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	2	4.N.2.2
49	1	4.A.2.1	1	4.A.2.1	1	4.A.2.1	2	4.A.2.1	1	4.A.2.1	1	4.N.3.1	1	4.A.2.1
50	2	4.N.3	2	4.N.2.1	2	4.A.3.1	2	4.A.3.1	2	4.N.2.1	2	4.N.2	2	4.N.2.1
51	2	4.S.2.1	2	4.S.2.1	2	4.S.2.1	1	4.S.2.1	2	4.S.2.1	1	4.S.2.1	2	4.S.2.1
52	2	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1
53	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1
54	2	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	1	4.S.2.1	2	4.S.2.1
55	1	4.N.1.1	1	4.A.2.1	1	4.N.1.1	1	4.N.1.1	1	4.N.1.1	1	4.A.2.1	1	4.A.2.1
56	2	4.N.3.1	2	4.N.3.1	2	4.N.3.1	2	4.N.3.1	2	4.N.3.1	1	4.N.3.1	2	4.N.3.1
57	2	4.G.2.1	2	4.G.2.1	2	4.G.2.1	2	4.G.2.1	2	4.G.2.1	2	4.G.2.1	2	4.G.2.1
58	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.3.1	1	4.N.2.1	2	4.A.4.1
59	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2	1	4.M.1.2
60	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.2	1	4.G.1.1	1	4.G.1.2
61	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1	1	4.A.1.1
62	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1	1	4.G.1.1
63	2	4.A.3.1	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	2	4.A.3.1
64	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2	1	4.S.1.2
65	1	4.A.2.2	2	4.A.2.2	2	4.A.2.2	2	4.A.2.2	2	4.A.1.1	2	4.A.1.1	2	4.A.2.2
66	1	4.N.3.1	1	4.N.3.1	2	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	2	4.N.3.1
67	1	4.M.1.2	1	4.N.2.2	1	4.M.1.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2	1	4.N.2.2
68	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.4	1	4.M.1.1	1	4.M.1.4	1	4.M.1.4
69	1	4.A.3.1	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	2	4.A.3.1
70	1	4.G.1	1	4.G.1	1	4.G.1	1	4.G.1	2	4.G.1	1	4.G.1	1	4.G.1
71	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1	2	4.A.4.1
72	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1	1	4.N.2.1
73	1	4.A.1.3	2	4.A.3.1	2	4.A.3.1	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	2	4.A.3.1
74	1	4.M.1.1	1	4.M.1.1	1	4.M.1.1	1	4.M.1.1	1	4.M.1.1	1	4.M.1.1	1	4.M.1.1
75	2	4.A.3.1	2	4.A.2.2	1	4.A.3.1	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	2	4.A.3.1
76	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2
77	1	4.S.2.1	2	4.S.2.1	1	4.S.2.1	1	4.S.2.1	2	4.S.2.1	1	4.S.2.1	2	4.S.2.1
78	2	4.G.1.1	2	4.G.1.1	2	4.G.2.1	2	4.G.1.1	1	4.G.1.1	2	4.G.1	2	4.G.1.1
79	1	4.N.1.2	1	4.N.1.2	1	4.N.1.2	1	4.N.1.2	1	4.N.1.2	1	4.N.2.1	1	4.N.1.2
80	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1	1	4.N.3.1
83	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1	1	4.A.4.1
84	2	4.A.3.1	2	4.A.3.1	2	4.A.3.1	2	4.A.3.1	1	4.A.2.2	2	4.A.3.1	2	4.A.3.1
85	1	4.A.2.2	2	4.A.2.2	1	4.A.2.2	1	4.A.1.1	1	4.A.2.2	1	4.A.2.2	2	4.A.2.2
86	2	4.G.2.2	1	4.G.2.2	2	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.A.2.2	1	4.G.2.2

Table 4.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 4

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
87	1	4.A.2.2	2	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2	1	4.A.2.2
88	2	4.S.2.1	2	4.S.2.1	2	4.S.2.1	1	4.S.2.1	2	4.S.2.1	1	4.S.2.1	1	4.S.2.1
89	1	4.S.1	1	4.S.1	1	4.S.1	1	4.S.1	2	4.S.1	1	4.S.1	1	4.S.1
90	2	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1	1	4.A.3.1
91	2	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2	1	4.G.2.2
92	1	4.A.1.3	1	4.N.1.1	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3	1	4.A.1.3

Objective Pairwise Comparison: 0.8736
Standard Pairwise Comparison: 0.949

Table 4.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 4

Low		Medium		High
0		6.391304		7

1 3427083	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2
2 3529690	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1
3 2177083	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1
4 3328672	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2
5 3541264	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.3
6 2177070	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3
7 2177092	4.S.1.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
8 3328681	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3
9 3531518	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1
10 3328671	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2
11 2177004	4.M.1.3	4.M.1.3	4.M.1.3	4.M.1.3	4.M.1.3	4.M.1.3	4.M.1.3
12 2177007	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1
16 2177048	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2
17 2177053	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4
18 2177073	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1
19 2105473	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1
20 2105474	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1
21 2177050	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2
22 3530256	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2
23 3344670	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1
24 2177080	4.A.4.1	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2
25 2177065	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1
26 3532346	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
27 2177084	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.N.2.1
28 2345758	4.G.2.1	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2
29 3530250	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3	4.N.1.3
30 3530253	4.N.1.2	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1
31 3532338	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.1	4.S.1.2
32 3531517	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1
33 3531531	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.2.1
34 3531536	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1
35 3532339	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2
36 3351204	4.A.1.1	4.A.1.3	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
37 3530251	4.M.1.3	4.N.1.4	4.N.1.4	4.N.1.4	4.N.1.4	4.N.1.4	4.N.1.4
38 3530260	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.1	4.N.3
39 3532341	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
43 2177040	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1
44 3328669	4.A.1.2	4.A.1.2	4.A.1.2	4.A.1.2	4.A.1.2	4.A.1.2	4.A.1.2
45 3531523	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1
46 3351152	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1
47 2177074	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.M.1.2	4.M.1.2
48 3530261	4.A.4.1	4.N.2.2	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1

Table 4.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 4

49 3531522	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.A.2.1	4.N.3.1
50 2177023	4.A.3.1	4.A.3.1	4.N.2	4.N.2.1	4.N.2.1	4.N.2.1	4.N.3
51 3532345	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
52 3530252	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1
53 3345354	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1
54 3532342	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
55 3531521	4.A.2.1	4.A.2.1	4.A.2.1	4.N.1.1	4.N.1.1	4.N.1.1	4.N.1.1
56 3345358	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1
57 3536202	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1	4.G.2.1
58 2345754	4.A.3.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.N.2.1
59 2177075	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2	4.M.1.2
60 2177038	4.G.1.1	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2	4.G.1.2
61 3531528	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1	4.A.1.1
62 3536071	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1
63 2177013	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
64 2177087	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2	4.S.1.2
65 3531526	4.A.1.1	4.A.1.1	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2
66 3530258	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1
67 2177066	4.M.1.2	4.M.1.2	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2	4.N.2.2
68 3536523	4.M.1.1	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4	4.M.1.4
69 2177016	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
70 3536484	4.G.1	4.G.1	4.G.1	4.G.1	4.G.1	4.G.1	4.G.1
71 3531529	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1
72 2345755	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1	4.N.2.1
73 2177021	4.A.1.3	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
74 3531537	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1	4.M.1.1
75 2177014	4.A.2.2	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
76 2177001	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2
77 3532344	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
78 2345761	4.G.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.1.1	4.G.2.1
79 3536075	4.N.1.2	4.N.1.2	4.N.1.2	4.N.1.2	4.N.1.2	4.N.1.2	4.N.2.1
80 3530259	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1	4.N.3.1
83 3531530	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1	4.A.4.1
84 2177027	4.A.2.2	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
85 2177028	4.A.1.1	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2
86 3531534	4.A.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2
87 3427084	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2	4.A.2.2
88 3532343	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1	4.S.2.1
89 2177089	4.S.1	4.S.1	4.S.1	4.S.1	4.S.1	4.S.1	4.S.1
90 3531516	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1	4.A.3.1
91 3531535	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2	4.G.2.2
92 3536065	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.A.1.3	4.N.1.1

Table 4.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 4

Low		Medium		High
0		13.67442		48

4.A																				
4.A.1																				
4.A.1.1	9	9	9	9	9	9	9	32	32	32	32	32	32	32	36	61	61	61	61	61
	61	61	65	65	85															
4.A.1.2	44	44	44	44	44	44	44													
4.A.1.3	8	8	8	8	8	8	8	36	73	92	92	92	92	92	92					
4.A.2																				
4.A.2.1	23	23	23	23	23	23	23	45	45	45	45	45	45	45	49	49	49	49	49	49
	55	55	55																	
4.A.2.2	1	1	1	1	1	1	1	65	65	65	65	65	75	84	85	85	85	85	85	85
	86	87	87	87	87	87	87	87												
4.A.3																				
4.A.3.1	36	36	36	36	36	50	50	58	63	63	63	63	63	63	63	69	69	69	69	69
	69	69	73	73	73	73	73	73	75	75	75	75	75	75	84	84	84	84	84	
	84	90	90	90	90	90	90	90												
4.A.4																				
4.A.4.1	3	3	3	3	3	3	3	24	27	27	27	27	27	27	47	47	47	47	47	48
	58	58	58	58	58	71	71	71	71	71	71	71	83	83	83	83	83	83	83	
4.G																				
4.G.1	70	70	70	70	70	70	70	78												
4.G.1.1	33	33	33	33	33	33	53	53	53	53	53	53	53	60	62	62	62	62	62	62
	62	78	78	78	78	78														

Table 4.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 4

4.G.1.2	4	4	4	4	4	4	4	10	10	10	10	10	10	10	60	60	60	60	60	60
4.G.2																				
4.G.2.1	28	33	43	43	43	43	43	43	43	57	57	57	57	57	57	57	78			
4.G.2.2	28	28	28	28	28	28	76	76	76	76	76	76	76	86	86	86	86	86	86	91
	91	91	91	91	91	91														
4.M																				
4.M.1																				
4.M.1.1	34	34	34	34	34	34	34	68	74	74	74	74	74	74	74					
4.M.1.2	16	16	16	16	16	16	16	21	21	21	21	21	21	21	24	24	24	24	24	24
	47	47	59	59	59	59	59	59	59	67	67									
4.M.1.3	11	11	11	11	11	11	11	37												
4.M.1.4	17	17	17	17	17	17	17	68	68	68	68	68	68							
4.N																				
4.N.1	5	5	5	5	5	5	12	12	12	12	12	12	12	38	38	38	38	38	38	
4.N.1.1	2	2	2	2	2	2	2	18	18	18	18	18	18	18	55	55	55	55	92	
4.N.1.2	30	79	79	79	79	79	79													
4.N.1.3	6	6	6	6	6	6	6	29	29	29	29	29	29	29						
4.N.1.4	37	37	37	37	37	37														
4.N.2	50																			
4.N.2.1	25	25	25	25	25	25	25	27	30	30	30	30	30	30	50	50	50	52	52	52
	52	52	52	52	58	72	72	72	72	72	72	72	79							
4.N.2.2	22	22	22	22	22	22	22	48	67	67	67	67	67							
4.N.3	5	38	50																	
4.N.3.	4	4	4	4	4	4	4	4	4	4	4	4	4	5	5	5	5	5	5	5

Table 4.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 4

1	6	6	6	6	6	6	6	8	8	8	8	8	9	6	6	6	6	6	6	6
	66	66	66	66	66	66	66	80	80	80	80	80	80	80						
4.S																				
4.S.1	89	89	89	89	89	89	89													
4.S.1.1	7	19	19	19	19	19	19	19	20	20	20	20	20	20	20	31	31	31	31	31
	31																			
4.S.1.2	31	35	35	35	35	35	35	35	64	64	64	64	64	64	64					
4.S.2																				
4.S.2.1	7	7	7	7	7	7	26	26	26	26	26	26	26	39	39	39	39	39	39	39
	51	51	51	51	51	51	51	54	54	54	54	54	54	54	77	77	77	77	77	
	77	77	88	88	88	88	88	88	88											

Table 4.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 4

Low		Medium		High
1		3		7

4.A									
4.A.1									
4.A.1.1	9:7	32:7	36:1	61:7	65:2	85:1			
4.A.1.2	44:7								
4.A.1.3	8:7	36:1	73:1	92:6					
4.A.2									
4.A.2.1	23:7	45:7	49:6	55:3					
4.A.2.2	1:7	65:5	75:1	84:1	85:6	86:1	87:7		
4.A.3									
4.A.3.1	36:5	50:2	58:1	63:7	69:7	73:6	75:6	84:6	90:7
4.A.4									
4.A.4.1	3:7	24:1	27:6	47:5	48:1	58:5	71:7	83:7	
4.G									
4.G.1	70:7	78:1							
4.G.1.1	33:6	53:7	60:1	62:7	78:5				
4.G.1.2	4:7	10:7	60:6						
4.G.2									
4.G.2.1	28:1	33:1	43:7	57:7	78:1				
4.G.2.2	28:6	76:7	86:6	91:7					
4.M									
4.M.1									
4.M.1.1	34:7	68:1	74:7						
4.M.1.2	16:7	21:7	24:6	47:2	59:7	67:2			
4.M.1.3	11:7	37:1							
4.M.1.4	17:7	68:6							
4.N									
4.N.1	5:6	12:7	38:6						
4.N.1.1	2:7	18:7	55:4	92:1					
4.N.1.2	30:1	79:6							
4.N.1.3	6:7	29:7							
4.N.1.4	37:6								
4.N.2	50:1								
4.N.2.1	25:7	27:1	30:6	50:3	52:7	58:1	72:7	79:1	
4.N.2.2	22:7	48:1	67:5						
4.N.3	5:1	38:1	50:1						
4.N.3.1	46:7	48:5	49:1	56:7	66:7	80:7			
4.S									
4.S.1	89:7								
4.S.1.1	7:1	19:7	20:7	31:6					
4.S.1.2	31:1	35:7	64:7						
4.S.2									
4.S.2.1	7:6	26:7	39:7	51:7	54:7	77:7	88:7		

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 4

Low		Medium		High
1		3		7

1 3427083	4.A.2.2:7		
2 3529690	4.N.1.1:7		
3 2177083	4.A.4.1:7		
4 3328672	4.G.1.2:7		
5 3541264	4.N.1:6	4.N.3:1	
6 2177070	4.N.1.3:7		
7 2177092	4.S.1.1:1	4.S.2.1:6	
8 3328681	4.A.1.3:7		
9 3531518	4.A.1.1:7		
10 3328671	4.G.1.2:7		
11 2177004	4.M.1.3:7		
12 2177007	4.N.1:7		
16 2177048	4.M.1.2:7		
17 2177053	4.M.1.4:7		
18 2177073	4.N.1.1:7		
19 2105473	4.S.1.1:7		
20 2105474	4.S.1.1:7		
21 2177050	4.M.1.2:7		
22 3530256	4.N.2.2:7		
23 3344670	4.A.2.1:7		
24 2177080	4.A.4.1:1	4.M.1.2:6	
25 2177065	4.N.2.1:7		
26 3532346	4.S.2.1:7		
27 2177084	4.A.4.1:6	4.N.2.1:1	
28 2345758	4.G.2.1:1	4.G.2.2:6	
29 3530250	4.N.1.3:7		
30 3530253	4.N.1.2:1	4.N.2.1:6	
31 3532338	4.S.1.1:6	4.S.1.2:1	
32 3531517	4.A.1.1:7		
33 3531531	4.G.1.1:6	4.G.2.1:1	
34 3531536	4.M.1.1:7		
35 3532339	4.S.1.2:7		
36 3351204	4.A.1.1:1	4.A.1.3:1	4.A.3.1:5
37 3530251	4.M.1.3:1	4.N.1.4:6	
38 3530260	4.N.1:6	4.N.3:1	
39 3532341	4.S.2.1:7		
43 2177040	4.G.2.1:7		
44 3328669	4.A.1.2:7		
45 3531523	4.A.2.1:7		
46 3351152	4.N.3.1:7		
47 2177074	4.A.4.1:5	4.M.1.2:2	
48 3530261	4.A.4.1:1	4.N.2.2:1	4.N.3.1:5

Table 4.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 4

49 3531522	4.A.2.1:6	4.N.3.1:1		
50 2177023	4.A.3.1:2	4.N.2:1	4.N.2.1:3	4.N.3:1
51 3532345	4.S.2.1:7			
52 3530252	4.N.2.1:7			
53 3345354	4.G.1.1:7			
54 3532342	4.S.2.1:7			
55 3531521	4.A.2.1:3	4.N.1.1:4		
56 3345358	4.N.3.1:7			
57 3536202	4.G.2.1:7			
58 2345754	4.A.3.1:1	4.A.4.1:5	4.N.2.1:1	
59 2177075	4.M.1.2:7			
60 2177038	4.G.1.1:1	4.G.1.2:6		
61 3531528	4.A.1.1:7			
62 3536071	4.G.1.1:7			
63 2177013	4.A.3.1:7			
64 2177087	4.S.1.2:7			
65 3531526	4.A.1.1:2	4.A.2.2:5		
66 3530258	4.N.3.1:7			
67 2177066	4.M.1.2:2	4.N.2.2:5		
68 3536523	4.M.1.1:1	4.M.1.4:6		
69 2177016	4.A.3.1:7			
70 3536484	4.G.1:7			
71 3531529	4.A.4.1:7			
72 2345755	4.N.2.1:7			
73 2177021	4.A.1.3:1	4.A.3.1:6		
74 3531537	4.M.1.1:7			
75 2177014	4.A.2.2:1	4.A.3.1:6		
76 2177001	4.G.2.2:7			
77 3532344	4.S.2.1:7			
78 2345761	4.G.1:1	4.G.1.1:5	4.G.2.1:1	
79 3536075	4.N.1.2:6	4.N.2.1:1		
80 3530259	4.N.3.1:7			
83 3531530	4.A.4.1:7			
84 2177027	4.A.2.2:1	4.A.3.1:6		
85 2177028	4.A.1.1:1	4.A.2.2:6		
86 3531534	4.A.2.2:1	4.G.2.2:6		
87 3427084	4.A.2.2:7			
88 3532343	4.S.2.1:7			
89 2177089	4.S.1:7			
90 3531516	4.A.3.1:7			
91 3531535	4.G.2.2:7			
92 3536065	4.A.1.3:6	4.N.1.1:1		

Table 4.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 4

Low DOK		Matched DOK		High DOK
1		3		7

4.A [1]:									
4.A.1 [1]:									
4.A.1.1 [1]:	9:7[1.29]	32:7 [1]	36:1 [1]	61:7 [1]	65:2 [2]	85:1 [1]			
4.A.1.2 [1]:	44:7 [1]								
4.A.1.3 [1]:	8:7[1]	36:1 [1]	73:1 [1]	92:6 [1]					
4.A.2 [1]:									
4.A.2.1 [1]:	23:7 [1]	45:7 [2]	49:6 [1.17]	55:3 [1]					
4.A.2.2 [1]:	1:7[1]	65:5 [1.8]	75:1 [2]	84:1 [1]	85:6 [1.33]	86:1 [1]	87:7 [1.14]		
4.A.3 [2]:									
4.A.3.1 [2]:	36:5 [1.2]	50:2 [2]	58:1 [1]	63:7 [1.43]	69:7 [1.29]	73:6 [1.67]	75:6 [1.5]	84:6 [2]	90:7 [1.14]
4.A.4 [2]:									
4.A.4.1 [2]:	3:7[2]	24:1 [2]	27:6 [1.5]	47:5 [1.8]	48:1 [2]	58:5 [1.2]	71:7 [2]	83:7 [1]	
4.G [1]:									
4.G.1	70:7 [1.1	78:1 [2]							

Table 4.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 4

[1]:	4]					
4.G.1.1 [1]:	33:6 [1.33]	53:7 [1]	60:1 [1]	62:7 [1]	78:5 [1.8]	
4.G.1.2 [1]:	4:7[1]	10:7 [1]	60:6 [1]			
4.G.2 [2]:						
4.G.2.1 [2]:	28:1 [1]	33:1 [2]	43:7 [1.14]	57:7 [2]	78:1 [2]	
4.G.2.2 [1]:	28:6 [1]	76:7 [1]	86:6 [1.33]	91:7 [1.14]		
4.M [2]:						
4.M.1 [2]:						
4.M.1.1 [1]:	34:7 [1.71]	68:1 [1]	74:7 [1]			
4.M.1.2 [2]:	16:7 [1.29]	21:7 [1.71]	24:6 [1.83]	47:2 [2]	59:7 [1]	67:2 [1]
4.M.1.3 [2]:	11:7 [1.29]	37:1 [1]				
4.M.1.4 [1]:	17:7 [1]	68:6 [1]				
4.N [1]:						
4.N.1 [1]:	5:6[1]	12:7 [1]	38:6 [1]			
4.N.1.1 [1]:	2:7[1]	18:7 [1]	55:4 [1]	92:1 [1]		
4.N.1.2 [1]:	30:1 [1]	79:6 [1]				

Table 4.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 4

4.N.1.3 [2]:	6:7[1.71]	29:7 [1.43]						
4.N.1.4 [1]:	37:6 [1]							
4.N.2 [1]:	50:1 [2]							
4.N.2.1 [1]:	25:7 [1]	27:1 [2]	30:6 [1]	50:3 [2]	52:7 [1.14]	58:1 [1]	72:7 [1]	79:1 [1]
4.N.2.2 [1]:	22:7 [1]	48:1 [2]	67:5 [1]					
4.N.3 [2]:	5:1[1]	38:1 [1]	50:1 [2]					
4.N.3.1 [2]:	46:7 [1.57]	48:5 [1]	49:1 [1]	56:7 [1.86]	66:7 [1.29]	80:7 [1]		
4.S [2]:								
4.S.1 [3]:	89:7 [1.14]							
4.S.1.1 [3]:	7:1[2]	19:7 [1.86]	20:7 [1.71]	31:6 [1.67]				
4.S.1.2 [1]:	31:1 [2]	35:7 [1.14]	64:7 [1]					
4.S.2 [2]:								
4.S.2.1 [2]:	7:6[1]	26:7 [1.14]	39:7 [1.57]	51:7 [1.71]	54:7 [1.29]	77:7 [1.43]	88:7 [1.57]	

Table 5.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 5
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
5.A - ALGEBRA	4	6.86	1 2	2 4	33 66	24.14	0.64	YES
5.G - GEOMETRY	2	5	1	5	100	14	0	YES
5.M - MEASUREMENT	1	4	1 2	3 1	75 25	12.86	0.83	YES
5.N - NUMBER SENSE	3	11	1 2	7 2	77 22	20.71	1.16	YES
5.S - STATISTICS AND PROBABILITY	2	5	1 2 4	1 2 1	25 50 25	12.29	0.88	YES
Total	12	31.86	1 2 4	18 9 1	64 32 3	84	0	

Table 5.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 5

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
5.A - ALGEBRA	4	6.86	24.14	0.64	24	130	67	33	9	33	YES
5.G - GEOMETRY	2	5	14	0	0	0	76	28	24	28	YES
5.M - MEASUREMENT	1	4	12.86	0.83	40	248	37	35	23	44	YES
5.N - NUMBER SENSE	3	11	20.71	1.16	3	32	83	27	15	27	YES
5.S - STATISTICS AND PROBABILITY	2	5	12.29	0.88	57	244	37	48	6	22	WEAK
Total	12	31.86	84	0	14	30	66	38	20	33	

Table 5.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 5
Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
5.A - ALGEBRA	4	6.86	24.14	0.64	6.86	0.35	100	0	YES	29	1	0.79	0.03	YES
5.G - GEOMETRY	2	5	14	0	4	0	80	0	YES	17	0	0.93	0	YES
5.M - MEASUREMENT	1	4	12.86	0.83	4	0	100	0	YES	15	1	0.65	0.01	WEAK
5.N - NUMBER SENSE	3	11	20.71	1.16	8.14	0.35	74	3	YES	25	1	0.74	0.03	YES
5.S - STATISTICS AND PROBABILITY	2	5	12.29	0.88	5	0.53	100	0	YES	15	1	0.67	0.04	WEAK
Total	12	31.86	84	0	5.6	1.68	91	12		20	6	0.76	0.10	

Table 5.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 5
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5.A - ALGEBRA	YES	YES	YES	YES
5.G - GEOMETRY	YES	YES	YES	YES
5.M - MEASUREMENT	YES	YES	YES	WEAK
5.N - NUMBER SENSE	YES	YES	YES	YES
5.S - STATISTICS AND PROBABILITY	YES	WEAK	YES	WEAK

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	2	1	2	2	2	2	2
3	1	1	1	1	1	1	1
4	2	2	2	2	2	2	2
5	2	2	2	2	2	2	2
6	1	1	1	1	1	1	1
7	2	2	2	2	2	2	2
8	2	1	2	2	1	2	1
9	2	1	1	1	2	1	1
10	2	2	2	2	2	2	2
11	2	1	1	2	1	2	1
12	1	1	1	1	1	1	1
16	2	2	2	2	2	2	2
17	1	1	1	2	1	2	1
18	3	3	3	3	3	2	3
19	2	2	2	2	2	2	2
20	2	2	2	2	1	2	2
21	1	1	1	1	1	1	1
22	2	2	2	2	2	2	2
23	1	1	1	2	1	1	1
24	2	2	2	2	1	1	2
25	1	1	1	2	1	1	1
26	1	2	1	2	2	2	2
27	1	1	1	2	2	2	2
28	1	1	1	2	1	1	1
29	2	2	2	2	2	2	2
30	1	1	1	1	1	1	1
31	2	1	1	1	2	2	1
32	1	1	1	1	1	1	1
33	2	2	2	2	2	2	2
34	2	1	1	1	1	1	1
35	1	1	1	1	1	1	1
36	1	1	1	1	1	1	1
37	1	2	1	1	1	1	1
38	1	1	1	1	1	1	1
39	1	1	1	1	1	1	1
43	2	2	2	2	1	2	2
44	2	1	2	2	2	2	2
45	2	2	3	2	2	2	2
46	2	2	2	2	2	2	2
47	1	2	1	1	1	2	1
48	1	1	2	2	1	2	1
49	1	1	1	1	1	1	1
50	2	2	2	2	2	2	2
51	2	2	1	1	1	1	1

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	2	2	2	2	2	1	2
53	2	2	2	2	2	2	2
54	1	1	1	1	1	2	1
55	1	1	1	1	1	1	1
56	2	1	1	1	1	1	1
57	2	2	2	2	2	2	2
58	2	1	2	2	2	2	2
59	1	1	1	1	1	1	1
60	2	2	1	2	2	1	1
61	1	1	1	1	2	1	1
62	2	1	1	1	1	1	1
63	2	2	2	2	2	2	2
64	2	2	2	2	2	2	2
65	1	1	1	1	2	1	1
66	1	1	1	1	1	1	1
67	2	2	2	2	1	1	2
68	1	1	1	1	1	1	1
69	1	1	1	1	1	1	1
70	2	2	2	2	2	2	2
71	2	2	2	2	2	2	2
72	1	2	1	2	1	2	1
73	2	2	2	2	2	2	1
74	1	1	1	1	1	1	1
75	1	1	1	1	1	1	1
76	2	2	2	2	2	2	2
77	2	2	2	2	2	2	2
78	2	1	1	2	1	1	1
79	2	2	2	2	2	2	2
80	2	1	1	1	1	1	1
83	2	2	1	2	2	1	1
84	1	2	1	1	1	1	1
85	1	1	1	1	1	1	1
86	2	2	1	2	2	2	1
87	1	1	2	2	1	2	2
88	2	2	2	2	2	2	2
89	2	2	2	2	2	2	2
90	2	2	2	2	2	2	2
91	1	1	1	1	1	1	1
92	2	2	1	1	1	1	1

Intraclass Correlation: 0.9323
Pairwise Comparison: 0.8107

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.1	1	5.N.2	1	5.N.1
2	2	5.A.3.2	1	5.A.3.2	2	5.A.3.2	2	5.A.3.2	2	5.A.3.2	2	5.A.3.2	2	5.A.3.2
3	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1
4	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1
5	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1
6	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1
7	2	5.G.2.3	2	5.G.2.3	2	5.G.2.3	2	5.G.2.3	2	5.G.2.3	2	5.G.2.3	2	5.G.2.3
8	2	5.M.1.2	1	5.M.1.2	2	5.M.1.2	2	5.M.1.2	1	5.M.1.2	2	5.M.1.2	1	5.M.1.2
9	2	5.G.2.1	1	5.G.2.1	1	5.G.2.1	1	5.G.2.1	2	5.G.2.1	1	5.G.2.1	1	5.G.2.1
10	2	5.N.1.1	2	5.N.1.1	2	5.N.1.1	2	5.N.1.1	2	5.N.1.1	2	5.N.1.1	2	5.N.1.1
11	2	5.N.1.4	1	5.N.1.4	1	5.N.1.4	2	5.N.1.4	1	5.N.1.4	2	5.N.1.4	1	5.N.1.4
12	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2
16	2	5.A.2.1	2	5.N.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.1.1	2	5.A.2.1	2	5.A.2.1
17	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4	2	5.M.1.4	1	5.M.1.4	2	5.M.1.4	1	5.M.1.4
18	3	5.N.3.1	3	5.N.3.1	3	5.N.3.1	3	5.N.3.1	3	5.N.3.1	2	5.N.3.1	3	5.N.3.1
19	2	5.M.1.1	2	5.M.1.1	2	5.M.1.1	2	5.M.1.1	2	5.M.1.1	2	5.M.1.1	2	5.M.1.1
20	2	5.M.1.2	2	5.M.1.2	2	5.M.1.2	2	5.M.1.2	1	5.M.1.2	2	5.M.1.2	2	5.M.1.2
21	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2	1	5.N.2.2
22	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1
23	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	2	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2
24	2	5.A.2.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	1	5.A.3.1	1	5.A.3.1	2	5.A.3.1
25	1	5.N.1.1	1	5.N.1.1	1	5.N.1.1	2	5.N.1.1	1	5.N.1.1	1	5.N.1.1	1	5.N.1.1
26	1	5.S.1.1	2	5.S.1.1	1	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1
27	1	5.A.4.1	1	5.A.4.1	1	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1
28	1	5.S.1.1	1	5.S.1.1	1	5.S.1.1	2	5.S.1	1	5.S.1.1	1	5.N.1.1	1	5.S.1.1
29	2	5.N.1.3	2	5.N.1.3	2	5.N.1.3	2	5.N.1.3	2	5.N.1.3	2	5.N.1.3	2	5.N.1.3
30	1	5.N.1	1	5.N.1	1	5.N.1	1	5.N.1	1	5.N.1	1	5.N.1	1	5.N.1
31	2	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1	2	5.A.1.1	2	5.A.1.2	1	5.A.1.1
32	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2
33	2	5.A.3.1	2	5.A.4.1	2	5.A.4.1	2	5.A.3.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1
34	2	5.N.1.4	1	5.N.1.4	1	5.N.1.4	1	5.N.1.4	1	5.N.1.4	1	5.N.1.4	1	5.N.1.4
35	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3
36	1	5.A.2.1	1	5.A.2.1	1	5.A.2.1	1	5.A.2.1	1	5.A.2.1	1	5.A.2.1	1	5.A.2.1
37	1	5.S.2	2	5.S.2	1	5.S.2	1	5.S.2	1	5.S.2.2	1	5.S.2	1	5.S.2
38	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.N.2.1	1	5.M.1.2	1	5.N.2.1	1	5.M.1.2
39	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4	1	5.M.1.4
43	2	5.M.1.2	2	5.M.1.2	2	5.M.1.2	2	5.M.1.2	1	5.M.1.2	2	5.M.1.2	2	5.S.1.1
44	2	5.N.3.1	1	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1
45	2	5.S.1.2	2	5.S.1.2	3	5.S.1.2	2	5.S.1.2	2	5.S.1.2	2	5.S.1.2	2	5.S.1.2

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
46	2	5.A.1.1	2	5.A.1.1	2	5.A.1.1	2	5.A.1.1	2	5.A.1.1	2	5.A.1.1	2	5.A.1.1
47	1	5.G.1.1	2	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.2	2	5.G.1.1	1	5.G.1.1
48	1	5.N.3.1	1	5.N.3.1	2	5.N.3.1	2	5.N.3.1	1	5.A.3.1	2	5.N.3.1	1	5.N.3.1
49	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2
50	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1
51	2	5.S.2.1	2	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1
52	2	5.A.1.2	2	5.A.1.2	2	5.A.1.2	2	5.A.1.2	2	5.A.1.2	1	5.A.1.2	2	5.A.1.2
53	2	5.S.2.2	2	5.S.2.2	2	5.S.2.2	2	5.S.2.2	2	5.S.2.2	2	5.S.2.2	2	5.S.2.2
54	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	1	5.A.1.2	2	5.A.1.2	1	5.A.1.2
55	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1
56	2	5.N.3.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.N.2.1
57	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1
58	2	5.A.3.1	1	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1
59	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3
60	2	5.G.2.1	2	5.G.2.1	1	5.G.2.1	2	5.G.2.1	2	5.G.2.1	1	5.G.2.1	1	5.G.2.1
61	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	2	5.M.1.2	1	5.M.1.2	1	5.M.1.2
62	2	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1
63	2	5.A.3.2	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.A.3.2	2	5.N.3.1
64	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1
65	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	2	5.G.1.1	1	5.G.1.1	1	5.G.1.1
66	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2
67	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	1	5.A.2.1	1	5.A.2.1	2	5.A.2.1
68	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.2	1	5.N.2
69	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2
70	2	5.G.2.1	2	5.G.2.1	2	5.G.2.1	2	5.G.2.1	2	5.G.2.1	2	5.G.2.1	2	5.G.2.1
71	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1	2	5.A.4.1
72	1	5.M.1.3	2	5.M.1.3	1	5.M.1.3	2	5.M.1.3	1	5.M.1.3	2	5.M.1.3	1	5.M.1.3
73	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	2	5.S.1.1	1	5.S.1.1
74	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2	1	5.M.1.2
75	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2	1	5.G.1.2
76	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1	2	5.A.3.1
77	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1
78	2	5.A.1.1	1	5.A.1.1	1	5.A.1.1	2	5.A.1.1	1	5.A.1.1	1	5.A.1.1	1	5.A.1.1
79	2	5.M.1.4	2	5.M.1.4	2	5.M.1.4	2	5.M.1.4	2	5.M.1.4	2	5.M.1.4	2	5.M.1.4
80	2	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3	1	5.G.2.3
83	2	5.A.1.1	2	5.A.1.1	1	5.A.1.1	2	5.A.1.1	2	5.A.1.1	1	5.A.1.1	1	5.A.1.1
84	1	5.N.2.1	2	5.N.2.1	1	5.N.2.1	1	5.N.2.1	1	5.S.2.1	1	5.N.2.1	1	5.N.2.1
85	1	5.A.1.2	1	5.A.1.2	1	5.A.2.1	1	5.A.1.2	1	5.S.2.1	1	5.A.1.2	1	5.A.1.2
86	2	5.A.2.1	2	5.A.2.1	1	5.A.2.1	2	5.A.2.1	2	5.A.2.1	2	5.A.2.1	1	5.A.2.1

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
87	1	5.A.4.1	1	5.A.4.1	2	5.A.4.1	2	5.A.4.1	1	5.A.4.1	2	5.A.4.1	2	5.A.4.1
88	2	5.M.1.4	2	5.M.1.4	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1
89	2	5.A.4	2	5.A.4	2	5.A.4	2	5.A.4	2	5.A.4	2	5.A.4.1	2	5.A.4
90	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.3.1	2	5.N.2.3	2	5.N.3.1	2	5.N.3.1
91	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1	1	5.G.1.1
92	2	5.S.2.1	2	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2.1	1	5.S.2	1	5.S.2.1

Objective Pairwise Comparison: 0.9155
Standard Pairwise Comparison: 0.9626

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 5

Low		Medium		High
0		6.391304		7

1 3528669	5.N.1	5.N.1	5.N.2	5.N.2	5.N.2	5.N.2	5.N.2
2 3351216	5.A.3.2	5.A.3.2	5.A.3.2	5.A.3.2	5.A.3.2	5.A.3.2	5.A.3.2
3 2177124	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1
4 2345787	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
5 3351215	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1
6 2177195	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1
7 3328673	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3
8 2177138	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
9 2345771	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1
10 2177166	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1
11 3529465	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4
12 3328817	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2
16 3344789	5.A.1.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.N.2.1
17 2345776	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4
18 2177191	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
19 3529472	5.M.1.1	5.M.1.1	5.M.1.1	5.M.1.1	5.M.1.1	5.M.1.1	5.M.1.1
20 2177161	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
21 3529469	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2	5.N.2.2
22 2177188	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
23 2177142	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
24 2345770	5.A.2.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1
25 2177165	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1	5.N.1.1
26 3529474	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
27 3328812	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1
28 2345765	5.N.1.1	5.S.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
29 2177151	5.N.1.3	5.N.1.3	5.N.1.3	5.N.1.3	5.N.1.3	5.N.1.3	5.N.1.3
30 3529470	5.N.1	5.N.1	5.N.1	5.N.1	5.N.1	5.N.1	5.N.1
31 3344792	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.2
32 2345773	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2
33 3351219	5.A.3.1	5.A.3.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1
34 3529464	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4	5.N.1.4
35 2177134	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3
36 2177121	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1
37 3529477	5.S.2	5.S.2	5.S.2	5.S.2	5.S.2	5.S.2	5.S.2.2
38 2177171	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.N.2.1	5.N.2.1
39 3547120	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4
43 3528677	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.S.1.1
44 3351227	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
45 3529476	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2
46 3351209	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1
47 3351222	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.2
48 2345767	5.A.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 5

49 2177112	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2
50 3529473	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
51 2177194	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1
52 3351211	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2
53 3529480	5.S.2.2	5.S.2.2	5.S.2.2	5.S.2.2	5.S.2.2	5.S.2.2	5.S.2.2
54 3528668	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2
55 3529468	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1
56 3328587	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.3.1
57 2177185	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
58 2177101	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1
59 3528684	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3
60 3328583	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1
61 3528686	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
62 3344797	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1
63 2177137	5.A.3.2	5.A.3.2	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
64 3529479	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
65 3351224	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1
66 2345779	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
67 3344798	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1
68 3528671	5.N.2	5.N.2	5.N.2	5.N.2	5.N.2	5.N.2	5.N.2
69 3328582	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2
70 2177136	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1	5.G.2.1
71 3351217	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1
72 2177146	5.M.1.3	5.M.1.3	5.M.1.3	5.M.1.3	5.M.1.3	5.M.1.3	5.M.1.3
73 2177115	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
74 2345780	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2	5.M.1.2
75 3328581	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2	5.G.1.2
76 2345774	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1	5.A.3.1
77 2177181	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1
78 3344800	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1
79 2345775	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4	5.M.1.4
80 3328674	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3	5.G.2.3
83 3351207	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1	5.A.1.1
84 3529467	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.N.2.1	5.S.2.1
85 3328811	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.1.2	5.A.2.1	5.S.2.1
86 3351213	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1	5.A.2.1
87 3345114	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1	5.A.4.1
88 3344787	5.M.1.4	5.M.1.4	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
89 2177182	5.A.4	5.A.4	5.A.4	5.A.4	5.A.4	5.A.4	5.A.4.1
90 3328819	5.N.2.3	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1	5.N.3.1
91 3351225	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1	5.G.1.1
92 2177190	5.S.2	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 5

Low		Medium		High
0		12.78261		53

5.A																				
5.A.1																				
5.A.1.1	16	31	31	31	31	31	31	46	46	46	46	46	46	46	62	62	62	62	62	62
	62	78	78	78	78	78	78	78	83	83	83	83	83	83	83					
5.A.1.2	31	49	49	49	49	49	49	49	52	52	52	52	52	52	52	54	54	54	54	54
	54	54	85	85	85	85	85													
5.A.2																				
5.A.2.1	5	5	5	5	5	5	5	16	16	16	16	16	24	36	36	36	36	36	36	36
	67	67	67	67	67	67	67	77	77	77	77	77	77	77	85	86	86	86	86	
	86	86	86																	
5.A.3																				
5.A.3.1	24	24	24	24	24	24	33	33	48	58	58	58	58	58	58	58	76	76	76	76
	76	76	76																	
5.A.3.2	2	2	2	2	2	2	2	63	63											
5.A.4	89	89	89	89	89	89														
5.A.4.1	27	27	27	27	27	27	27	33	33	33	33	33	71	71	71	71	71	71	71	87
	87	87	87	87	87	87	89													
5.G																				
5.G.1																				
5.G.1.1	3	3	3	3	3	3	3	47	47	47	47	47	47	65	65	65	65	65	65	65
	91	91	91	91	91	91	91													
5.G.1.2	32	32	32	32	32	32	32	47	69	69	69	69	69	69	69	75	75	75	75	75
	7	7																		

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 5

	5	5																		
5.G.2																				
5.G.2.1	9	9	9	9	9	9	9	60	60	60	60	60	60	60	70	70	70	70	70	70
	70																			
5.G.2.2																				
5.G.2.3	7	7	7	7	7	7	7	35	35	35	35	35	35	35	59	59	59	59	59	59
	59	80	80	80	80	80	80	80												
5.M																				
5.M.1																				
5.M.1.1	19	19	19	19	19	19	19													
5.M.1.2	8	8	8	8	8	8	8	20	20	20	20	20	20	20	23	23	23	23	23	23
	23	38	38	38	38	38	43	43	43	43	43	43	61	61	61	61	61	61	61	
	66	66	66	66	66	66	66	74	74	74	74	74	74	74						
5.M.1.3	72	72	72	72	72	72	72													
5.M.1.4	17	17	17	17	17	17	17	39	39	39	39	39	39	39	79	79	79	79	79	79
	79	88	88																	
5.N																				
5.N.1	1	1	30	30	30	30	30	30	30											
5.N.1.1	10	10	10	10	10	10	10	25	25	25	25	25	25	25	28					
5.N.1.2																				
5.N.1.3	29	29	29	29	29	29	29													
5.N.1.4	11	11	11	11	11	11	11	34	34	34	34	34	34	34						
5.N.1.5																				
5.N.2	1	1	1	1	1	68	68	68	68	68	68	68								
5.N.2.	1	3	3	5	5	5	5	5	5	5	5	5	5	5	5	5	8	8	8	8

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 5

1	6	8	8	5	5	5	5	5	5	5	6	6	6	6	6	6	4	4	4	4
	84	84																		
5.N.2.2	12	12	12	12	12	12	12	21	21	21	21	21	21	21						
5.N.2.3	90																			
5.N.3																				
5.N.3.1	44	44	44	44	44	44	44	18	18	18	18	18	18	18	44	44	44	44	44	44
	44	48	48	48	48	48	48	50	50	50	50	50	50	50	56	63	63	63	63	
	63	88	88	88	88	88	90	90	90	90	90	90								
5.S																				
5.S.1	28																			
5.S.1.1	22	22	22	22	22	22	22	26	26	26	26	26	26	26	28	28	28	28	28	43
	57	57	57	57	57	57	57	64	64	64	64	64	64	64	73	73	73	73	73	
	73	73																		
5.S.1.2	45	45	45	45	45	45	45													
5.S.2	37	37	37	37	37	37	92													
5.S.2.1	66	66	66	66	66	66	66	51	51	51	51	51	51	51	84	85	92	92	92	92
	92	92																		
5.S.2.2	37	53	53	53	53	53	53	53												

Table 5.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 5

Low		Medium		High
1		3		7

5.A									
5.A.1									
5.A.1.1	16:1	31:6	46:7	62:7	78:7	83:7			
5.A.1.2	31:1	49:7	52:7	54:7	85:5				
5.A.2									
5.A.2.1	5:7	16:5	24:1	36:7	67:7	77:7	85:1	86:7	
5.A.3									
5.A.3.1	24:6	33:2	48:1	58:7	76:7				
5.A.3.2	2:7	63:2							
5.A.4	89:6								
5.A.4.1	27:7	33:5	71:7	87:7	89:1				
5.G									
5.G.1									
5.G.1.1	3:7	47:6	65:7	91:7					
5.G.1.2	32:7	47:1	69:7	75:7					
5.G.2									
5.G.2.1	9:7	60:7	70:7						
5.G.2.2									
5.G.2.3	7:7	35:7	59:7	80:7					
5.M									
5.M.1									
5.M.1.1	19:7								
5.M.1.2	8:7	20:7	23:7	38:5	43:6	61:7	66:7	74:7	
5.M.1.3	72:7								
5.M.1.4	17:7	39:7	79:7	88:2					
5.N									
5.N.1	1:2	30:7							
5.N.1.1	10:7	25:7	28:1						
5.N.1.2									
5.N.1.3	29:7								
5.N.1.4	11:7	34:7							
5.N.1.5									
5.N.2	1:5	68:7							
5.N.2.1	16:1	38:2	55:7	56:6	84:6				
5.N.2.2	12:7	21:7							
5.N.2.3	90:1								
5.N.3									
5.N.3.1	4:7	18:7	44:7	48:6	50:7	56:1	63:5	88:5	90:6

Table 5.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 5

5.S							
5.S.1	28:1						
5.S.1.1	22:7	26:7	28:5	43:1	57:7	64:7	73:7
5.S.1.2	45:7						
5.S.2	37:6	92:1					
5.S.2.1	6:7	51:7	84:1	85:1	92:6		
5.S.2.2	37:1	53:7					

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 5

Low		Medium		High
1		3		7

1 3528669	5.N.1:2	5.N.2:5	
2 3351216	5.A.3.2:7		
3 2177124	5.G.1.1:7		
4 2345787	5.N.3.1:7		
5 3351215	5.A.2.1:7		
6 2177195	5.S.2.1:7		
7 3328673	5.G.2.3:7		
8 2177138	5.M.1.2:7		
9 2345771	5.G.2.1:7		
10 2177166	5.N.1.1:7		
11 3529465	5.N.1.4:7		
12 3328817	5.N.2.2:7		
16 3344789	5.A.1.1:1	5.A.2.1:5	5.N.2.1:1
17 2345776	5.M.1.4:7		
18 2177191	5.N.3.1:7		
19 3529472	5.M.1.1:7		
20 2177161	5.M.1.2:7		
21 3529469	5.N.2.2:7		
22 2177188	5.S.1.1:7		
23 2177142	5.M.1.2:7		
24 2345770	5.A.2.1:1	5.A.3.1:6	
25 2177165	5.N.1.1:7		
26 3529474	5.S.1.1:7		
27 3328812	5.A.4.1:7		
28 2345765	5.N.1.1:1	5.S.1:1	5.S.1.1:5
29 2177151	5.N.1.3:7		
30 3529470	5.N.1:7		
31 3344792	5.A.1.1:6	5.A.1.2:1	
32 2345773	5.G.1.2:7		
33 3351219	5.A.3.1:2	5.A.4.1:5	
34 3529464	5.N.1.4:7		
35 2177134	5.G.2.3:7		
36 2177121	5.A.2.1:7		
37 3529477	5.S.2:6	5.S.2.2:1	
38 2177171	5.M.1.2:5	5.N.2.1:2	
39 3547120	5.M.1.4:7		
43 3528677	5.M.1.2:6	5.S.1.1:1	
44 3351227	5.N.3.1:7		
45 3529476	5.S.1.2:7		
46 3351209	5.A.1.1:7		
47 3351222	5.G.1.1:6	5.G.1.2:1	
48 2345767	5.A.3.1:1	5.N.3.1:6	

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 5

49 2177112	5.A.1.2:7		
50 3529473	5.N.3.1:7		
51 2177194	5.S.2.1:7		
52 3351211	5.A.1.2:7		
53 3529480	5.S.2.2:7		
54 3528668	5.A.1.2:7		
55 3529468	5.N.2.1:7		
56 3328587	5.N.2.1:6	5.N.3.1:1	
57 2177185	5.S.1.1:7		
58 2177101	5.A.3.1:7		
59 3528684	5.G.2.3:7		
60 3328583	5.G.2.1:7		
61 3528686	5.M.1.2:7		
62 3344797	5.A.1.1:7		
63 2177137	5.A.3.2:2	5.N.3.1:5	
64 3529479	5.S.1.1:7		
65 3351224	5.G.1.1:7		
66 2345779	5.M.1.2:7		
67 3344798	5.A.2.1:7		
68 3528671	5.N.2:7		
69 3328582	5.G.1.2:7		
70 2177136	5.G.2.1:7		
71 3351217	5.A.4.1:7		
72 2177146	5.M.1.3:7		
73 2177115	5.S.1.1:7		
74 2345780	5.M.1.2:7		
75 3328581	5.G.1.2:7		
76 2345774	5.A.3.1:7		
77 2177181	5.A.2.1:7		
78 3344800	5.A.1.1:7		
79 2345775	5.M.1.4:7		
80 3328674	5.G.2.3:7		
83 3351207	5.A.1.1:7		
84 3529467	5.N.2.1:6	5.S.2.1:1	
85 3328811	5.A.1.2:5	5.A.2.1:1	5.S.2.1:1
86 3351213	5.A.2.1:7		
87 3345114	5.A.4.1:7		
88 3344787	5.M.1.4:2	5.N.3.1:5	
89 2177182	5.A.4:6	5.A.4.1:1	
90 3328819	5.N.2.3:1	5.N.3.1:6	
91 3351225	5.G.1.1:7		
92 2177190	5.S.2:1	5.S.2.1:6	

Table 5.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 5

Low DOK		Matched DOK		High DOK
1		3		7

5.A [2]:								
5.A. 1 [2]:								
5.A. 1.1 [2]:	16:1[2]	31:6[1.33]	46:7[2]	62:7[1.14]	78:7[1.29]	83:7[1.57]		
5.A. 1.2 [1]:	31:1[2]	49:7[1]	52:7[1.86]	54:7[1.14]	85:5[1]			
5.A. 2 [2]:								
5.A. 2.1 [2]:	5:7[2]	16:5[2]	24:1[2]	36:7[1]	67:7[1.71]	77:7[2]	85:1[1]	86:7[1.71]
5.A. 3 [2]:								
5.A. 3.1 [2]:	24:6[1.67]	33:2[2]	48:1[1]	58:7[1.86]	76:7[2]			
5.A. 3.2 [1]:	2:7[1.86]	63:2[2]						
5.A. 4 [2]:	89:6[2]							
5.A. 4.1 [2]:	27:7[1.57]	33:5[2]	71:7[2]	87:7[1.57]	89:1[2]			
5.G [1]:								
5.G. 1 [1]:								
5.G. 1.1 [1]:	3:7[1]	47:6[1.33]	65:7[1.14]	91:7[1]				
5.G. 1.2 [1]:	32:7[1]	47:1[1]	69:7[1]	75:7[1]				
5.G. 2 [1]:								
5.G. 2.1 [1]:	9:7[1.29]	60:7[1.57]	70:7[2]					

Table 5.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 5

5.G.2.2 [1]:								
5.G.2.3 [1]:	7:7[2]	35:7[1]	59:7[1]	80:7[1.14]				
5.M [1]:								
5.M.1 [1]:								
5.M.1.1 [1]:	19:7[2]							
5.M.1.2 [2]:	8:7[1.57]	20:7[1.86]	23:7[1.14]	38:5[1]	43:6[1.83]	61:7[1.14]	66:7[1]	74:7[1]
5.M.1.3 [1]:	72:7[1.43]							
5.M.1.4 [1]:	17:7[1.29]	39:7[1]	79:7[2]	88:2[2]				
5.N [1]:								
5.N.1 [1]:	1:2[1]	30:7[1]						
5.N.1.1 [1]:	10:7[2]	25:7[1.14]	28:1[1]					
5.N.1.2 [1]:								
5.N.1.3 [2]:	29:7[2]							
5.N.1.4 [1]:	11:7[1.43]	34:7[1.14]						
5.N.1.5 [1]:								
5.N.2 [1]:	1:5[1]	68:7[1]						
5.N.2.1 [1]:	16:1[2]	38:2[1]	55:7[1]	56:6[1]	84:6[1.17]			
5.N.2.2	12:7[1]	21:7[1]						

Table 5.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Mathematics 2008 Grade 5

[1]:									
5.N.2.3 [1]:	90:1[2]								
5.N.3 [2]:									
5.N.3.1 [2]:	4:7[2]	18:7[2.86]	44:7[1.86]	48:6[1.5]	50:7[2]	56:1[2]	63:5[2]	88:5[2]	90:6[2]
5.S [2]:									
5.S.1 [4]:	28:1[2]								
5.S.1.1 [4]:	22:7[2]	26:7[1.71]	28:5[1]	43:1[2]	57:7[2]	64:7[2]	73:7[1.86]		
5.S.1.2 [2]:	45:7[2.14]								
5.S.2 [2]:	37:6[1.17]	92:1[1]							
5.S.2.1 [1]:	6:7[1]	51:7[1.29]	84:1[1]	85:1[1]	92:6[1.33]				
5.S.2.2 [2]:	37:1[1]	53:7[2]							

Table 6.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 6
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
6.A - ALGEBRA	4	6	1 2	3 3	50 50	32.14	0.64	YES
6.G - GEOMETRY	2	4	1 2	1 2	33 66	14	0	YES
6.M - MEASUREMENT	1	2	1	2	100	7.14	0.35	YES
6.N - NUMBER SENSE	3	5	1 2	3 1	75 25	16.86	0.64	YES
6.S - STATISTICS AND PROBABILITY	2	4	1 3	2 1	66 33	13.86	0.35	YES
Total	12	21	1 2 3	11 6 1	61 33 5	84	0	

Table 6.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 6

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
6.A - ALGEBRA	4	6	32.14	0.64	32	267	58	30	10	20	YES
6.G - GEOMETRY	2	4	14	0	51	200	43	34	6	19	WEAK
6.M - MEASUREMENT	1	2	7.14	0.35	0	0	58	28	42	28	YES
6.N - NUMBER SENSE	3	5	16.86	0.64	1	17	88	19	11	19	YES
6.S - STATISTICS AND PROBABILITY	2	4	13.86	0.35	34	222	39	46	27	38	YES
Total	12	21	84	0	23	37	61	36	16	27	

Table 6.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 6
Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
6.A - ALGEBRA	4	6	32.14	0.64	6	0	100	0	YES	38	1	0.81	0.02	YES
6.G - GEOMETRY	2	4	14	0	4	0	100	0	YES	17	0	0.76	0.04	YES
6.M - MEASUREMENT	1	2	7.14	0.35	2	0	100	0	YES	9	0	0.94	0.02	YES
6.N - NUMBER SENSE	3	5	16.86	0.64	5	0	100	0	YES	20	1	0.83	0.02	YES
6.S - STATISTICS AND PROBABILITY	2	4	13.86	0.35	4	0	100	0	YES	16	0	0.77	0.04	YES
Total	12	21	84	0	4.2	1.33	100	0		20	10	0.82	0.07	

Table 6.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 6
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
6.A - ALGEBRA	YES	YES	YES	YES
6.G - GEOMETRY	YES	WEAK	YES	YES
6.M - MEASUREMENT	YES	YES	YES	YES
6.N - NUMBER SENSE	YES	YES	YES	YES
6.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 6

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	1	1	1	2	1	1	1
3	1	2	2	2	2	2	1
4	2	2	1	2	2	2	2
5	1	2	1	1	1	1	2
6	1	1	1	2	2	1	1
7	1	2	2	2	2	1	1
8	1	1	1	1	1	1	1
9	1	1	1	1	1	1	2
10	2	2	2	1	2	2	1
11	1	1	1	1	1	1	1
12	1	1	1	1	1	1	1
16	2	2	2	2	2	2	2
17	2	2	2	2	2	1	2
18	2	2	2	2	2	2	2
19	1	1	1	1	1	1	1
20	2	2	2	2	2	2	2
21	1	1	1	1	1	1	1
22	1	2	1	2	1	2	2
23	2	2	2	2	2	3	2
24	2	2	2	2	2	1	2
25	2	2	1	2	1	1	1
26	1	1	1	1	1	1	1
27	2	2	2	1	1	1	1
28	1	2	1	1	1	1	1
29	1	1	1	2	1	1	1
30	1	1	1	1	1	1	1
31	1	2	2	2	1	1	2
32	1	1	1	1	1	1	1
33	2	2	2	2	2	2	2
34	2	2	2	2	2	1	2
35	2	2	2	2	2	2	2
36	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1
38	2	2	2	2	2	1	2
39	2	1	1	2	1	1	1
43	1	1	1	1	1	1	1
44	1	1	1	2	1	1	1
45	1	1	2	2	1	1	1
46	1	1	1	1	1	1	1
47	1	1	1	2	2	1	1
48	2	1	1	2	1	1	1
49	1	2	1	2	1	2	1
50	1	1	1	1	1	1	1
51	2	2	2	2	2	1	2

Table 6.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 6

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	1	1	1	2	1	1	1
53	1	1	1	1	1	1	1
54	2	2	2	2	2	2	2
55	1	1	2	1	1	1	1
56	1	1	1	1	1	1	1
57	2	2	1	2	1	1	1
58	1	1	1	1	1	1	1
59	2	1	2	2	1	1	1
60	1	1	1	1	1	1	1
61	1	1	2	1	1	1	2
62	2	2	2	2	1	2	2
63	2	2	2	2	1	2	1
64	1	1	1	1	1	1	1
65	2	2	1	2	2	1	2
66	1	2	1	2	1	2	1
67	1	1	1	1	1	1	1
68	2	2	1	1	1	2	2
69	2	2	2	2	1	2	1
70	2	2	1	1	2	1	1
71	2	1	1	1	1	1	1
72	1	1	1	1	2	1	1
73	2	2	2	2	1	2	1
74	2	2	1	2	1	2	1
75	1	1	1	1	1	1	1
76	1	1	1	1	1	1	1
77	2	2	2	2	1	2	1
78	2	1	2	1	1	1	1
79	2	1	1	2	1	1	1
80	2	2	2	2	2	2	2
83	2	2	2	2	2	2	2
84	2	1	1	2	2	2	1
85	2	2	2	1	2	2	1
86	1	2	2	2	2	2	2
87	1	1	1	1	2	1	1
88	2	2	1	2	1	1	1
89	1	1	1	1	1	1	1
90	1	1	1	1	1	1	1
91	1	1	1	1	1	1	1
92	2	2	1	1	1	1	1

Intraclass Correlation: 0.8648
Pairwise Comparison: 0.7381

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 6

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	6.G.2	1	6.G.2	1	6.G.2	1	6.G.2	1	6.G.2	1	6.G.2	1	6.G.2
2	1	6.M.1.2	1	6.M.1.2	1	6.M.1.2	2	6.M.1.2	1	6.M.1.2	1	6.M.1.2	1	6.M.1.2
3	1	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.3.1	2	6.A.4.1	1	6.A.4.1
4	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1	2	6.S.2.1	2	6.S.2.1	2	6.S.2.1
5	1	6.A.1.1	2	6.A.1.1	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	2	6.A.1.1
6	1	6.A.2.1	1	6.A.2.1	1	6.A.2.1	2	6.A.2.1	2	6.A.2.1	1	6.A.2.1	1	6.A.2.1
7	1	6.G.1.1	2	6.G.2.1	2	6.G.1.1	2	6.G.2.1	2	6.G.1.1	1	6.G.1.1	1	6.G.1.1
8	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2
9	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	1	6.A.1.1	2	6.A.1.1
10	2	6.G.1.1	2	6.G.2.1	2	6.G.1.1	1	6.G.2.1	2	6.G.1.1	2	6.G.1.1	1	6.G.1.1
11	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1
12	1	6.N.1.1	1	6.N.1.1	1	6.N.1.1	1	6.N.1.1	1	6.N.1.1	1	6.N.1.1	1	6.N.1.1
16	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1
17	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	1	6.S.1.2	2	6.S.1.2
18	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2
19	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1
20	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1
21	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2
22	1	6.N.1.1	2	6.N.1.1	1	6.N.1.1	2	6.N.1.1	1	6.N.1.1	2	6.N.1.1	2	6.N.1.1
23	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	3	6.N.3.1	2	6.N.3.1
24	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	1	6.S.1.2	2	6.S.1.2
25	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1	1	6.S.2.1	1	6.S.2.1	1	6.S.2.1
26	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
27	2	6.G.2.1	2	6.G.2.1	2	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1
28	1	6.N.1.2	2	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2	1	6.N.1.2
29	1	6.S.1.2	1	6.S.1.2	1	6.S.1.2	2	6.S.1.2	1	6.S.1.2	1	6.S.2.1	1	6.S.1.2
30	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2
31	1	6.A.1.2	2	6.A.1.1	2	6.A.1.1	2	6.A.1.2	1	6.A.1.1	1	6.A.1.1	2	6.A.1.1
32	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
33	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2
34	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	1	6.S.1.2	2	6.S.1.2
35	2	6.G.1.1	2	6.G.1.1	2	6.G.1.1	2	6.G.1.1	2	6.G.1.1	2	6.G.1.1	2	6.G.1.1
36	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
37	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1
38	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	1	6.N.2.1	2	6.N.3.1
39	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2
43	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1
44	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	2	6.N.1.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
45	1	6.A.2.1	1	6.A.2.1	2	6.A.2.1	2	6.A.2.1	1	6.A.2.1	1	6.A.2.1	1	6.A.2.1

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 6

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
46	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.1.1	1	6.G.2.1	1	6.G.2.1
47	1	6.A.4.1	1	6.A.4.1	1	6.A.4.1	2	6.A.4.1	2	6.A.4.1	1	6.A.4.1	1	6.A.4.1
48	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2
49	1	6.G.1.2	2	6.G.1.2	1	6.G.1.2	2	6.G.1.2	1	6.G.1.2	2	6.G.1.2	1	6.G.1.2
50	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1
51	2	6.N.1.2	2	6.M.1.2	2	6.N.1.2	2	6.N.1.2	2	6.N.1.2	1	6.N.1.2	2	6.N.1.2
52	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1	2	6.S.1.1	1	6.S.1.1	1	6.S.1.1	1	6.S.1.1
53	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
54	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2	2	6.A.3.2
55	1	6.G.1.1	1	6.G.1.1	2	6.G.1.1	1	6.G.1.2	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1
56	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2	1	6.A.3.2
57	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1	1	6.S.2.1	1	6.S.2.1	1	6.S.2.1
58	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2	1	6.N.2
59	2	6.A.2.1	1	6.A.2.1	2	6.A.2.1	2	6.A.2.1	1	6.A.2.1	1	6.A.2.1	1	6.A.2.1
60	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1	1	6.G.2.1
61	1	6.G.1.1	1	6.G.1.1	2	6.G.1.1	1	6.G.1.1	1	6.G.1.1	1	6.G.1.1	2	6.G.1.1
62	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2	1	6.M.1.2	2	6.M.1.2	2	6.M.1.2
63	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	2	6.A.1.2	1	6.A.1.2	2	6.A.1.1	1	6.A.2.1
64	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1
65	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1
66	1	6.M.1.1	2	6.M.1.1	1	6.M.1.1	2	6.M.1.1	1	6.M.1.1	2	6.M.1.1	1	6.M.1.1
67	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1
68	2	6.M.1.1	2	6.M.1.1	1	6.M.1.1	1	6.M.1.1	1	6.M.1.1	2	6.M.1.1	2	6.M.1.1
69	2	6.G.2.1	2	6.G.2.1	2	6.G.2.1	2	6.G.2.1	1	6.G.2.1	2	6.G.2.1	1	6.G.2.1
70	2	6.S.2	2	6.S.2	1	6.S.2	1	6.S.2	2	6.S.2	1	6.S.2	1	6.S.2
71	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.1	1	6.A.1.2
72	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	2	6.N.2.1	1	6.N.2.1	1	6.N.2.1
73	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	1	6.A.4.1	2	6.A.4.1	1	6.A.4.1
74	2	6.G.1.1	2	6.G.1.2	1	6.G.1.2	2	6.G.1.2	1	6.G.1.1	2	6.G.1.2	1	6.G.1.2
75	1	6.G.1.2	1	6.G.1.2	1	6.G.1.2	1	6.G.1.2	1	6.G.1.2	1	6.G.1.2	1	6.G.1.2
76	1	6.N.3.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1
77	2	6.A.2.1	2	6.A.2.1	2	6.A.2.1	2	6.A.2.1	1	6.A.2.1	2	6.A.2.1	1	6.A.2.1
78	2	6.A.1.2	1	6.A.1.2	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.2.1	1	6.A.1.2
79	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	2	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2
80	2	6.A.4.1	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2	2	6.S.1.2
83	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.N.3.1	2	6.A.3.1	2	6.N.3.1
84	2	6.A.2.1	1	6.A.2.1	1	6.A.1.2	2	6.A.2.1	2	6.A.1.2	2	6.A.2.1	1	6.A.2.1
85	2	6.A.4.1	2	6.A.4.1	2	6.A.4.1	1	6.A.4.1	2	6.A.4.1	2	6.A.4.1	1	6.A.4.1
86	1	6.M.1.2	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2	2	6.M.1.2

Table 6.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 6

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
87	1	6.A.2.1	1	6.A.2.1	1	6.A.2.1	1	6.A.2.1	2	6.A.2.1	1	6.A.2.1	1	6.A.2.1
88	2	6.S.2.1	2	6.S.2.1	1	6.S.2.1	2	6.S.2.1	1	6.S.2.1	1	6.S.2.1	1	6.S.2.1
89	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1	1	6.A.3.1
90	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1	1	6.N.2.1
91	1	6.A.4.1	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.1.2	1	6.A.2.1	1	6.A.1.2
92	2	6.S.2	2	6.S.2.1	1	6.S.2	1	6.S.2	1	6.S.2	1	6.S.2	1	6.S.2.1

Objective Pairwise Comparison: 0.9127
Standard Pairwise Comparison: 0.9864

Table 6.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 6

Low		Medium		High
0		6.391304		7

1 2177242	6.G.2	6.G.2	6.G.2	6.G.2	6.G.2	6.G.2	6.G.2
2 3530923	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2
3 2177296	6.A.3.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1
4 3530908	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1
5 3528464	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1
6 3530238	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
7 3328411	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.2.1	6.G.2.1
8 3531025	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2
9 3327623	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1
10 3328413	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.2.1	6.G.2.1
11 2177244	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1
12 2177279	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1
16 3430175	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1
17 3532841	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2
18 3530275	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2
19 3351221	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1
20 3529876	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1
21 3530445	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2
22 2177282	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1	6.N.1.1
23 2177273	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1
24 2177218	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2
25 3430176	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1
26 2177274	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
27 3529885	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1
28 3532368	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2
29 3328425	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.2.1
30 3532470	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2
31 3344802	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.1	6.A.1.2	6.A.1.2
32 2177289	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
33 2345788	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
34 2177201	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2
35 3532311	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1
36 2345792	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
37 3345094	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1
38 3530838	6.N.2.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1
39 3327654	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2
43 3328422	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1
44 3530839	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.N.1.2
45 3344810	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
46 2177240	6.G.1.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1
47 3430172	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1
48 3344807	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2

Table 6.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 6

49 2177229	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2
50 2177251	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1
51 3531029	6.M.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2	6.N.1.2
52 3328423	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1	6.S.1.1
53 3344918	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
54 2177224	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
55 3328404	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.2
56 2177222	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2	6.A.3.2
57 3355986	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1
58 3532459	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2	6.N.2
59 3327675	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
60 3529883	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1
61 2177230	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1	6.G.1.1
62 2345790	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2
63 3345075	6.A.1.1	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.2.1
64 3344841	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1
65 3328426	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1
66 3529887	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1
67 2177214	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1
68 3530885	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1	6.M.1.1
69 3532347	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1	6.G.2.1
70 3535467	6.S.2	6.S.2	6.S.2	6.S.2	6.S.2	6.S.2	6.S.2
71 3540836	6.A.1.1	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2
72 3530453	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1
73 3530264	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1
74 3328408	6.G.1.1	6.G.1.1	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2
75 3328409	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2	6.G.1.2
76 3344834	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.3.1
77 3327662	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
78 3529893	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.2.1
79 3430173	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2
80 3532480	6.A.4.1	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2	6.S.1.2
83 3530888	6.A.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1	6.N.3.1
84 3345077	6.A.1.2	6.A.1.2	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
85 2177293	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1	6.A.4.1
86 2345791	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2	6.M.1.2
87 3530222	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1	6.A.2.1
88 3530905	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1	6.S.2.1
89 2177217	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1	6.A.3.1
90 3430174	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1	6.N.2.1
91 3530219	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.1.2	6.A.2.1	6.A.4.1
92 3535778	6.S.2	6.S.2	6.S.2	6.S.2	6.S.2	6.S.2.1	6.S.2.1

Table 6.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 6

Low		Medium		High
0		16.33333		55

6.A																				
6.A.1																				
6.A.1.1	5	5	5	5	5	5	5	9	9	9	9	9	9	9	31	31	31	31	31	63
	71																			
6.A.1.2	18	18	18	18	18	18	18	31	31	39	39	39	39	39	39	39	48	48	48	48
	48	48	48	63	63	63	63	63	71	71	71	71	71	71	78	78	78	78	78	
	78	79	79	79	79	79	79	79	84	84	91	91	91	91	91					
6.A.2																				
6.A.2.1	6	6	6	6	6	6	6	45	45	45	45	45	45	45	59	59	59	59	59	59
	59	63	77	77	77	77	77	77	77	78	84	84	84	84	84	87	87	87	87	
	87	87	87	91																
6.A.3																				
6.A.3.1	3	67	67	67	67	67	67	67	83	89	89	89	89	89	89	89				
6.A.3.2	26	26	26	26	26	26	26	32	32	32	32	32	32	32	33	33	33	33	33	33
	33	36	36	36	36	36	36	36	44	44	44	44	44	44	53	53	53	53	53	
	53	53	54	54	54	54	54	54	54	56	56	56	56	56	56	56				
6.A.4																				
6.A.4.1	3	3	3	3	3	3	20	20	20	20	20	20	20	47	47	47	47	47	47	47
	73	73	73	73	73	73	73	80	85	85	85	85	85	85	85	91				
6.G																				
6.G.1																				
6.G.1.1	7	7	7	7	7	10	10	10	10	10	19	19	19	19	19	19	19	35	35	35
	35	35	35	35	46	55	55	55	55	55	55	61	61	61	61	61	61	61	74	

Table 6.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 6

	74																			
6.G.1.2	49	49	49	49	49	49	49	55	74	74	74	74	74	75	75	75	75	75	75	75
6.G.2	1	1	1	1	1	1	1													
6.G.2.1	7	7	10	10	27	27	27	27	27	27	27	46	46	46	46	46	46	60	60	60
	60	60	60	60	69	69	69	69	69	69	69									
6.M																				
6.M.1																				
6.M.1.1	11	11	11	11	11	11	11	50	50	50	50	50	50	50	66	66	66	66	66	66
	66	68	68	68	68	68	68	68												
6.M.1.2	2	2	2	2	2	2	2	51	62	62	62	62	62	62	62	86	86	86	86	86
	86	86																		
6.N																				
6.N.1																				
6.N.1.1	12	12	12	12	12	12	12	22	22	22	22	22	22	22						
6.N.1.2	8	8	8	8	8	8	8	21	21	21	21	21	21	21	28	28	28	28	28	28
	28	44	51	51	51	51	51	51												
6.N.2	30	30	30	30	30	30	30	58	58	58	58	58	58	58						
6.N.2.1	38	43	43	43	43	43	43	43	64	64	64	64	64	64	64	72	72	72	72	72
	72	72	76	76	76	76	76	76	90	90	90	90	90	90	90					
6.N.3																				
6.N.3.1	16	16	16	16	16	16	16	23	23	23	23	23	23	23	38	38	38	38	38	38
	76	83	83	83	83	83	83													
6.S																				
6.S.1																				
6.S.1.1	37	37	37	37	37	37	37	52	52	52	52	52	52	52						

Table 6.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 6

6.S.1.2	17	17	17	17	17	17	17	24	24	24	24	24	24	24	29	29	29	29	29	29
	34	34	34	34	34	34	34	80	80	80	80	80	80							
6.S.2	70	70	70	70	70	70	70	92	92	92	92	92								
6.S.2.1	4	4	4	4	4	4	4	25	25	25	25	25	25	25	29	57	57	57	57	57
	57	57	65	65	65	65	65	65	65	88	88	88	88	88	88	88	92	92		

Table 6.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 6

Low		Medium		High
1		3		7

6.A										
6.A.1										
6.A.1.1	5:7	9:7	31:5	63:1	71:1					
6.A.1.2	18:7	31:2	39:7	48:7	63:5	71:6	78:6	79:7	84:2	91:5
6.A.2										
6.A.2.1	6:7	45:7	59:7	63:1	77:7	78:1	84:5	87:7	91:1	
6.A.3										
6.A.3.1	3:1	67:7	83:1	89:7						
6.A.3.2	26:7	32:7	33:7	36:7	44:6	53:7	54:7	56:7		
6.A.4										
6.A.4.1	3:6	20:7	47:7	73:7	80:1	85:7	91:1			
6.G										
6.G.1										
6.G.1.1	7:5	10:5	19:7	35:7	46:1	55:6	61:7	74:2		
6.G.1.2	49:7	55:1	74:5	75:7						
6.G.2	1:7									
6.G.2.1	7:2	10:2	27:7	46:6	60:7	69:7				
6.M										
6.M.1										
6.M.1.1	11:7	50:7	66:7	68:7						
6.M.1.2	2:7	51:1	62:7	86:7						
6.N										
6.N.1										
6.N.1.1	12:7	22:7								
6.N.1.2	8:7	21:7	28:7	44:1	51:6					
6.N.2	30:7	58:7								
6.N.2.1	38:1	43:7	64:7	72:7	76:6	90:7				
6.N.3										
6.N.3.1	16:7	23:7	38:6	76:1	83:6					
6.S										
6.S.1										
6.S.1.1	37:7	52:7								
6.S.1.2	17:7	24:7	29:6	34:7	80:6					
6.S.2	70:7	92:5								
6.S.2.1	4:7	25:7	29:1	57:7	65:7	88:7	92:2			

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 6

Low		Medium		High
1		3		7

1 2177242	6.G.2:7	
2 3530923	6.M.1.2:7	
3 2177296	6.A.3.1:1	6.A.4.1:6
4 3530908	6.S.2.1:7	
5 3528464	6.A.1.1:7	
6 3530238	6.A.2.1:7	
7 3328411	6.G.1.1:5	6.G.2.1:2
8 3531025	6.N.1.2:7	
9 3327623	6.A.1.1:7	
10 3328413	6.G.1.1:5	6.G.2.1:2
11 2177244	6.M.1.1:7	
12 2177279	6.N.1.1:7	
16 3430175	6.N.3.1:7	
17 3532841	6.S.1.2:7	
18 3530275	6.A.1.2:7	
19 3351221	6.G.1.1:7	
20 3529876	6.A.4.1:7	
21 3530445	6.N.1.2:7	
22 2177282	6.N.1.1:7	
23 2177273	6.N.3.1:7	
24 2177218	6.S.1.2:7	
25 3430176	6.S.2.1:7	
26 2177274	6.A.3.2:7	
27 3529885	6.G.2.1:7	
28 3532368	6.N.1.2:7	
29 3328425	6.S.1.2:6	6.S.2.1:1
30 3532470	6.N.2:7	
31 3344802	6.A.1.1:5	6.A.1.2:2
32 2177289	6.A.3.2:7	
33 2345788	6.A.3.2:7	
34 2177201	6.S.1.2:7	
35 3532311	6.G.1.1:7	
36 2345792	6.A.3.2:7	
37 3345094	6.S.1.1:7	
38 3530838	6.N.2.1:1	6.N.3.1:6
39 3327654	6.A.1.2:7	
43 3328422	6.N.2.1:7	
44 3530839	6.A.3.2:6	6.N.1.2:1
45 3344810	6.A.2.1:7	
46 2177240	6.G.1.1:1	6.G.2.1:6
47 3430172	6.A.4.1:7	
48 3344807	6.A.1.2:7	

Table 6.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 6

49 2177229	6.G.1.2:7		
50 2177251	6.M.1.1:7		
51 3531029	6.M.1.2:1	6.N.1.2:6	
52 3328423	6.S.1.1:7		
53 3344918	6.A.3.2:7		
54 2177224	6.A.3.2:7		
55 3328404	6.G.1.1:6	6.G.1.2:1	
56 2177222	6.A.3.2:7		
57 3355986	6.S.2.1:7		
58 3532459	6.N.2:7		
59 3327675	6.A.2.1:7		
60 3529883	6.G.2.1:7		
61 2177230	6.G.1.1:7		
62 2345790	6.M.1.2:7		
63 3345075	6.A.1.1:1	6.A.1.2:5	6.A.2.1:1
64 3344841	6.N.2.1:7		
65 3328426	6.S.2.1:7		
66 3529887	6.M.1.1:7		
67 2177214	6.A.3.1:7		
68 3530885	6.M.1.1:7		
69 3532347	6.G.2.1:7		
70 3535467	6.S.2:7		
71 3540836	6.A.1.1:1	6.A.1.2:6	
72 3530453	6.N.2.1:7		
73 3530264	6.A.4.1:7		
74 3328408	6.G.1.1:2	6.G.1.2:5	
75 3328409	6.G.1.2:7		
76 3344834	6.N.2.1:6	6.N.3.1:1	
77 3327662	6.A.2.1:7		
78 3529893	6.A.1.2:6	6.A.2.1:1	
79 3430173	6.A.1.2:7		
80 3532480	6.A.4.1:1	6.S.1.2:6	
83 3530888	6.A.3.1:1	6.N.3.1:6	
84 3345077	6.A.1.2:2	6.A.2.1:5	
85 2177293	6.A.4.1:7		
86 2345791	6.M.1.2:7		
87 3530222	6.A.2.1:7		
88 3530905	6.S.2.1:7		
89 2177217	6.A.3.1:7		
90 3430174	6.N.2.1:7		
91 3530219	6.A.1.2:5	6.A.2.1:1	6.A.4.1:1
92 3535778	6.S.2:5	6.S.2.1:2	

Table 6.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 6

Low DOK		Matched DOK		High DOK
1		3		7

6.A [2]:										
6.A. 1 [2]:										
6.A. 1.1 [1]:	5:7[1 .29]	9:7[1 .14]	31:5[1.6]	63:1[2]	71:1[1]					
6.A. 1.2 [2]:	18:7[2]	31:2[1.5]	39:7[1.29]	48:7[1.29]	63:5[1.8]	71:6[1.17]	78:6[1.33]	79:7[1.29]	84:2[1.5]	91:5[1]
6.A. 2 [2]:										
6.A. 2.1 [2]:	6:7[1 .29]	45:7[1.29]	59:7[1.43]	63:1[1]	77:7[1.71]	78:1[1]	84:5[1.6]	87:7[1.14]	91:1[1]	
6.A. 3 [1]:										
6.A. 3.1 [1]:	3:1[2]	67:7[1]	83:1[2]	89:7[1]						
6.A. 3.2 [1]:	26:7[1]	32:7[1]	33:7[2]	36:7[1]	44:6[1]	53:7[1]	54:7[2]	56:7[1]		
6.A. 4 [2]:										
6.A. 4.1 [2]:	3:6[1 .67]	20:7[2]	47:7[1.29]	73:7[1.71]	80:1[2]	85:7[1.71]	91:1[1]			
6.G [2]:										
6.G. 1 [2]:										
6.G. 1.1 [2]:	7:5[1 .4]	10:5[1.8]	19:7[1]	35:7[2]	46:1[1]	55:6[1.17]	61:7[1.29]	74:2[1.5]		
6.G. 1.2 [1]:	49:7[1.43]	55:1[1]	74:5[1.6]	75:7[1]						
6.G. 2 [2]:	1:7[1]									
6.G. 2.1	7:2[2]	10:2[1.5]	27:7[1.43]	46:6[1]	60:7[1]	69:7[1.71]				

Table 6.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 6

[2]:							
6.M [1]:							
6.M. 1 [1]:							
6.M. 1.1 [1]:	11:7[1]	50:7[1]	66:7[1.43]	68:7[1.57]			
6.M. 1.2 [1]:	2:7[1.14]	51:1[2]	62:7[1.86]	86:7[1.86]			
6.N [1]:							
6.N. 1 [1]:							
6.N. 1.1 [1]:	12:7[1]	22:7[1.57]					
6.N. 1.2 [1]:	8:7[1]	21:7[1]	28:7[1.14]	44:1[2]	51:6[1.83]		
6.N. 2 [1]:	30:7[1]	58:7[1]					
6.N. 2.1 [1]:	38:1[1]	43:7[1]	64:7[1]	72:7[1.14]	76:6[1]	90:7[1]	
6.N. 3 [2]:							
6.N. 3.1 [2]:	16:7[2]	23:7[2.14]	38:6[2]	76:1[1]	83:6[2]		
6.S [1]:							
6.S.1 [3]:							
6.S.1 .1 [1]:	37:7[1]	52:7[1.14]					
6.S.1 .2 [3]:	17:7[1.86]	24:7[1.86]	29:6[1.17]	34:7[1.86]	80:6[2]		
6.S.2 [1]:	70:7[1.43]	92:5[1.2]					
6.S.2 .1 [1]:	4:7[1.86]	25:7[1.43]	29:1[1]	57:7[1.43]	65:7[1.71]	88:7[1.43]	92:2[1.5]

Table 7.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 7
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
7.A - ALGEBRA	4	6.14	1 2	2 4	33 66	27	0.76	YES
7.G - GEOMETRY	2	3.86	1 2	2 1	66 33	14.57	1.50	YES
7.M - MEASUREMENT	1	2	1	2	100	6.43	1.05	YES
7.N - NUMBER SENSE	3	4.14	1 2	2 2	50 50	21.14	0.64	YES
7.S - STATISTICS AND PROBABILITY	2	3	1 2	2 1	66 33	14.86	0.35	YES
Total	12	19.14	1 2	10 8	55 44	84	0	

Table 7.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 7

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
7.A - ALGEBRA	4	6.14	27	0.76	48	262	51	36	1	6	YES
7.G - GEOMETRY	2	3.86	14.57	1.50	19	160	63	40	19	46	YES
7.M - MEASUREMENT	1	2	6.43	1.05	0	0	75	26	25	26	YES
7.N - NUMBER SENSE	3	4.14	21.14	0.64	13	135	62	30	25	26	YES
7.S - STATISTICS AND PROBABILITY	2	3	14.86	0.35	3	37	70	28	27	30	YES
Total	12	19.14	84	0	19	31	60	35	21	32	

Table 7.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers

South Dakota Mathematics 2008 Grade 7

Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
7.A - ALGEBRA	4	6.14	27	0.76	6.14	0.35	100	0	YES	32	1	0.81	0.04	YES
7.G - GEOMETRY	2	3.86	14.57	1.50	3.86	0.35	100	0	YES	17	2	0.65	0.04	WEAK
7.M - MEASUREMENT	1	2	6.43	1.05	2	0	100	0	YES	8	1	0.98	0.06	YES
7.N - NUMBER SENSE	3	4.14	21.14	0.64	4.14	0.35	100	0	YES	25	1	0.81	0.07	YES
7.S - STATISTICS AND PROBABILITY	2	3	14.86	0.35	3	0	100	0	YES	18	0	0.87	0.04	YES
Total	12	19.14	84	0	3.83	1.40	100	0		20	8	0.82	0.12	

Table 7.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 7
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
7.A - ALGEBRA	YES	YES	YES	YES
7.G - GEOMETRY	YES	YES	YES	WEAK
7.M - MEASUREMENT	YES	YES	YES	YES
7.N - NUMBER SENSE	YES	YES	YES	YES
7.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 7

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	2	1	2	1	2	1	1
4	2	2	2	2	2	1	2
5	1	1	1	1	1	1	1
6	2	2	1	1	2	1	1
7	1	1	1	1	1	1	1
8	2	2	2	1	2	1	1
9	2	2	2	2	2	2	1
10	2	2	2	2	2	2	2
11	2	2	2	2	2	2	2
12	2	2	2	2	2	2	2
16	2	2	2	2	2	2	2
17	2	2	1	1	1	1	1
18	1	1	1	1	1	1	1
19	1	1	1	1	1	1	1
20	1	1	1	1	1	1	1
21	2	1	2	1	1	1	2
22	2	1	2	2	1	2	2
23	1	1	1	1	1	1	1
24	2	2	2	2	2	2	2
25	2	1	2	2	2	2	1
26	1	1	1	1	1	1	1
27	1	2	1	1	2	1	1
28	1	2	1	1	1	1	1
29	2	2	2	2	2	2	2
30	2	2	2	2	2	2	2
31	1	1	1	1	1	1	1
32	1	1	1	1	1	1	1
33	2	2	1	1	1	1	1
34	2	1	1	1	2	1	1
35	1	1	1	2	1	2	1
36	1	1	1	1	1	1	1
37	1	1	1	1	1	1	1
38	1	1	1	1	1	1	1
39	2	2	2	2	2	2	2
43	1	1	1	1	1	1	1
44	1	1	1	2	2	2	1
45	1	1	1	1	2	1	2
46	1	1	1	1	2	1	1
47	1	1	1	2	1	1	1
48	1	1	1	1	1	1	1
49	1	1	1	1	1	1	1
50	2	1	2	1	1	1	1
51	2	2	1	1	2	1	1

Table 7.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 7

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	2	2	1	2	2	3	2
53	1	1	1	1	1	1	1
54	1	1	1	1	1	1	1
55	1	2	2	2	2	2	2
56	2	2	2	2	2	2	2
57	1	2	2	2	2	2	1
58	2	2	2	2	2	2	2
59	1	1	1	1	1	1	1
60	1	1	1	1	1	1	1
61	2	2	2	1	2	1	2
62	2	2	1	1	1	1	1
63	2	2	1	2	2	2	1
64	1	1	2	2	1	1	1
65	2	2	2	2	2	2	2
66	2	2	2	1	2	2	1
67	1	1	1	2	1	2	1
68	1	1	1	1	1	1	1
69	2	1	1	2	2	1	2
70	1	1	1	1	2	1	1
71	1	1	1	1	2	1	1
72	2	2	1	1	1	1	1
73	1	1	1	1	1	1	1
74	1	1	1	1	1	1	1
75	2	1	2	2	2	2	2
76	2	2	2	2	2	2	2
77	2	2	2	2	2	2	2
78	2	1	2	1	2	1	1
79	1	2	1	2	2	1	1
80	1	2	2	2	2	2	2
83	2	1	1	1	1	1	1
84	2	1	2	2	2	2	2
85	2	2	2	2	2	2	2
86	2	1	2	2	1	2	2
87	1	1	1	1	1	1	1
88	2	2	2	2	2	2	2
89	2	2	1	1	1	1	2
90	2	2	2	2	2	1	1
91	1	2	2	2	2	1	2
92	2	2	2	2	2	2	2

Intraclass Correlation: 0.8959
Pairwise Comparison: 0.7715

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 7

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1
2	2	7.S.2.1	2	7.S.2.1	2	7.S.2.1	2	7.S.2.1	2	7.S.2.1	2	7.S.2.1	2	7.S.2.1
3	2	7.G.2.1	1	7.G.2.1	2	7.G.2.1	1	7.G.2.1	2	7.G.2.1	1	7.G.2.1	1	7.G.2.1
4	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	1	7.A.4.1	2	7.A.4.1
5	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2
6	2	7.A.4.1	2	7.A.4.1	1	7.A.4.1	1	7.A.4.1	2	7.A.4.1	1	7.A.4.1	1	7.A.4.1
7	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1
8	2	7.N.1.1	2	7.N.1.1	2	7.N.1.1	1	7.N.1.1	2	7.N.1.1	1	7.N.1.1	1	7.N.1.1
9	2	7.A.3.2	2	7.A.3.2	2	7.N.3.1	2	7.A.3.2	2	7.A.3.2	2	7.N.3.1	1	7.A.3.2
10	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1
11	2	7.N.1.2	2	7.N.1.2	2	7.N.1.2	2	7.N.1.2	2	7.N.1.2	2	7.N.1.2	2	7.N.1.2
12	2	7.A.1.1	2	7.A.1.1	2	7.A.1	2	7.A.1.1	2	7.A.1.1	2	7.A.1.1	2	7.A.1.1
16	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2
17	2	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.1.2	1	7.S.2.1
18	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1
19	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1
20	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1
21	2	7.N.1.1	1	7.N.1.1	2	7.N.1.1	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1	2	7.N.1.1
22	2	7.N.3.1	1	7.N.1.1	2	7.N.1.1	2	7.N.2.1	1	7.N.1.1	2	7.N.1.1	2	7.N.1.1
23	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.1.1
24	2	7.N.3.1	2	7.N.2.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.2.1	2	7.N.3.1
25	2	7.A.3.2	1	7.A.3.2	2	7.A.3.2	2	7.A.3.2	2	7.A.3.2	2	7.A.3.2	1	7.A.3.2
26	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1
27	1	7.N.1.2	2	7.N.1.2	1	7.N.1.2	1	7.N.1.2	2	7.N.1.2	1	7.N.2.1	1	7.N.1.2
28	1	7.S.1.1	2	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1
29	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2
30	2	7.G.1	2	7.G.1	2	7.G.1	2	7.G.1	2	7.G.1	2	7.G.1	2	7.G.1.1
31	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1	1	7.N.1.1
32	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1
33	2	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1
34	2	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	2	7.A.2.1	1	7.A.2.1	1	7.A.2.1
35	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	2	7.G.1.1	1	7.G.1.1	2	7.G.1.1	1	7.G.1.1
36	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1
37	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1	1	7.A.3.1
38	1	7.A.3.2	1	7.A.3.2	1	7.A.3.2	1	7.A.3.2	1	7.A.3.2	1	7.A.3.2	1	7.A.3.2
39	2	7.N.3.1	2	7.N.2.1	2	7.N.3.1	2	7.N.3.1	2	7.N.2.1	2	7.N.2.1	2	7.N.2.1
43	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1	1	7.M.1.1
44	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	2	7.N.2.1	2	7.N.2.1	2	7.N.2.1	1	7.N.2.1
45	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	2	7.A.1.1	1	7.A.1.1	2	7.A.1.1

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 7

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
46	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	2	7.N.2.1	1	7.N.2.1	1	7.N.2.1
47	1	7.A.4.1	1	7.A.4.1	1	7.A.4.1	2	7.A.4.1	1	7.A.4.1	1	7.A.4.1	1	7.A.4.1
48	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1	1	7.S.1.1
49	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1
50	2	7.G.2.1	1	7.G.2.1	2	7.G.2.1	1	7.G.2.1	1	7.G.2.1	1	7.G.2.1	1	7.G.2.1
51	2	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1
52	2	7.S.1.1	2	7.S.1.1	1	7.S.1.1	2	7.S.1.1	2	7.S.1.1	3	7.S.1.1	2	7.S.1.1
53	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1
54	1	7.M.1.2	1	7.M.1.2	1	7.M.1.2	1	7.M.1.2	1	7.M.1.2	1	7.M.1.2	1	7.M.1.2
55	1	7.G.1.1	2	7.G.1.1	2	7.G.1.1	2	7.G.1.1	2	7.M.1.1	2	7.G.1.1	2	7.G.1.1
56	2	7.N.3.1	2	7.N.2.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1
57	1	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	1	7.G.2.1
58	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2
59	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2
60	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1
61	2	7.N.2.1	2	7.N.2.1	2	7.N.2.1	1	7.N.2.1	2	7.N.2.1	1	7.N.2.1	2	7.N.2.1
62	2	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.1.1
63	2	7.G.1.2	2	7.G.1.2	1	7.G.1.2	2	7.G.1.2	2	7.G.1.2	2	7.G.1.2	1	7.G.1.2
64	1	7.A.3.1	1	7.A.2.1	2	7.A.2.1	2	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1
65	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.M.1.1	2	7.G.2.1	2	7.G.2.1
66	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	1	7.S.1.2	2	7.S.1.2	2	7.S.1.2	1	7.S.1.2
67	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	2	7.A.2.1	1	7.A.2.1	2	7.A.2.1	1	7.A.2.1
68	1	7.N.1.2	1	7.N.1.2	1	7.N.1.2	1	7.N.1.2	1	7.N.1.2	1	7.N.1.2	1	7.N.1.2
69	2	7.S.2.1	1	7.N.2.1	1	7.N.2.1	2	7.N.2.1	2	7.N.2.1	1	7.N.2.1	2	7.N.2.1
70	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	1	7.A.1.2	2	7.A.1.2	1	7.A.1.2	1	7.A.1.2
71	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	1	7.N.2.1	2	7.N.2.1	1	7.N.2.1	1	7.N.2.1
72	2	7.S.2.1	2	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1
73	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1	1	7.G.1.1
74	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1	1	7.A.2.1
75	2	7.A.4.1	1	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.4.1
76	2	7.N.2.1	2	7.N.2.1	2	7.N.2.1	2	7.N.3.1	2	7.N.2.1	2	7.N.2.1	2	7.N.2.1
77	2	7.A.3.1	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2	2	7.S.1.2
78	2	7.G.2.1	1	7.G.2.1	2	7.G.2.1	1	7.G.2.1	2	7.G.2.1	1	7.G.2.1	1	7.G.2.1
79	1	7.M.1.2	2	7.M.1.2	1	7.M.1.2	2	7.M.1.2	2	7.M.1.2	1	7.M.1.2	1	7.M.1.2
80	1	7.N.1.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1
83	2	7.G.2.1	1	7.G.2.1	1	7.G.2.1	1	7.G.2.1	1	7.M.1.1	1	7.G.2.1	1	7.G.2.1
84	2	7.A.4.1	1	7.A.4.1	2	7.A.4.1	2	7.A.4.1	2	7.A.1.1	2	7.A.4.1	2	7.A.4.1
85	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.2.1	2	7.N.3.1
86	2	7.A.4.1	1	7.A.4.1	2	7.A.4.1	2	7.A.4.1	1	7.A.4.1	2	7.A.4.1	2	7.A.4.1

Table 7.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 7

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
87	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1	1	7.A.1.1
88	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.G.2.1	2	7.A.3.2	2	7.G.2.1	2	7.G.2.1
89	2	7.S.2.1	2	7.G.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	1	7.S.2.1	2	7.S.2.1
90	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	2	7.N.3.1	1	7.N.2	1	7.N.2.1
91	1	7.N.1.1	2	7.N.3.1	2	7.N.1.1	2	7.N.3.1	2	7.N.3.1	1	7.N.1.1	2	7.N.3.1
92	2	7.M.1.2	2	7.M.1.2	2	7.M.1.2	2	7.M.1.2	2	7.M.1.2	2	7.M.1.2	2	7.M.1.2

Objective Pairwise Comparison: 0.8912
Standard Pairwise Comparison: 0.9705

Table 7.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 7

Low		Medium		High
0		6.391304		7

1 2177354	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1
2 3528728	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
3 2177336	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1
4 2177393	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
5 3332293	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2
6 2177391	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
7 2345809	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1
8 2177376	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1
9 2177386	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.N.3.1	7.N.3.1
10 3348307	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
11 2106838	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2
12 3534103	7.A.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1
16 2177321	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2
17 3430181	7.S.1.2	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
18 2177329	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1
19 2345796	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1
20 2177304	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1
21 2177360	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1
22 2177375	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.2.1	7.N.3.1
23 2177316	7.A.1.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
24 2345802	7.N.2.1	7.N.2.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
25 2177382	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2
26 3529192	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1
27 2345800	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.2.1
28 3529167	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1
29 2177320	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2
30 2106860	7.G.1	7.G.1	7.G.1	7.G.1	7.G.1	7.G.1	7.G.1.1
31 3529216	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1	7.N.1.1
32 3527216	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1
33 3529626	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
34 3526950	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
35 2177352	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1
36 3526915	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1
37 2177322	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1	7.A.3.1
38 3527223	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2	7.A.3.2
39 3528648	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.3.1	7.N.3.1	7.N.3.1
43 2345807	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1	7.M.1.1
44 2345812	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1
45 2345795	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1
46 2345799	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1
47 3348312	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
48 3528722	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1

Table 7.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 7

49 3526952	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
50 3529623	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1
51 2177310	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
52 3528719	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1	7.S.1.1
53 3528047	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
54 3528622	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2
55 2345797	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.M.1.1
56 2177365	7.N.2.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
57 3529396	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1
58 2177395	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2
59 2345806	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2
60 3529382	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1
61 3529178	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1
62 3529688	7.S.1.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
63 2177333	7.G.1.2	7.G.1.2	7.G.1.2	7.G.1.2	7.G.1.2	7.G.1.2	7.G.1.2
64 3430179	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.3.1
65 3344861	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.M.1.1
66 3528724	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2
67 2177307	7.A.1.2	7.A.1.2	7.A.1.2	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
68 3528638	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2	7.N.1.2
69 2177371	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.S.2.1
70 3525691	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2	7.A.1.2
71 3332171	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1
72 2177302	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
73 3529383	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1	7.G.1.1
74 2177309	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1	7.A.2.1
75 3348301	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
76 3344868	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.2.1	7.N.3.1
77 2177319	7.A.3.1	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2	7.S.1.2
78 3344909	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1
79 2177347	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2
80 3529245	7.N.1.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
83 3332316	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.M.1.1
84 3528029	7.A.1.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
85 3344907	7.N.2.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
86 3528032	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1	7.A.4.1
87 3430178	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1	7.A.1.1
88 3430180	7.A.3.2	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1	7.G.2.1
89 3430182	7.G.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1	7.S.2.1
90 2177380	7.N.2	7.N.2.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
91 2177369	7.N.1.1	7.N.1.1	7.N.1.1	7.N.3.1	7.N.3.1	7.N.3.1	7.N.3.1
92 2177346	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2	7.M.1.2

Table 7.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 7

Low		Medium		High
0		16.33333		58

7.A																				
7.A.1	12																			
7.A.1.1	12	12	12	12	12	12	20	20	20	20	20	20	20	23	36	36	36	36	36	36
	36	45	45	45	45	45	45	45	84	87	87	87	87	87	87	87				
7.A.1.2	5	5	5	5	5	5	5	59	59	59	59	59	59	59	67	67	67	70	70	70
	70	70	70	70																
7.A.2																				
7.A.2.1	23	23	23	23	23	23	34	34	34	34	34	34	34	49	49	49	49	49	49	49
	53	53	53	53	53	53	53	64	64	64	64	64	64	67	67	67	67	74	74	
	74	74	74	74	74															
7.A.3																				
7.A.3.1	32	32	32	32	32	32	32	37	37	37	37	37	37	37	64	77				
7.A.3.2	9	9	9	9	9	25	25	25	25	25	25	25	38	38	38	38	38	38	38	88
7.A.4																				
7.A.4.1	4	4	4	4	4	4	4	6	6	6	6	6	6	6	10	10	10	10	10	10
	10	47	47	47	47	47	47	47	75	75	75	75	75	75	75	84	84	84	84	
	84	84	86	86	86	86	86	86	86											
7.G																				
7.G.1	30	30	30	30	30	30														
7.G.1.1	7	7	7	7	7	7	7	18	18	18	18	18	18	18	30	35	35	35	35	35
	35	35	55	55	55	55	55	55	60	60	60	60	60	60	60	73	73	73	73	
	7	7	7																	

Table 7.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 7

	3	3	3																	
7.G.1.2	63	63	63	63	63	63	63													
7.G.2																				
7.G.2.1	3	3	3	3	3	3	3	50	50	50	50	50	50	50	57	57	57	57	57	57
	57	65	65	65	65	65	65	78	78	78	78	78	78	78	83	83	83	83	83	
	83	88	88	88	88	88	88	89												
7.M																				
7.M.1																				
7.M.1.1	1	1	1	1	1	1	1	19	19	19	19	19	19	19	43	43	43	43	43	43
	43	55	65	83																
7.M.1.2	54	54	54	54	54	54	54	79	79	79	79	79	79	79	92	92	92	92	92	92
	92																			
7.N																				
7.N.1																				
7.N.1.1	8	8	8	8	8	8	8	21	21	21	21	21	21	21	22	22	22	22	22	31
	31	31	31	31	31	31	80	91	91	91										
7.N.1.2	11	11	11	11	11	11	11	27	27	27	27	27	27	68	68	68	68	68	68	68
7.N.2	90																			
7.N.2.1	22	24	24	26	26	26	26	26	26	26	27	39	39	39	39	44	44	44	44	44
	44	44	46	46	46	46	46	46	46	56	61	61	61	61	61	61	61	69	69	
	69	69	69	69	71	71	71	71	71	71	71	76	76	76	76	76	76	85	90	
7.N.3																				
7.N.3.1	9	9	22	24	24	24	24	24	39	39	39	56	56	56	56	56	56	76	80	80
	80	80	80	80	85	85	85	85	85	85	90	90	90	90	90	91	91	91	91	

Table 7.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 7

7.S																				
7.S.1																				
7.S.1.1	28	28	28	28	28	28	28	48	48	48	48	48	48	48	52	52	52	52	52	52
	52	62																		
7.S.1.2	16	16	16	16	16	16	16	17	29	29	29	29	29	29	29	58	58	58	58	58
	58	58	66	66	66	66	66	66	66	77	77	77	77	77	77					
7.S.2																				
7.S.2.1	2	2	2	2	2	2	2	17	17	17	17	17	17	33	33	33	33	33	33	33
	51	51	51	51	51	51	51	62	62	62	62	62	62	69	72	72	72	72	72	
	72	72	89	89	89	89	89	89												

Table 7.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 7

Low		Medium		High
1		3		7

7.A													
7.A.1	12:1												
7.A.1.1	12:6	20:7	23:1	36:7	45:7	84:1	87:7						
7.A.1.2	5:7	59:7	67:3	70:7									
7.A.2													
7.A.2.1	23:6	34:7	49:7	53:7	64:6	67:4	74:7						
7.A.3													
7.A.3.1	32:7	37:7	64:1	77:1									
7.A.3.2	9:5	25:7	38:7	88:1									
7.A.4													
7.A.4.1	4:7	6:7	10:7	47:7	75:7	84:6	86:7						
7.G													
7.G.1	30:6												
7.G.1.1	7:7	18:7	30:1	35:7	55:6	60:7	73:7						
7.G.1.2	63:7												
7.G.2													
7.G.2.1	3:7	50:7	57:7	65:6	78:7	83:6	88:6	89:1					
7.M													
7.M.1													
7.M.1.1	1:7	19:7	43:7	55:1	65:1	83:1							
7.M.1.2	54:7	79:7	92:7										
7.N													
7.N.1													
7.N.1.1	8:7	21:7	22:5	31:7	80:1	91:3							
7.N.1.2	11:7	27:6	68:7										
7.N.2	90:1												
7.N.2.1	22:1	24:2	26:7	27:1	39:4	44:7	46:7	56:1	61:7	69:6	71:7	76:6	85:1
	90:1												
7.N.3													
7.N.3.1	9:2	22:1	24:5	39:3	56:6	76:1	80:6	85:6	90:5	91:4			
7.S													
7.S.1													
7.S.1.1	28:7	48:7	52:7	62:1									
7.S.1.2	16:7	17:1	29:7	58:7	66:7	77:6							
7.S.2													
7.S.2.1	2:7	17:6	33:7	51:7	62:6	69:1	72:7	89:6					

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 7

Low		Medium		High
1		3		7

1 2177354	7.M.1.1:7		
2 3528728	7.S.2.1:7		
3 2177336	7.G.2.1:7		
4 2177393	7.A.4.1:7		
5 3332293	7.A.1.2:7		
6 2177391	7.A.4.1:7		
7 2345809	7.G.1.1:7		
8 2177376	7.N.1.1:7		
9 2177386	7.A.3.2:5	7.N.3.1:2	
10 3348307	7.A.4.1:7		
11 2106838	7.N.1.2:7		
12 3534103	7.A.1:1	7.A.1.1:6	
16 2177321	7.S.1.2:7		
17 3430181	7.S.1.2:1	7.S.2.1:6	
18 2177329	7.G.1.1:7		
19 2345796	7.M.1.1:7		
20 2177304	7.A.1.1:7		
21 2177360	7.N.1.1:7		
22 2177375	7.N.1.1:5	7.N.2.1:1	7.N.3.1:1
23 2177316	7.A.1.1:1	7.A.2.1:6	
24 2345802	7.N.2.1:2	7.N.3.1:5	
25 2177382	7.A.3.2:7		
26 3529192	7.N.2.1:7		
27 2345800	7.N.1.2:6	7.N.2.1:1	
28 3529167	7.S.1.1:7		
29 2177320	7.S.1.2:7		
30 2106860	7.G.1:6	7.G.1.1:1	
31 3529216	7.N.1.1:7		
32 3527216	7.A.3.1:7		
33 3529626	7.S.2.1:7		
34 3526950	7.A.2.1:7		
35 2177352	7.G.1.1:7		
36 3526915	7.A.1.1:7		
37 2177322	7.A.3.1:7		
38 3527223	7.A.3.2:7		
39 3528648	7.N.2.1:4	7.N.3.1:3	
43 2345807	7.M.1.1:7		
44 2345812	7.N.2.1:7		
45 2345795	7.A.1.1:7		
46 2345799	7.N.2.1:7		
47 3348312	7.A.4.1:7		
48 3528722	7.S.1.1:7		

Table 7.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 7

49 3526952	7.A.2.1:7		
50 3529623	7.G.2.1:7		
51 2177310	7.S.2.1:7		
52 3528719	7.S.1.1:7		
53 3528047	7.A.2.1:7		
54 3528622	7.M.1.2:7		
55 2345797	7.G.1.1:6	7.M.1.1:1	
56 2177365	7.N.2.1:1	7.N.3.1:6	
57 3529396	7.G.2.1:7		
58 2177395	7.S.1.2:7		
59 2345806	7.A.1.2:7		
60 3529382	7.G.1.1:7		
61 3529178	7.N.2.1:7		
62 3529688	7.S.1.1:1	7.S.2.1:6	
63 2177333	7.G.1.2:7		
64 3430179	7.A.2.1:6	7.A.3.1:1	
65 3344861	7.G.2.1:6	7.M.1.1:1	
66 3528724	7.S.1.2:7		
67 2177307	7.A.1.2:3	7.A.2.1:4	
68 3528638	7.N.1.2:7		
69 2177371	7.N.2.1:6	7.S.2.1:1	
70 3525691	7.A.1.2:7		
71 3332171	7.N.2.1:7		
72 2177302	7.S.2.1:7		
73 3529383	7.G.1.1:7		
74 2177309	7.A.2.1:7		
75 3348301	7.A.4.1:7		
76 3344868	7.N.2.1:6	7.N.3.1:1	
77 2177319	7.A.3.1:1	7.S.1.2:6	
78 3344909	7.G.2.1:7		
79 2177347	7.M.1.2:7		
80 3529245	7.N.1.1:1	7.N.3.1:6	
83 3332316	7.G.2.1:6	7.M.1.1:1	
84 3528029	7.A.1.1:1	7.A.4.1:6	
85 3344907	7.N.2.1:1	7.N.3.1:6	
86 3528032	7.A.4.1:7		
87 3430178	7.A.1.1:7		
88 3430180	7.A.3.2:1	7.G.2.1:6	
89 3430182	7.G.2.1:1	7.S.2.1:6	
90 2177380	7.N.2:1	7.N.2.1:1	7.N.3.1:5
91 2177369	7.N.1.1:3	7.N.3.1:4	
92 2177346	7.M.1.2:7		

Table 7.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 7

Low DOK		Matched DOK		High DOK
1		3		7

7.A [2]:							
7.A.1 [2]:	12:1 [2]						
7.A.1.1 [2]:	12:6 [2]	20:7 [1]	23:1 [1]	36:7 [1]	45:7 [1.29]	84:1 [2]	87:7 [1]
7.A.1.2 [1]:	5:7[1]	59:7 [1]	67:3 [1]	70:7 [1.14]			
7.A.2 [2]:							
7.A.2.1 [2]:	23:6 [1]	34:7 [1.29]	49:7 [1]	53:7 [1]	64:6 [1.33]	67:4 [1.5]	74:7 [1]
7.A.3 [2]:							
7.A.3.1 [1]:	32:7 [1]	37:7 [1]	64:1 [1]	77:1 [2]			
7.A.3.2 [2]:	9:5[1.8]	25:7 [1.71]	38:7 [1]	88:1 [2]			
7.A.4 [2]:							
7.A.4.1 [2]:	4:7[1.86]	6:7[1.43]	10:7 [2]	47:7 [1.14]	75:7 [1.86]	84:6 [1.83]	86:7 [1.71]
7.G [1]:							
7.G.1 [1]:	30:6 [2]						
7.G.1.1	7:7[1]	18:7 [1]	30:1 [2]	35:7 [1.2	55:6 [1.8	60:7 [1]	73:7 [1]

Table 7.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 7

[1]:				9]	3]								
7.G.1.2 [1]:	63:7 [1.71]												
7.G.2 [2]:													
7.G.2.1 [2]:	3:7[1.43]	50:7 [1.29]	57:7 [1.71]	65:6 [2]	78:7 [1.43]	83:6 [1.17]	88:6 [2]	89:1 [2]					
7.M [1]:													
7.M.1 [1]:													
7.M.1.1 [1]:	1:7[1]	19:7 [1]	43:7 [1]	55:1 [2]	65:1 [2]	83:1 [1]							
7.M.1.2 [1]:	54:7 [1]	79:7 [1.43]	92:7 [2]										
7.N [2]:													
7.N.1 [2]:													
7.N.1.1 [2]:	8:7[1.57]	21:7 [1.43]	22:5 [1.6]	31:7 [1]	80:1 [1]	91:3 [1.33]							
7.N.1.2 [1]:	11:7 [2]	27:6 [1.33]	68:7 [1]										
7.N.2 [1]:	90:1 [1]												
7.N.2.1 [1]:	22:1 [2]	24:2 [2]	26:7 [1]	27:1 [1]	39:4 [2]	44:7 [1.43]	46:7 [1.14]	56:1 [2]	61:7 [1.71]	69:6 [1.5]	71:7 [1.14]	76:6 [2]	85:1 [2]
	90:1 [1]												
7.N.3 [2]:													
7.N.	9:2[	22:1	24:5	39:3	56:6	76:1	80:6	85:6	90:5	91:4			

Table 7.13

Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])

South Dakota Mathematics 2008 Grade 7

3.1 [2]:	2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]	[2]
7.S [1]:										
7.S. 1 [2]:										
7.S. 1.1 [1]:	28:7 [1.14]	48:7 [1]	52:7 [2]	62:1 [1]						
7.S. 1.2 [2]:	16:7 [2]	17:1 [1]	29:7 [2]	58:7 [2]	66:7 [1.71]	77:6 [2]				
7.S. 2 [1]:										
7.S. 2.1 [1]:	2:7[2]	17:6 [1.33]	33:7 [1.29]	51:7 [1.43]	62:6 [1.33]	69:1 [2]	72:7 [1.29]	89:6 [1.33]		

Table 8.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 8
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
8.A - ALGEBRA	4	5.14	1 2	1 4	20 80	28.57	1.29	YES
8.G - GEOMETRY	2	3	1 2	2 1	66 33	11.86	1.36	YES
8.M - MEASUREMENT	1	2	1 2	1 1	50 50	9.14	1.36	YES
8.N - NUMBER SENSE	3	3	1 2	2 1	66 33	21	2.20	YES
8.S - STATISTICS AND PROBABILITY	2	3	1 2	1 2	33 66	13.43	1.05	YES
Total	12	16.14	1 2	7 9	43 56	84	0	

Table 8.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 8

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
8.A - ALGEBRA	4	5.14	28.57	1.29	32	248	66	30	2	5	YES
8.G - GEOMETRY	2	3	11.86	1.36	15	134	71	25	14	22	YES
8.M - MEASUREMENT	1	2	9.14	1.36	10	99	65	30	26	31	YES
8.N - NUMBER SENSE	3	3	21	2.20	10	134	77	19	13	16	YES
8.S - STATISTICS AND PROBABILITY	2	3	13.43	1.05	13	105	72	32	15	36	YES
Total	12	16.14	84	0	17	25	71	28	12	24	

Table 8.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers

South Dakota Mathematics 2008 Grade 8

Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
8.A - ALGEBRA	4	5.14	28.57	1.29	5.14	0.35	100	0	YES	34	2	0.83	0.04	YES
8.G - GEOMETRY	2	3	11.86	1.36	3	0	100	0	YES	14	2	0.90	0.03	YES
8.M - MEASUREMENT	1	2	9.14	1.36	2	0	100	0	YES	11	2	0.83	0.09	YES
8.N - NUMBER SENSE	3	3	21	2.20	3	0	100	0	YES	25	3	0.89	0.11	YES
8.S - STATISTICS AND PROBABILITY	2	3	13.43	1.05	3	0	100	0	YES	16	1	0.83	0.05	YES
Total	12	16.14	84	0	3.23	1.04	100	0		20	9	0.85	0.08	

Table 8.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 8
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8.A - ALGEBRA	YES	YES	YES	YES
8.G - GEOMETRY	YES	YES	YES	YES
8.M - MEASUREMENT	YES	YES	YES	YES
8.N - NUMBER SENSE	YES	YES	YES	YES
8.S - STATISTICS AND PROBABILITY	YES	YES	YES	YES

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	2
2	2	2	2	2	2	2	1
3	2	1	2	2	2	1	2
4	1	2	2	2	2	3	2
5	1	1	1	1	1	1	1
6	1	1	1	1	1	1	1
7	2	2	1	2	2	1	1
8	1	1	1	1	1	1	1
9	2	2	2	2	2	2	2
10	2	2	1	2	2	2	1
11	1	1	1	1	1	1	1
12	2	1	2	2	2	2	2
16	2	2	2	2	2	2	1
17	1	2	1	1	2	1	2
18	2	1	1	1	2	2	1
19	1	1	1	2	2	2	1
20	1	1	1	1	2	1	1
21	2	1	2	2	2	2	2
22	1	1	1	1	1	1	1
23	1	2	1	1	2	2	2
24	2	1	1	1	1	1	1
25	1	1	1	1	2	1	1
26	2	1	1	2	2	1	1
27	1	1	1	1	2	2	1
28	1	2	1	1	2	1	1
29	2	1	2	2	2	2	2
30	1	1	1	1	1	1	1
31	1	1	1	1	2	1	1
32	2	2	2	2	2	2	1
33	2	2	2	2	2	2	2
34	1	1	1	1	2	1	1
35	2	1	1	1	1	1	1
36	2	2	2	2	2	2	2
37	2	2	2	2	2	2	2
38	2	2	2	2	2	2	1
39	2	1	1	1	2	2	1
43	2	2	2	2	2	2	1
44	2	2	2	2	2	2	2
45	1	1	1	1	1	1	1
46	1	1	1	1	1	1	1
47	1	2	1	1	1	1	1
48	1	1	1	1	2	1	1
49	1	1	1	1	2	1	2
50	1	2	2	2	2	2	2
51	1	1	1	1	1	1	1

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	1	2	2	2	2	2	1
53	1	2	1	1	2	2	2
54	1	2	2	1	2	1	1
55	2	2	2	2	2	2	2
56	1	1	1	1	1	1	1
57	2	2	2	2	2	1	2
58	1	1	1	1	1	1	1
59	2	2	1	1	2	1	2
60	1	2	2	2	2	2	2
61	1	2	2	2	2	2	2
62	2	2	2	2	2	2	2
63	1	1	2	1	1	1	1
64	2	2	2	2	2	2	2
65	1	1	1	1	1	1	1
66	1	2	1	2	1	2	1
67	1	1	1	1	2	1	1
68	1	1	1	1	1	1	1
69	2	2	2	2	2	2	2
70	2	2	2	2	2	2	2
71	1	2	1	1	2	1	1
72	1	2	1	1	1	1	1
73	1	2	1	1	1	1	1
74	2	2	1	1	2	2	1
75	2	2	2	2	2	2	2
76	1	1	1	1	2	1	1
77	1	2	1	1	1	1	1
78	2	2	1	1	2	2	1
79	1	1	1	1	1	1	1
80	2	2	2	2	2	2	1
83	2	2	1	1	2	1	1
84	2	2	2	2	2	2	2
85	1	1	1	1	1	1	1
86	2	1	1	1	1	1	1
87	2	2	2	2	2	2	1
88	2	2	2	2	2	2	2
89	2	2	2	2	2	1	2
90	1	1	1	1	1	1	1
91	1	2	1	1	2	1	1
92	1	1	1	1	1	1	1

Intraclass Correlation: 0.8856
Pairwise Comparison: 0.7477

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	2	8.A.1.1
2	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.2.1	1	8.N.3.1
3	2	8.N.3.1	1	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	1	8.N.3.1	2	8.N.3.1
4	1	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	3	8.S.1.1	2	8.S.1.1
5	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.A.1.1	1	8.N.2.1	1	8.N.1.1
6	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1
7	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1	2	8.S.2.1	2	8.S.2.1	1	8.N.2.1	1	8.S.2.1
8	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.2.1	1	8.N.1.1
9	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1
10	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1
11	1	8.N.2.1	1	8.N.1.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1
12	2	8.S.2.1	1	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2
16	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.N.2.1	1	8.S.2.1
17	1	8.A.2.1	2	8.A.2.1	1	8.A.2.1	1	8.A.2.1	2	8.A.2.1	1	8.A.2.1	2	8.A.2.1
18	2	8.N.3.1	1	8.N.3.1	1	8.N.2.1	1	8.N.3.1	2	8.N.2.1	2	8.N.2.1	1	8.N.2.1
19	1	8.A.4.2	1	8.A.4.2	1	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	1	8.A.4.2
20	1	8.A.1.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	2	8.N.2.1	1	8.N.2.1	1	8.N.2.1
21	2	8.N.3.1	1	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1
22	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1
23	1	8.N.1.1	2	8.A.1.1	1	8.N.1.1	1	8.N.1.1	2	8.N.1.1	2	8.N.2.1	2	8.N.1.1
24	2	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1
25	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.1.1	2	8.N.1.1	1	8.N.2.1	1	8.N.2.1
26	2	8.N.1.1	1	8.N.1.1	1	8.N.1.1	2	8.N.1.1	2	8.A.1.1	1	8.N.1.1	1	8.N.1.1
27	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	2	8.G.1.2	2	8.G.1.2	1	8.G.1.2
28	1	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2
29	2	8.S.1.2	1	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2
30	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1
31	1	8.N.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	2	8.A.2.1	1	8.A.2.1	1	8.A.2.1
32	2	8.M.1.1	2	8.M.1.1	2	8.M.1.1	2	8.M.1.1	2	8.M.1.1	2	8.M.1.1	1	8.M.1.1
33	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1
34	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	2	8.A.2.1	1	8.A.1.1	1	8.A.2.1
35	2	8.M.1.1	1	8.M.1.1	1	8.G.2.1	1	8.G.2.1	1	8.G.2.1	1	8.M.1.1	1	8.G.2.1
36	2	8.A.3.1	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.3.1	2	8.A.4.2
37	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.N.2.1	2	8.S.2.1
38	2	8.A.4.1	2	8.A.4.1	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	1	8.A.4.2

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
39	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	1	8.M.1.2	2	8.M.1.2	2	8.M.1.2	1	8.M.1.2
43	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.M.1.1	1	8.G.2.1
44	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1
45	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.N.2.1	1	8.A.1.1
46	1	8.A.1.1	1	8.A.1.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1
47	1	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	1	8.M.1.2	1	8.M.1.2	1	8.M.1.2
48	1	8.A.4.2	1	8.A.4.2	1	8.A.1	1	8.A.2.1	2	8.A.2.1	1	8.N.1.1	1	8.A.2.1
49	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	2	8.N.1.1	1	8.N.1.1	2	8.N.1.1
50	1	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2
51	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1
52	1	8.A.4.2	2	8.A.4.2	2	8.A.3.1	2	8.A.3.1	2	8.A.3.1	2	8.A.2.1	1	8.A.3.1
53	1	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	2	8.M.1.2	2	8.M.1.2	2	8.M.1.2
54	1	8.G.2.1	2	8.G.2.1	2	8.G.2.1	1	8.G.2.1	2	8.G.2.1	1	8.G.2.1	1	8.G.2.1
55	2	8.A.4.1	2	8.A.4.1	2	8.A.4.1	2	8.A.4.1	2	8.A.4.1	2	8.A.4.1	2	8.A.4.1
56	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
57	2	8.M.1.1	2	8.M.1.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	1	8.M.1.1	2	8.G.2.1
58	1	8.A.2.1	1	8.A.2.1	1	8.A.1.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1	1	8.A.2.1
59	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1	1	8.S.2.1	2	8.S.2.1	1	8.S.2.1	2	8.S.2.1
60	1	8.N.2.1	2	8.N.3.1	2	8.N.2.1	2	8.N.2.1	2	8.N.2.1	2	8.N.2.1	2	8.N.2.1
61	1	8.A.4.2	2	8.A.3.1	2	8.A.4.2	2	8.A.3.1	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2
62	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1
63	1	8.M.1.1	1	8.M.1.1	2	8.G.2.1	1	8.G.2.1	1	8.G.2.1	1	8.M.1.1	1	8.G.2.1
64	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1
65	1	8.N.3.1	1	8.N.3.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1
66	1	8.G.1.1	2	8.G.1.1	1	8.G.1.1	2	8.G.1.1	1	8.G.1.1	2	8.G.1.1	1	8.G.1.1
67	1	8.A.3.1	1	8.A.4.2	1	8.A.3.1	1	8.A.3.1	2	8.A.3.1	1	8.A.3.1	1	8.A.3.1
68	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.2.1
69	2	8.A.4.2	2	8.A.4.1	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2
70	2	8.M.1.1	2	8.G.2.1	2	8.M.1.1	2	8.M.1.1	2	8.M.1.1	2	8.G.2.1	2	8.M.1.1
71	1	8.S.1.1	2	8.S.1.1	1	8.S.1.1	1	8.S.1.1	2	8.S.1.2	1	8.S.1.1	1	8.S.1.1
72	1	8.G.1.1	2	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1	1	8.G.1.1
73	1	8.G.1.2	2	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2
74	2	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	2	8.M.1.2	2	8.M.1.2	1	8.M.1.2
75	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.2.1	2	8.N.3.1
76	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	1	8.A.3.1	2	8.A.3.1	1	8.A.3.1	1	8.A.3.1

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
77	1	8.A.1.1	2	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1
78	2	8.G.1.2	2	8.G.1.2	1	8.G.1.2	1	8.G.1.2	2	8.G.1.2	2	8.G.1.2	1	8.G.1.2
79	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
80	2	8.S.1.2	2	8.S.1.2	2	8.A.4.2	2	8.S.1.2	2	8.S.1.2	2	8.S.1.2	1	8.S.1.2
83	2	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2	2	8.M.1.2	1	8.M.1.2	1	8.M.1.2
84	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1	2	8.A.2.1
85	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1
86	2	8.N.3.1	1	8.N.3.1	1	8.N.3.1	1	8.N.3.1	1	8.N.3.1	1	8.N.3.1	1	8.N.3.1
87	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	2	8.G.2.1	1	8.G.2.1
88	2	8.A.4.1	2	8.A.4.1	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2	2	8.A.4.2
89	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	2	8.N.3.1	1	8.N.2.1	2	8.N.3.1
90	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1	1	8.A.1.1
91	1	8.A.3.1	2	8.A.3.1	1	8.A.3.1	1	8.A.3.1	2	8.A.3.1	1	8.A.3.1	1	8.A.3.1
92	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2	1	8.G.1.2

Objective Pairwise Comparison: 0.8226
Standard Pairwise Comparison: 0.9274

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 8

Low		Medium		High
0		6.391304		7

1 3345065	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1
2 3533624	8.N.2.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
3 3533629	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
4 3531750	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1
5 2177453	8.A.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.2.1
6 2177408	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1
7 2345816	8.N.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
8 2177463	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.2.1
9 3531487	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
10 3533636	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
11 2177452	8.N.1.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1
12 3533635	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.2.1
16 3530922	8.N.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
17 2177413	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
18 3533623	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.3.1	8.N.3.1	8.N.3.1
19 2107302	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
20 3531765	8.A.1.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1
21 3531759	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
22 3531490	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1
23 2177460	8.A.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.2.1
24 3531486	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
25 3531763	8.N.1.1	8.N.1.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1
26 3531746	8.A.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1
27 2177425	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2
28 3531743	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
29 3533625	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2
30 3531761	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1
31 3531483	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.N.2.1
32 3356849	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1
33 3531473	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1
34 3531484	8.A.1.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
35 3541686	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.M.1.1	8.M.1.1	8.M.1.1
36 3531477	8.A.3.1	8.A.3.1	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
37 3530909	8.N.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
38 2345821	8.A.4.1	8.A.4.1	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
39 2177442	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
43 3344902	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.M.1.1
44 3531749	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1
45 3531482	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.N.2.1
46 3531762	8.A.1.1	8.A.1.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1
47 3531744	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
48 2177407	8.A.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.4.2	8.A.4.2	8.N.1.1

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 8

49 2345818	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1
50 3531753	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2
51 3345061	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1
52 3531489	8.A.2.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.4.2	8.A.4.2
53 2177432	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
54 3348342	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1
55 3332350	8.A.4.1	8.A.4.1	8.A.4.1	8.A.4.1	8.A.4.1	8.A.4.1	8.A.4.1
56 3533619	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1
57 3332362	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.M.1.1	8.M.1.1	8.M.1.1
58 3537650	8.A.1.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
59 3533637	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
60 3533626	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.3.1
61 3531479	8.A.3.1	8.A.3.1	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
62 3533639	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
63 3533628	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.M.1.1	8.M.1.1	8.M.1.1
64 3531757	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
65 3531760	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.3.1	8.N.3.1
66 3332356	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1
67 3531470	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.4.2
68 3531481	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.2.1
69 3332353	8.A.4.1	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
70 3531493	8.G.2.1	8.G.2.1	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1	8.M.1.1
71 3533631	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.2
72 3531491	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1	8.G.1.1
73 3531474	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2
74 3533615	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
75 2345824	8.N.2.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
76 3531471	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1
77 3344901	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1
78 3332359	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2
79 3533621	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1
80 3531752	8.A.4.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2	8.S.1.2
83 3533618	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2	8.M.1.2
84 3531485	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1	8.A.2.1
85 3345068	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1
86 3533627	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
87 3345073	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1	8.G.2.1
88 2177466	8.A.4.1	8.A.4.1	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2	8.A.4.2
89 2177414	8.N.2.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1	8.N.3.1
90 3531480	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1	8.A.1.1
91 2177418	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1	8.A.3.1
92 3531475	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2	8.G.1.2

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 8

Low		Medium		High
0		17.29412		55

8.A																				
8.A.1	48																			
8.A.1.1	11	11	11	11	11	11	11	5	20	23	26	34	45	45	45	45	45	45	46	46
	51	51	51	51	51	51	51	58	68	68	68	68	68	68	77	77	77	77	77	
	77	77	85	85	85	85	85	85	85	90	90	90	90	90	90	90				
8.A.2																				
8.A.2.1	99	99	99	99	99	99	99	17	17	17	17	17	17	17	24	24	24	24	24	24
	24	31	31	31	31	31	31	34	34	34	34	34	34	48	48	48	52	58	58	
	58	58	58	58	68	84	84	84	84	84	84	84								
8.A.3																				
8.A.3.1	66	66	66	66	66	66	66	33	33	33	33	33	33	33	36	36	52	52	52	52
	61	61	67	67	67	67	67	67	76	76	76	76	76	76	76	91	91	91	91	
	91	91	91																	
8.A.4																				
8.A.4.1	38	38	55	55	55	55	55	55	55	69	88	88								
8.A.4.2	19	19	19	19	19	19	19	36	36	36	36	36	38	38	38	38	38	48	48	52
	52	61	61	61	61	61	67	69	69	69	69	69	69	80	88	88	88	88	88	
8.G																				
8.G.1																				
8.G.1.1	22	22	22	22	22	22	22	66	66	66	66	66	66	66	72	72	72	72	72	72
	72																			
8.G.1.2	27	27	27	27	27	27	27	73	73	73	73	73	73	73	78	78	78	78	78	78

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 8

	78	92	92	92	92	92	92	92												
8.G.2																				
8.G.2.1	35	35	35	35	43	43	43	43	43	43	54	54	54	54	54	54	54	57	57	57
	57	63	63	63	63	70	70	87	87	87	87	87	87	87						
8.M																				
8.M.1																				
8.M.1.1	32	32	32	32	32	32	32	35	35	35	43	57	57	57	63	63	63	70	70	70
	70	70																		
8.M.1.2	28	28	28	28	28	28	28	39	39	39	39	39	39	39	47	47	47	47	47	47
	47	53	53	53	53	53	53	53	74	74	74	74	74	74	74	83	83	83	83	
	83	83	83																	
8.N																				
8.N.1																				
8.N.1.1	5	5	5	5	5	8	8	8	8	8	8	11	23	23	23	23	23	25	25	26
	26	26	26	26	26	48	49	49	49	49	49	49	49	56	56	56	56	56	56	
	56	79	79	79	79	79	79	79												
8.N.2																				
8.N.2.1	2	5	7	8	11	11	11	11	11	11	16	18	18	18	18	20	20	20	20	20
	20	23	25	25	25	25	25	30	30	30	30	30	30	30	31	37	45	46	46	
	46	46	46	60	60	60	60	60	60	65	65	65	65	65	75	89				
8.N.3																				
8.N.3.1	2	2	2	2	2	2	3	3	3	3	3	3	3	18	18	18	21	21	21	21
	21	21	21	60	65	65	75	75	75	75	75	75	86	86	86	86	86	86	86	
	89	89	89	89	89	89														
8.S																				
8.S.1																				

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 8

8.S.1.1	4	4	4	4	4	4	4	44	44	44	44	44	44	44	71	71	71	71	71	71
8.S.1.2	12	12	12	12	12	12	29	29	29	29	29	29	29	50	50	50	50	50	50	50
	71	80	80	80	80	80	80													
8.S.2																				
8.S.2.1	7	7	7	7	7	7	10	10	10	10	10	10	10	12	16	16	16	16	16	16
	37	37	37	37	37	37	59	59	59	59	59	59	59	62	62	62	62	62	62	
	62	64	64	64	64	64	64	64												

Table 8.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 8

Low		Medium		High
1		3		7

8.A													
8.A.1	48:1												
8.A.1.1	1:7	5:1	20:1	23:1	26:1	34:1	45:6	46:2	51:7	58:1	68:6	77:7	85:7
	90:7												
8.A.2													
8.A.2.1	9:7	17:7	24:7	31:6	34:6	48:3	52:1	58:6	68:1	84:7			
8.A.3													
8.A.3.1	6:7	33:7	36:2	52:4	61:2	67:6	76:7	91:7					
8.A.4													
8.A.4.1	38:2	55:7	69:1	88:2									
8.A.4.2	19:7	36:5	38:5	48:2	52:2	61:5	67:1	69:6	80:1	88:5			
8.G													
8.G.1													
8.G.1.1	22:7	66:7	72:7										
8.G.1.2	27:7	73:7	78:7	92:7									
8.G.2													
8.G.2.1	35:4	43:6	54:7	57:4	63:4	70:2	87:7						
8.M													
8.M.1													
8.M.1.1	32:7	35:3	43:1	57:3	63:3	70:5							
8.M.1.2	28:7	39:7	47:7	53:7	74:7	83:7							
8.N													
8.N.1													
8.N.1.1	5:5	8:6	11:1	23:5	25:2	26:6	48:1	49:7	56:7	79:7			
8.N.2													
8.N.2.1	2:1	5:1	7:1	8:1	11:6	16:1	18:4	20:6	23:1	25:5	30:7	31:1	37:1
	45:1	46:5	60:6	65:5	75:1	89:1							
8.N.3													
8.N.3.1	2:6	3:7	18:3	21:7	60:1	65:2	75:6	86:7	89:6				
8.S													
8.S.1													
8.S.1.1	4:7	44:7	71:6										
8.S.1.2	12:6	29:7	50:7	71:1	80:6								
8.S.2													
8.S.2.1	7:6	10:7	12:1	16:6	37:6	59:7	62:7	64:7					

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 8

Low		Medium		High
1		3		7

1 3345065	8.A.1.1:7			
2 3533624	8.N.2.1:1	8.N.3.1:6		
3 3533629	8.N.3.1:7			
4 3531750	8.S.1.1:7			
5 2177453	8.A.1.1:1	8.N.1.1:5	8.N.2.1:1	
6 2177408	8.A.3.1:7			
7 2345816	8.N.2.1:1	8.S.2.1:6		
8 2177463	8.N.1.1:6	8.N.2.1:1		
9 3531487	8.A.2.1:7			
10 3533636	8.S.2.1:7			
11 2177452	8.N.1.1:1	8.N.2.1:6		
12 3533635	8.S.1.2:6	8.S.2.1:1		
16 3530922	8.N.2.1:1	8.S.2.1:6		
17 2177413	8.A.2.1:7			
18 3533623	8.N.2.1:4	8.N.3.1:3		
19 2107302	8.A.4.2:7			
20 3531765	8.A.1.1:1	8.N.2.1:6		
21 3531759	8.N.3.1:7			
22 3531490	8.G.1.1:7			
23 2177460	8.A.1.1:1	8.N.1.1:5	8.N.2.1:1	
24 3531486	8.A.2.1:7			
25 3531763	8.N.1.1:2	8.N.2.1:5		
26 3531746	8.A.1.1:1	8.N.1.1:6		
27 2177425	8.G.1.2:7			
28 3531743	8.M.1.2:7			
29 3533625	8.S.1.2:7			
30 3531761	8.N.2.1:7			
31 3531483	8.A.2.1:6	8.N.2.1:1		
32 3356849	8.M.1.1:7			
33 3531473	8.A.3.1:7			
34 3531484	8.A.1.1:1	8.A.2.1:6		
35 3541686	8.G.2.1:4	8.M.1.1:3		
36 3531477	8.A.3.1:2	8.A.4.2:5		
37 3530909	8.N.2.1:1	8.S.2.1:6		
38 2345821	8.A.4.1:2	8.A.4.2:5		
39 2177442	8.M.1.2:7			
43 3344902	8.G.2.1:6	8.M.1.1:1		
44 3531749	8.S.1.1:7			
45 3531482	8.A.1.1:6	8.N.2.1:1		
46 3531762	8.A.1.1:2	8.N.2.1:5		
47 3531744	8.M.1.2:7			
48 2177407	8.A.1:1	8.A.2.1:3	8.A.4.2:2	8.N.1.1:1

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 8

49 2345818	8.N.1.1:7		
50 3531753	8.S.1.2:7		
51 3345061	8.A.1.1:7		
52 3531489	8.A.2.1:1	8.A.3.1:4	8.A.4.2:2
53 2177432	8.M.1.2:7		
54 3348342	8.G.2.1:7		
55 3332350	8.A.4.1:7		
56 3533619	8.N.1.1:7		
57 3332362	8.G.2.1:4	8.M.1.1:3	
58 3537650	8.A.1.1:1	8.A.2.1:6	
59 3533637	8.S.2.1:7		
60 3533626	8.N.2.1:6	8.N.3.1:1	
61 3531479	8.A.3.1:2	8.A.4.2:5	
62 3533639	8.S.2.1:7		
63 3533628	8.G.2.1:4	8.M.1.1:3	
64 3531757	8.S.2.1:7		
65 3531760	8.N.2.1:5	8.N.3.1:2	
66 3332356	8.G.1.1:7		
67 3531470	8.A.3.1:6	8.A.4.2:1	
68 3531481	8.A.1.1:6	8.A.2.1:1	
69 3332353	8.A.4.1:1	8.A.4.2:6	
70 3531493	8.G.2.1:2	8.M.1.1:5	
71 3533631	8.S.1.1:6	8.S.1.2:1	
72 3531491	8.G.1.1:7		
73 3531474	8.G.1.2:7		
74 3533615	8.M.1.2:7		
75 2345824	8.N.2.1:1	8.N.3.1:6	
76 3531471	8.A.3.1:7		
77 3344901	8.A.1.1:7		
78 3332359	8.G.1.2:7		
79 3533621	8.N.1.1:7		
80 3531752	8.A.4.2:1	8.S.1.2:6	
83 3533618	8.M.1.2:7		
84 3531485	8.A.2.1:7		
85 3345068	8.A.1.1:7		
86 3533627	8.N.3.1:7		
87 3345073	8.G.2.1:7		
88 2177466	8.A.4.1:2	8.A.4.2:5	
89 2177414	8.N.2.1:1	8.N.3.1:6	
90 3531480	8.A.1.1:7		
91 2177418	8.A.3.1:7		
92 3531475	8.G.1.2:7		

Table 8.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 8

Low DOK		Matched DOK		High DOK
1		3		7

8.A [2]:													
8.A.1 [1]:	48:1 [1]												
8.A.1.1 [1]:	1:7[1.14]	5:1[1]	20:1 [1]	23:1 [2]	26:1 [2]	34:1 [1]	45:6 [1]	46:2 [1]	51:7 [1]	58:1 [1]	68:6 [1]	77:7 [1.14]	85:7 [1]
	90:7 [1]												
8.A.2 [2]:													
8.A.2.1 [2]:	9:7[2]	17:7 [1.43]	24:7 [1.14]	31:6 [1.17]	34:6 [1.17]	48:3 [1.33]	52:1 [2]	58:6 [1]	68:1 [1]	84:7 [2]			
8.A.3 [2]:													
8.A.3.1 [2]:	6:7[1]	33:7 [2]	36:2 [2]	52:4 [1.75]	61:2 [2]	67:6 [1.17]	76:7 [1.14]	91:7 [1.29]					
8.A.4 [2]:													
8.A.4.1 [2]:	38:2 [2]	55:7 [2]	69:1 [2]	88:2 [2]									
8.A.4.2 [2]:	19:7 [1.43]	36:5 [2]	38:5 [1.8]	48:2 [1]	52:2 [1.5]	61:5 [1.8]	67:1 [1]	69:6 [2]	80:1 [2]	88:5 [2]			
8.G [1]:													
8.G.1 [1]:													
8.G.1.1 [1]:	22:7 [1]	66:7 [1.43]	72:7 [1.14]										

Table 8.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 8

8.G.1.2 [1]:	27:7 [1.29]	73:7 [1.14]	78:7 [1.57]	92:7 [1]									
8.G.2 [2]:													
8.G.2.1 [2]:	35:4 [1]	43:6 [1.83]	54:7 [1.43]	57:4 [2]	63:4 [1.25]	70:2 [2]	87:7 [1.86]						
8.M [2]:													
8.M.1 [2]:													
8.M.1.1 [2]:	32:7 [1.86]	35:3 [1.33]	43:1 [2]	57:3 [1.67]	63:3 [1]	70:5 [2]							
8.M.1.2 [1]:	28:7 [1.29]	39:7 [1.43]	47:7 [1.14]	53:7 [1.57]	74:7 [1.57]	83:7 [1.43]							
8.N [1]:													
8.N.1 [1]:													
8.N.1.1 [1]:	5:5[1]	8:6[1]	11:1 [1]	23:5 [1.4]	25:2 [1.5]	26:6 [1.33]	48:1 [1]	49:7 [1.29]	56:7 [1]	79:7 [1]			
8.N.2 [1]:													
8.N.2.1 [1]:	2:1[2]	5:1[1]	7:1[1]	8:1[1]	11:6 [1]	16:1 [2]	18:4 [1.5]	20:6 [1.17]	23:1 [2]	25:5 [1]	30:7 [1]	31:1 [1]	37:1 [2]
	45:1 [1]	46:5 [1]	60:6 [1.83]	65:5 [1]	75:1 [2]	89:1 [1]							
8.N.3 [2]:													
8.N.3.1 [2]:	2:6[1.83]	3:7[1.71]	18:3 [1.33]	21:7 [1.86]	60:1 [2]	65:2 [1]	75:6 [2]	86:7 [1.14]	89:6 [2]				
8.S													

Table 8.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 8

[2]:								
8.S.1 [2]:								
8.S.1.1 [1]:	4:7[2]	44:7 [2]	71:6 [1.17]					
8.S.1.2 [2]:	12:6 [1.83]	29:7 [1.86]	50:7 [1.86]	71:1 [2]	80:6 [1.83]			
8.S.2 [2]:								
8.S.2.1 [2]:	7:6[1.67]	10:7 [1.71]	12:1 [2]	16:6 [1.83]	37:6 [2]	59:7 [1.57]	62:7 [2]	64:7 [2]

Table 11.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 11
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
9-12.A - ALGEBRA	4	6.86	1 2	2 4	33 66	28.14	1.12	YES
9-12.G - GEOMETRY	2	5	1 2	1 4	20 80	14	0.93	YES
9-12.M - MEASUREMENT	1	3.29	1 2	2 1	66 33	6.57	0.73	YES
9-12.N - NUMBER SENSE	3	5.14	1 2 3	3 1 1	60 20 20	21.57	1.92	YES
9-12.S - STATISTICS AND PROBABILITY	2	5.43	1 2 3	1 2 2	20 40 40	13.71	0.45	YES
Total	12	25.71	1 2 3	9 12 3	37 50 12	84	0	

Table 11.2a

Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)

South Dakota Mathematics 2008 Grade 11

Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
9-12.A - ALGEBRA	4	6.86	28.14	1.12	56	289	38	36	6	20	WEAK
9-12.G - GEOMETRY	2	5	14	0.93	40	133	58	36	2	17	YES
9-12.M - MEASUREMENT	1	3.29	6.57	0.73	28	116	42	34	30	41	YES
9-12.N - NUMBER SENSE	3	5.14	21.57	1.92	17	150	66	37	18	23	YES
9-12.S - STATISTICS AND PROBABILITY	2	5.43	13.71	0.45	54	170	45	42	1	16	WEAK
Total	12	25.71	84	0	41	42	49	39	10	25	

Table 11.3

Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers

South Dakota Mathematics 2008 Grade 11

Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
9-12.A - ALGEBRA	4	6.86	28.14	1.12	6.86	0.35	100	0	YES	34	1	0.81	0.07	YES
9-12.G - GEOMETRY	2	5	14	0.93	5	0	100	0	YES	17	1	0.88	0.01	YES
9-12.M - MEASUREMENT	1	3.29	6.57	0.73	2.71	0.88	81	16	YES	8	1	0.92	0.08	YES
9-12.N - NUMBER SENSE	3	5.14	21.57	1.92	5	0.53	97	7	YES	26	2	0.71	0.09	YES
9-12.S - STATISTICS AND PROBABILITY	2	5.43	13.71	0.45	5.14	0.64	95	8	YES	16	1	0.69	0.05	WEAK
Total	12	25.71	84	0	4.94	1.43	95	11		20	9	0.80	0.11	

Table 11.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Mathematics 2008 Grade 11
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
9-12.A - ALGEBRA	YES	WEAK	YES	YES
9-12.G - GEOMETRY	YES	YES	YES	YES
9-12.M - MEASUREMENT	YES	YES	YES	YES
9-12.N - NUMBER SENSE	YES	YES	YES	YES
9-12.S - STATISTICS AND PROBABILITY	YES	WEAK	YES	WEAK

Table 11.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 11

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	1	1	1	1	1	1	1
3	2	2	1	2	2	2	1
4	2	2	2	1	1	1	2
5	1	1	1	1	1	1	1
6	2	2	1	1	2	1	1
7	2	2	2	2	2	2	1
8	2	2	1	1	1	2	1
9	1	2	1	2	2	2	1
10	2	2	1	2	2	1	1
11	1	2	1	1	1	2	1
12	1	1	1	1	1	1	1
16	2	2	2	2	1	2	1
17	1	2	2	1	2	1	2
18	1	1	1	2	2	1	2
19	1	1	1	1	2	2	1
20	1	1	1	1	1	1	1
21	1	1	1	1	1	1	1
22	1	2	1	1	2	1	1
23	2	2	2	2	2	2	2
24	1	1	1	1	2	1	1
25	1	1	1	1	1	2	1
26	1	2	2	1	1	2	1
27	2	2	2	2	2	2	2
28	1	1	1	1	1	1	1
29	1	2	1	1	2	1	1
30	2	1	2	2	2	2	2
31	1	1	1	1	1	1	1
32	2	2	2	2	2	2	2
33	1	1	1	1	2	1	1
34	2	2	2	2	2	2	1
35	1	1	1	1	2	1	1
36	2	2	2	2	2	2	1
37	1	1	2	1	2	1	2
38	2	2	2	1	2	2	2
39	1	1	1	1	2	2	1
43	2	2	2	1	2	2	1
44	1	1	2	1	2	1	2
45	1	1	1	1	1	1	1
46	2	2	2	2	2	2	2
47	1	1	1	1	2	1	1
48	2	2	1	1	2	2	1
49	1	2	1	1	2	1	1
50	1	1	1	2	2	2	1
51	2	2	1	2	2	2	1

Table 11.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Mathematics 2008 Grade 11

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
52	1	1	2	1	1	1	1
53	1	1	1	1	2	1	1
54	2	1	1	2	2	1	2
55	2	2	1	1	2	1	1
56	2	2	1	1	2	2	1
57	1	1	1	1	1	1	1
58	2	1	1	1	2	2	1
59	2	2	2	1	2	2	1
60	1	1	1	1	2	1	1
61	1	1	1	1	1	1	1
62	1	1	1	1	2	1	1
63	2	2	1	2	1	2	1
64	1	1	1	1	1	1	1
65	2	2	1	2	2	2	1
66	2	2	2	2	2	1	1
67	1	1	2	1	2	2	1
68	2	2	2	2	2	1	2
69	1	1	1	1	1	1	1
70	1	1	1	1	2	1	1
71	1	1	1	1	1	1	1
72	2	2	1	2	2	2	1
73	1	1	1	1	1	1	1
74	2	2	2	2	2	2	2
75	1	1	1	1	1	1	1
76	2	1	2	1	2	2	2
77	2	2	2	1	2	2	2
78	1	1	2	1	2	1	2
79	1	1	1	1	2	1	1
80	2	2	2	2	2	2	2
83	2	2	2	2	2	2	1
84	1	2	1	1	1	2	1
85	2	2	1	2	2	3	1
86	1	1	1	1	2	1	1
87	2	1	1	1	2	1	1
88	1	1	1	1	2	2	1
89	1	1	1	1	1	1	1
90	2	2	2	2	2	1	2
91	2	2	1	1	1	1	2
92	1	1	1	2	2	1	1

Intraclass Correlation: 0.8093
Pairwise Comparison: 0.6769

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	S1Obj5	DOK6	PObj6
1	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.4.1		1	9-12.A.2.2
2	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1		1	9-12.A.4.1
3	2	9-12.M.1.1	2	9-12.M.1.1	1	9-12.M.1.1	2	9-12.M.1.1	2	9-12.M.1.1	2	9-12.M.1.1		1	9-12.M.1.1
4	2	9-12.A.2.2	2	9-12.A.2.2	2	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2		2	9-12.A.2.2
5	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1		1	9-12.A.1.1
6	2	9-12.A.2.1	2	9-12.A.2.1	1	9-12.A.2.1	1	9-12.A.2.1	2	9-12.A.2.1	1	9-12.A.2.1		1	9-12.A.2.1
7	2	9-12.A.4.1	2	9-12.A.4.1	2	9-12.A.2	2	9-12.A.2.1	2	9-12.A.2	2	9-12.A.3.1		1	9-12.A.2
8	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.2	2	9-12.S.1.2		1	9-12.S.1.2
9	1	9-12.M.1.2	2	9-12.N.3.2	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.M.1.2		1	9-12.N.2.1
10	2	9-12.S.2.2	2	9-12.S.2.2	1	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.2.2	1	9-12.S.2.2		1	9-12.S.2.2
11	1	9-12.A.4.1	2	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	2	9-12.A.4.1		1	9-12.A.4.1
12	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1		1	9-12.G.1.1
16	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.1	2	9-12.S.1.2		1	9-12.S.1.1
17	1	9-12.G.1.1	2	9-12.G.1.1	2	9-12.G.1.1	1	9-12.G.1.1	2	9-12.G.1.1	1	9-12.G.1.1		2	9-12.G.1.1
18	1	9-12.N.1.2	1	9-12.N.1.2	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	1	9-12.G.2.1		2	9-12.N.2.1
19	1	9-12.N.1.2	1	9-12.N.1.2	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1		1	9-12.N.2.1
20	1	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.1	1	9-12.S.1.2		1	9-12.S.1.2
21	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1	1	9-12.G.1.1		1	9-12.G.1.1
22	1	9-12.N.1.1	2	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.N.2.1	1	9-12.A.1.1		1	9-12.N.2.1
23	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3		2	9-12.N.3.1
24	1	9-12.A.2.1	1	9-12.A.2.1	1	9-12.A.2.1	1	9-12.A.2.1	2	9-12.A.2.1	1	9-12.A.2.1		1	9-12.A.2.1
25	1	9-12.N.1.2	1	9-12.N.1.2	1	9-12.N.1.2	1	9-12.N.1.2	1	9-12.N.1.2	2	9-12.N.1.2		1	9-12.N.1.2
26	1	9-12.A.4.1	2	9-12.A.4.1	2	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	2	9-12.A.4.1		1	9-12.A.4.1
27	2	9-12.S.1.1	2	9-12.S.2.2	2	9-12.S.1.1	2	9-12.S.1.1	2	9-12.S.1.1	2	9-12.S.1.1		2	9-12.S.1.1
28	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1		1	9-12.A.1.1
29	1	9-12.M.1.3	2	9-12.M.1.3	1	9-12.M.1.3	1	9-12.M.1.3	2	9-12.M.1.3	1	9-12.M.1.3		1	9-12.M.1.3
30	2	9-12.N.3.1	1	9-12.N.1.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1		2	9-12.N.3.1
31	1	9-12.M.1.1	1	9-12.M.1.2	1	9-12.M.1.1	1	9-12.M.1.1	1	9-12.M.1.1	1	9-12.M.1.1		1	9-12.M.1.1
32	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1		2	9-12.G.2.1
33	1	9-12.A.2.1	1	9-12.A.1.1	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.A.1.1	1	9-12.A.1.1		1	9-12.A.2.1
34	2	9-12.N.3.1	2	9-12.N.3.2	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1		1	9-12.N.3.1
35	1	9-12.A.3.1	1	9-12.A.3.1	1	9-12.A.3.1	1	9-12.A.3.1	2	9-12.A.3.1	1	9-12.A.3.1		1	9-12.A.3.1
36	2	9-12.N.3.1	2	9-12.N.3.2	2	9-12.N.3.2	2	9-12.N.3.2	2	9-12.N.3.2	2	9-12.N.3.2		1	9-12.N.3.1
37	1	9-12.A.2.2	1	9-12.A.2.2	2	9-12.A.2.2	1	9-12.A.2.2	2	9-12.A.2.2	1	9-12.A.2.2		2	9-12.A.2.2
38	2	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.2.2	1	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.2.2		2	9-12.S.2.2
39	1	9-12.A.3.1	1	9-12.A.4.1	1	9-12.A.3.1	1	9-12.A.3.1	2	9-12.A.4.1	2	9-12.A.3.1		1	9-12.A.3.1
43	2	9-12.M.1.3	2	9-12.M.1.3	2	9-12.M.1.3	1	9-12.M.1.3	2	9-12.M.1.3	2	9-12.M.1.3		1	9-12.M.1.3
44	1	9-12.N.1.2	1	9-12.N.1.2	2	9-12.N.1.2	1	9-12.N.1.2	2	9-12.N.1.2	1	9-12.N.1.2		2	9-12.N.1.1
45	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1		1	9-12.N.1.1
46	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1		2	9-12.N.3.1
47	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	2	9-12.A.3.1	1	9-12.A.4.1		1	9-12.A.4.1
48	2	9-12.G.2.3	2	9-12.G.2.3	1	9-12.G.2.3	1	9-12.G.2.3	2	9-12.G.2.3	2	9-12.G.2.3		1	9-12.G.2.3
49	1	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.2	1	9-12.S.1.2	2	9-12.S.1.1	1	9-12.S.1.2		1	9-12.S.1.2
50	1	9-12.N.3.2	1	9-12.N.3.2	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.3.2		1	9-12.N.2.1

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Mathematics 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	S1Obj5	DOK6	PObj6
51	2	9-12.S.2.2	2	9-12.S.2.2	1	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.2		1	9-12.S.2.2
52	1	9-12.A.1.1	1	9-12.A.1.1	2	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1		1	9-12.A.1.1
53	1	9-12.G.2.2	1	9-12.G.2.2	1	9-12.G.2.2	1	9-12.G.2.2	2	9-12.G.2.2	1	9-12.G.2.2		1	9-12.G.2.2
54	2	9-12.G.2.3	1	9-12.G.2.3	1	9-12.G.2.3	2	9-12.G.2.3	2	9-12.G.2.3	1	9-12.G.2.3		2	9-12.G.2.3
55	2	9-12.A.3.2	2	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2	2	9-12.A.3.2	1	9-12.A.3.2		1	9-12.A.3.2
56	2	9-12.S.2.2	2	9-12.S.2.2	1	9-12.S.2.2	1	9-12.S.2.2	2	9-12.S.2.2	2	9-12.S.1.1		1	9-12.S.2.2
57	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.1		1	9-12.A.1.1
58	2	9-12.A.3.2	1	9-12.A.4.1	1	9-12.A.3.2	1	9-12.A.3.2	2	9-12.A.3.2	2	9-12.A.4.1		1	9-12.A.3.2
59	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	1	9-12.N.3.1	2	9-12.N.3.1	2	9-12.G.2.3		1	9-12.N.3.1
60	1	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.N.2.1	1	9-12.N.2.1		1	9-12.N.2.1
61	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1	1	9-12.A.4.1		1	9-12.A.4.1
62	1	9-12.A.2.1	1	9-12.A.2.1	1	9-12.G.2.3	1	9-12.G.2.3	2	9-12.G.2.3	1	9-12.G.2.3		1	9-12.G.2.3
63	2	9-12.N.3.2	2	9-12.N.3.2	1	9-12.N.2.1	2	9-12.N.2.1	1	9-12.N.2.1	2	9-12.M.1.1		1	9-12.N.2.1
64	1	9-12.A.3	1	9-12.A.3	1	9-12.S.1.3	1	9-12.S.1.3	1	9-12.S.1.3	1	9-12.S.1.1		1	9-12.S.1.3
65	2	9-12.N.3.2	2	9-12.N.3.2	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.3.2		1	9-12.N.2.1
66	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.2		1	9-12.S.1.2
67	1	9-12.G.1.2	1	9-12.G.1.2	2	9-12.G.1.2	1	9-12.G.1.2	2	9-12.G.1.1	2	9-12.G.1.2		1	9-12.G.1.2
68	2	9-12.N.1.2	2	9-12.N.1.2	2	9-12.A.1.1	2	9-12.A.1.1	2	9-12.A.1.1	1	9-12.A.1.1		2	9-12.A.1.1
69	1	9-12.N.2.1	1	9-12.A.1.1	1	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1		1	9-12.N.2.1
70	1	9-12.G.2.2	1	9-12.G.2.2	1	9-12.G.2.2	1	9-12.G.2.2	2	9-12.G.2.2	1	9-12.G.2.2		1	9-12.G.2.2
71	1	9-12.M.1.2	1	9-12.M.1.1	1	9-12.M.1.1	1	9-12.M.1.1	1	9-12.M.1.1	1	9-12.M.1.1		1	9-12.M.1.1
72	2	9-12.N.1.1	2	9-12.N.3.2	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1		1	9-12.N.2.1
73	1	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2		1	9-12.A.3.2
74	2	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2		2	9-12.G.1.2
75	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2	1	9-12.A.2.2		1	9-12.A.2.2
76	2	9-12.N.3.1	1	9-12.N.3.1	2	9-12.N.3.1	1	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1		2	9-12.N.3.1
77	2	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2	1	9-12.G.1.2	2	9-12.G.1.2	2	9-12.G.1.2		2	9-12.G.1.2
78	1	9-12.A.1.1	1	9-12.A.1.1	2	9-12.A.1.1	1	9-12.A.1.1	2	9-12.A.1.1	1	9-12.A.1.1		2	9-12.A.1.1
79	1	9-12.S.2.1	1	9-12.S.2.1	1	9-12.S.2.1	1	9-12.S.2.1	2	9-12.S.2.1	1	9-12.S.2.1		1	9-12.S.2.2
80	2	9-12.S.1.3	2	9-12.S.1.3	2	9-12.S.1.3	2	9-12.S.1.3	2	9-12.S.1.1	2	9-12.S.1.3		2	9-12.S.1.3
83	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1	2	9-12.G.2.1		1	9-12.G.2.1
84	1	9-12.A.3.1	2	9-12.A.4.1	1	9-12.A.3.1	1	9-12.A.3.1	1	9-12.A.3.1	2	9-12.A.3.1		1	9-12.A.3.1
85	2	9-12.M.1	2	9-12.M.1	1	9-12.M.1.3	2	9-12.M.1.3	2	9-12.M.1.3	3	9-12.M.1.3		1	9-12.M.1.3
86	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	2	9-12.N.1.1	1	9-12.N.1.1		1	9-12.N.1.1
87	2	9-12.G.1.2	1	9-12.G.1.2	1	9-12.G.1.2	1	9-12.G.1.2	2	9-12.G.1.2	1	9-12.G.1.2		1	9-12.G.1.2
88	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.2.1	1	9-12.A.2.1	2	9-12.A.2.1	2	9-12.A.2.1	9-12.A.1.1	1	9-12.A.2.1
89	1	9-12.A.1.1	1	9-12.A.1.1	1	9-12.A.2.1	1	9-12.A.2.1	1	9-12.M.1.3	1	9-12.A.1.1		1	9-12.A.2.1
90	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	2	9-12.N.3.1	1	9-12.N.3.1		2	9-12.N.3.1
91	2	9-12.S.2	2	9-12.S.2	1	9-12.S.2.2	1	9-12.S.2.2	1	9-12.S.2.2	1	9-12.S.2.2		2	9-12.S.2.2
92	1	9-12.A.3.2	1	9-12.A.3.2	1	9-12.A.3.2	2	9-12.A.4.1	2	9-12.A.4.1	1			1	9-12.A.3.2

Objective Pairwise Comparison: 0.7834
Standard Pairwise Comparison: 0.9511

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 11

Low		Medium		High
0		6.391304		8

1 3525898	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.4.1
2 3525665	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1
3 3525678	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1
4 3525658	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2
5 3430129	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1
6 3344974	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1
7 3525899	9-12.A.2	9-12.A.2	9-12.A.2	9-12.A.2.1	9-12.A.3.1	9-12.A.4.1	9-12.A.4.1
8 3525693	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
9 3525682	9-12.M.1.2	9-12.M.1.2	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.3.2
10 3430158	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2
11 2177524	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1
12 3547830	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1
16 3525911	9-12.S.1.1	9-12.S.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
17 3525880	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1
18 2177518	9-12.G.2.1	9-12.N.1.2	9-12.N.1.2	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
19 3344967	9-12.N.1.2	9-12.N.1.2	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
20 3525694	9-12.S.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
21 3547831	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1	9-12.G.1.1
22 3525907	9-12.A.1.1	9-12.N.1.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
23 3344958	9-12.N.3	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 11

24 3525657	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1
25 3525906	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2
26 2177525	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1
27 3525916	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.2.2
28 3525653	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1
29 3525893	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3
30 3344964	9-12.N.1.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1
31 3525679	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.2
32 3525672	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1
33 2177517	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.2.1	9-12.A.2.1	9-12.N.2.1	9-12.N.2.1
34 3525919	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.2
35 3525660	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1
36 3525909	9-12.N.3.1	9-12.N.3.1	9-12.N.3.2	9-12.N.3.2	9-12.N.3.2	9-12.N.3.2	9-12.N.3.2
37 3344977	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2
38 3525915	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2
39 2177529	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.4.1	9-12.A.4.1
43 3541066	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3
44 3547835	9-12.N.1.1	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2
45 3547836	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1
46 3525687	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1
47 3525666	9-12.A.3.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1
48 3525889	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 11

49 3430149	9-12.S.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
50 3344961	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.3.2	9-12.N.3.2	9-12.N.3.2
51 3525914	9-12.S.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2
52 2177501	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1
53 3529400	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2
54 3525675	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3
55 3525905	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2
56 3525697	9-12.S.1.1	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2
57 3525656	9-12.A.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1
58 3430134	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.4.1	9-12.A.4.1
59 3344963	9-12.G.2.3	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1
60 3525908	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
61 3547833	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1	9-12.A.4.1
62 3525891	9-12.A.2.1	9-12.A.2.1	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3	9-12.G.2.3
63 3525917	9-12.M.1.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.3.2	9-12.N.3.2
64 3430148	9-12.A.3	9-12.A.3	9-12.S.1.1	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3
65 3525659	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.3.2	9-12.N.3.2	9-12.N.3.2
66 3525910	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
67 3525885	9-12.G.1.1	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2
68 3430145	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.N.1.2	9-12.N.1.2
69 3525686	9-12.A.1.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
70 3525674	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2	9-12.G.2.2

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Mathematics 2008 Grade 11

71 3525918	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.1	9-12.M.1.2	
72 3430146	9-12.N.1.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.3.2	
73 3525663	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	
74 3525668	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	
75 3547832	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	9-12.A.2.2	
76 2177519	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	
77 3525670	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	
78 3525655	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	
79 3525913	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.2	
80 3525696	9-12.S.1.1	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3	9-12.S.1.3	
83 3525884	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	9-12.G.2.1	
84 2177528	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.3.1	9-12.A.4.1	
85 3430140	9-12.M.1	9-12.M.1	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	9-12.M.1.3	
86 3525685	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	
87 3525883	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	9-12.G.1.2	
88 3344970	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1
89 2177516	9-12.A.1.1	9-12.A.1.1	9-12.A.1.1	9-12.A.2.1	9-12.A.2.1	9-12.A.2.1	9-12.M.1.3	
90 3525689	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	9-12.N.3.1	
91 3525698	9-12.S.2	9-12.S.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	9-12.S.2.2	
92 3430135	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.3.2	9-12.A.4.1	9-12.A.4.1		

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 11

Low		Medium		High
0		14		50

9-12.A																				
9-12.A.1	57																			
9-12.A.1.1	55	55	55	55	55	55	55	22	28	28	28	28	28	28	28	33	33	33	52	52
	52	52	52	52	52	57	57	57	57	57	57	68	68	68	68	68	69	78	78	
	78	78	78	78	78	88	88	88	89	89	89									
9-12.A.2	77	77	77																	
9-12.A.2.1	66	66	66	66	66	66	66	7	24	24	24	24	24	24	24	33	33	62	62	88
	88	88	88	88	89	89	89													
9-12.A.2.2	11	11	11	11	11	11	44	44	44	44	44	44	44	37	37	37	37	37	37	37
	75	75	75	75	75	75	75													
9-12.A.3	64	64																		
9-12.A.3.1	7	35	35	35	35	35	35	35	39	39	39	39	39	47	84	84	84	84	84	84
9-12.A.3.2	55	55	55	55	55	55	55	58	58	58	58	58	73	73	73	73	73	73	73	92
	92	92	92																	
9-12.A.4																				
9-12.A.4.1	1	2	2	2	2	2	2	2	7	7	11	11	11	11	11	11	11	26	26	26
	26	26	26	26	39	39	47	47	47	47	47	47	58	58	61	61	61	61	61	

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 11

	61	61	84	92	92															
9-12.G																				
9-12.G.1																				
9-12.G.1.1	12	12	12	12	12	12	12	17	17	17	17	17	17	17	21	21	21	21	21	21
	21	67																		
9-12.G.1.2	67	67	67	67	67	67	74	74	74	74	74	74	74	77	77	77	77	77	77	77
	87	87	87	87	87	87	87													
9-12.G.2																				
9-12.G.2.1	18	32	32	32	32	32	32	32	83	83	83	83	83	83	83					
9-12.G.2.2	53	53	53	53	53	53	53	70	70	70	70	70	70	70						
9-12.G.2.3	48	48	48	48	48	48	48	54	54	54	54	54	54	54	59	62	62	62	62	62
9-12.M																				
9-12.M.1	85	85																		
9-12.M.1.1	3	3	3	3	3	3	3	31	31	31	31	31	31	63	71	71	71	71	71	71
9-12.M.1.2	9	9	31	71																
9-12.M.1.3	29	29	29	29	29	29	29	43	43	43	43	43	43	43	85	85	85	85	85	89
9-12.N																				
9-12.N.1																				

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 11

9-12.N.1.1	22	30	44	45	45	45	45	45	45	45	72	86	86	86	86	86	86	86		
9-12.N.1.2	18	18	19	19	25	25	25	25	25	25	25	44	44	44	44	44	44	68	68	
9-12.N.2																				
9-12.N.2.1	9	9	9	9	18	18	18	18	19	19	19	19	19	22	22	22	22	22	33	33
	50	50	50	50	60	60	60	60	60	60	60	63	63	63	63	65	65	65	65	
	69	69	69	69	69	69	72	72	72	72	72									
9-12.N.3	23																			
9-12.N.3.1	23	23	23	23	23	23	30	30	30	30	30	30	34	34	34	34	34	34	36	36
	46	46	46	46	46	46	46	59	59	59	59	59	59	76	76	76	76	76	76	
	76	90	90	90	90	90	90	90												
9-12.N.3.2	9	34	36	36	36	36	36	50	50	50	63	63	65	65	65	72				
9-12.S																				
9-12.S.1																				
9-12.S.1.1	16	16	20	27	27	27	27	27	27	49	56	64	80							
9-12.S.1.2	8	8	8	8	8	8	8	16	16	16	16	16	20	20	20	20	20	20	49	49
	49	49	49	49	66	66	66	66	66	66	66									
9-12.S.1.3	64	64	64	64	80	80	80	80	80	80										
9-12.S.2	51	91	91																	
9-	7	7	7	7	7	7														

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Mathematics 2008 Grade 11

12.S.2.1	9	9	9	9	9	9														
9-12.S.2.2	10	10	10	10	10	10	10	27	38	38	38	38	38	38	38	51	51	51	51	51
	51	56	56	56	56	56	56	79	91	91	91	91	91							

Table 11.11
Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Mathematics 2008 Grade 11

Low		Medium		High
1		3		7

9-12.A											
9-12.A.1	57:1										
9-12.A.1.1	5:7	22:1	28:7	33:3	52:7	57:6	68:5	69:1	78:7	88:3	89:3
9-12.A.2	7:3										
9-12.A.2.1	6:7	7:1	24:7	33:2	62:2	88:5	89:3				
9-12.A.2.2	1:6	4:7	37:7	75:7							
9-12.A.3	64:2										
9-12.A.3.1	7:1	35:7	39:5	47:1	84:6						
9-12.A.3.2	55:7	58:5	73:7	92:4							
9-12.A.4											
9-12.A.4.1	1:1	2:7	7:2	11:7	26:7	39:2	47:6	58:2	61:7	84:1	92:2
9-12.G											
9-12.G.1											
9-12.G.1.1	12:7	17:7	21:7	67:1							
9-12.G.1.2	67:6	74:7	77:7	87:7							
9-12.G.2											
9-12.G.2.1	18:1	32:7	83:7								
9-12.G.2.2	53:7	70:7									
9-12.G.2.3	48:7	54:7	59:1	62:5							
9-12.M											
9-12.M.1	85:2										
9-12.M.1.1	3:7	31:6	63:1	71:6							
9-12.M.1.2	9:2	31:1	71:1								
9-12.M.1.3	29:7	43:7	85:5	89:1							
9-12.N											
9-12.N.1											
9-12.N.1.1	22:1	30:1	44:1	45:7	72:1	86:7					
9-12.N.1.2	18:2	19:2	25:7	44:6	68:2						
9-12.N.2											
9-12.N.2.1	9:4	18:4	19:5	22:5	33:2	50:4	60:7	63:4	65:4	69:6	72:5
9-12.N.3	23:1										
9-12.N.3.1	23:6	30:6	34:6	36:2	46:7	59:6	76:7	90:7			
9-12.N.3.2	9:1	34:1	36:5	50:3	63:2	65:3	72:1				
9-12.S											
9-12.S.1											
9-12.S.1.1	16:2	20:1	27:6	49:1	56:1	64:1	80:1				
9-12.S.1.2	8:7	16:5	20:6	49:6	66:7						
9-12.S.1.3	64:4	80:6									
9-12.S.2	51:1	91:2									
9-12.S.2.1	79:6										
9-12.S.2.2	10:7	27:1	38:7	51:6	56:6	79:1	91:5				

Table 11.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 11

Low		Medium		High
1		3		7

1 3525898	9-12.A.2.2:6	9-12.A.4.1:1		
2 3525665	9-12.A.4.1:7			
3 3525678	9-12.M.1.1:7			
4 3525658	9-12.A.2.2:7			
5 3430129	9-12.A.1.1:7			
6 3344974	9-12.A.2.1:7			
7 3525899	9-12.A.2:3	9-12.A.2.1:1	9-12.A.3.1:1	9-12.A.4.1:2
8 3525693	9-12.S.1.2:7			
9 3525682	9-12.M.1.2:2	9-12.N.2.1:4	9-12.N.3.2:1	
10 3430158	9-12.S.2.2:7			
11 2177524	9-12.A.4.1:7			
12 3547830	9-12.G.1.1:7			
16 3525911	9-12.S.1.1:2	9-12.S.1.2:5		
17 3525880	9-12.G.1.1:7			
18 2177518	9-12.G.2.1:1	9-12.N.1.2:2	9-12.N.2.1:4	
19 3344967	9-12.N.1.2:2	9-12.N.2.1:5		
20 3525694	9-12.S.1.1:1	9-12.S.1.2:6		
21 3547831	9-12.G.1.1:7			
22 3525907	9-12.A.1.1:1	9-12.N.1.1:1	9-12.N.2.1:5	
23 3344958	9-12.N.3:1	9-12.N.3.1:6		
24 3525657	9-12.A.2.1:7			
25 3525906	9-12.N.1.2:7			
26 2177525	9-12.A.4.1:7			
27 3525916	9-12.S.1.1:6	9-12.S.2.2:1		
28 3525653	9-12.A.1.1:7			
29 3525893	9-12.M.1.3:7			
30 3344964	9-12.N.1.1:1	9-12.N.3.1:6		
31 3525679	9-12.M.1.1:6	9-12.M.1.2:1		
32 3525672	9-12.G.2.1:7			
33 2177517	9-12.A.1.1:3	9-12.A.2.1:2	9-12.N.2.1:2	
34 3525919	9-12.N.3.1:6	9-12.N.3.2:1		
35 3525660	9-12.A.3.1:7			
36 3525909	9-12.N.3.1:2	9-12.N.3.2:5		
37 3344977	9-12.A.2.2:7			
38 3525915	9-12.S.2.2:7			
39 2177529	9-12.A.3.1:5	9-12.A.4.1:2		
43 3541066	9-12.M.1.3:7			
44 3547835	9-12.N.1.1:1	9-12.N.1.2:6		
45 3547836	9-12.N.1.1:7			
46 3525687	9-12.N.3.1:7			
47 3525666	9-12.A.3.1:1	9-12.A.4.1:6		
48 3525889	9-12.G.2.3:7			

Table 11.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Mathematics 2008 Grade 11

49 3430149	9-12.S.1.1:1	9-12.S.1.2:6	
50 3344961	9-12.N.2.1:4	9-12.N.3.2:3	
51 3525914	9-12.S.2:1	9-12.S.2.2:6	
52 2177501	9-12.A.1.1:7		
53 3529400	9-12.G.2.2:7		
54 3525675	9-12.G.2.3:7		
55 3525905	9-12.A.3.2:7		
56 3525697	9-12.S.1.1:1	9-12.S.2.2:6	
57 3525656	9-12.A.1:1	9-12.A.1.1:6	
58 3430134	9-12.A.3.2:5	9-12.A.4.1:2	
59 3344963	9-12.G.2.3:1	9-12.N.3.1:6	
60 3525908	9-12.N.2.1:7		
61 3547833	9-12.A.4.1:7		
62 3525891	9-12.A.2.1:2	9-12.G.2.3:5	
63 3525917	9-12.M.1.1:1	9-12.N.2.1:4	9-12.N.3.2:2
64 3430148	9-12.A.3:2	9-12.S.1.1:1	9-12.S.1.3:4
65 3525659	9-12.N.2.1:4	9-12.N.3.2:3	
66 3525910	9-12.S.1.2:7		
67 3525885	9-12.G.1.1:1	9-12.G.1.2:6	
68 3430145	9-12.A.1.1:5	9-12.N.1.2:2	
69 3525686	9-12.A.1.1:1	9-12.N.2.1:6	
70 3525674	9-12.G.2.2:7		
71 3525918	9-12.M.1.1:6	9-12.M.1.2:1	
72 3430146	9-12.N.1.1:1	9-12.N.2.1:5	9-12.N.3.2:1
73 3525663	9-12.A.3.2:7		
74 3525668	9-12.G.1.2:7		
75 3547832	9-12.A.2.2:7		
76 2177519	9-12.N.3.1:7		
77 3525670	9-12.G.1.2:7		
78 3525655	9-12.A.1.1:7		
79 3525913	9-12.S.2.1:6	9-12.S.2.2:1	
80 3525696	9-12.S.1.1:1	9-12.S.1.3:6	
83 3525884	9-12.G.2.1:7		
84 2177528	9-12.A.3.1:6	9-12.A.4.1:1	
85 3430140	9-12.M.1:2	9-12.M.1.3:5	
86 3525685	9-12.N.1.1:7		
87 3525883	9-12.G.1.2:7		
88 3344970	9-12.A.1.1:3	9-12.A.2.1:5	
89 2177516	9-12.A.1.1:3	9-12.A.2.1:3	9-12.M.1.3:1
90 3525689	9-12.N.3.1:7		
91 3525698	9-12.S.2:2	9-12.S.2.2:5	
92 3430135	9-12.A.3.2:4	9-12.A.4.1:2	

Table 11.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 11

Low DOK		Matched DOK		High DOK
1		3		7

9-12.A [2]:											
9-12.A.1 [2]:	57:1 [1]										
9-12.A.1.1 [2]:	5:7[1]	22:1 [1]	28:7 [1]	33:3 [1.33]	52:7 [1.14]	57:6 [1]	68:5 [1.8]	69:1 [1]	78:7 [1.43]	88:3 [1.33]	89:3 [1]
9-12.A.2 [2]:	7:3[1.67]										
9-12.A.2.1 [1]:	6:7[1.43]	7:1[2]	24:7 [1.14]	33:2 [1]	62:2 [1]	88:5 [1.4]	89:3 [1]				
9-12.A.2.2 [2]:	1:6[1]	4:7[1.57]	37:7 [1.43]	75:7 [1]							
9-12.A.3 [2]:	64:2 [1]										
9-12.A.3.1 [2]:	7:1[2]	35:7 [1.14]	39:5 [1.2]	47:1 [2]	84:6 [1.17]						
9-12.A.3.2 [1]:	55:7 [1.43]	58:5 [1.4]	73:7 [1]	92:4 [1]							
9-12.A.4 [2]:											

Table 11.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 11

9-12.A.4.1 [2]:	1:1[1]	2:7[1]	7:2[2]	11:7[1.29]	26:7[1.43]	39:2[1.5]	47:6[1]	58:2[1.5]	61:7[1]	84:1[2]	92:2[2]
9-12.G [2]:											
9-12.G.1 [2]:											
9-12.G.1.1 [2]:	12:7[1]	17:7[1.57]	21:7[1]	67:1[2]							
9-12.G.1.2 [2]:	67:6[1.33]	74:7[2]	77:7[1.86]	87:7[1.29]							
9-12.G.2 [2]:											
9-12.G.2.1 [2]:	18:1[1]	32:7[2]	83:7[1.86]								
9-12.G.2.2 [1]:	53:7[1.14]	70:7[1.14]									
9-12.G.2.3 [2]:	48:7[1.57]	54:7[1.57]	59:1[2]	62:5[1.2]							
9-12.M [1]:											
9-12.M.1 [1]:	85:2[2]										
9-	3:7[	31:6	63:1	71:6							

Table 11.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 11

12.M.1.1 [2]:	1.71]	[1]	[2]	[1]							
9-12.M.1.2 [1]:	9:2[1.5]	31:1 [1]	71:1 [1]								
9-12.M.1.3 [1]:	29:7 [1.29]	43:7 [1.71]	85:5 [1.8]	89:1 [1]							
9-12.N [1]:											
9-12.N.1 [1]:											
9-12.N.1.1 [1]:	22:1 [1]	30:1 [1]	44:1 [2]	45:7 [1]	72:1 [2]	86:7 [1.14]					
9-12.N.1.2 [1]:	18:2 [1]	19:2 [1]	25:7 [1.14]	44:6 [1.33]	68:2 [2]						
9-12.N.2 [1]:											
9-12.N.2.1 [1]:	9:4[1.5]	18:4 [1.75]	19:5 [1.4]	22:5 [1.4]	33:2 [1]	50:4 [1.5]	60:7 [1.14]	63:4 [1.25]	65:4 [1.5]	69:6 [1]	72:5 [1.6]
9-12.N.3 [3]:	23:1 [2]										
9-12.N.3.1 [2]:	23:6 [2]	30:6 [2]	34:6 [1.83]	36:2 [1.5]	46:7 [2]	59:6 [1.67]	76:7 [1.71]	90:7 [1.86]			

Table 11.13
Assessment Item DOK vs. Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Mathematics 2008 Grade 11

9-12.N.3.2 [3]:	9:1[2]	34:1 [2]	36:5 [2]	50:3 [1.33]	63:2 [2]	65:3 [2]	72:1 [2]
9-12.S [2]:							
9-12.S.1 [3]:							
9-12.S.1.1 [3]:	16:2 [1]	20:1 [1]	27:6 [2]	49:1 [2]	56:1 [2]	64:1 [1]	80:1 [2]
9-12.S.1.2 [2]:	8:7[1.43]	16:5 [2]	20:6 [1]	49:6 [1.17]	66:7 [1.71]		
9-12.S.1.3 [3]:	64:4 [1]	80:6 [2]					
9-12.S.2 [2]:	51:1 [2]	91:2 [2]					
9-12.S.2.1 [1]:	79:6 [1.17]						
9-12.S.2.2 [2]:	10:7 [1.57]	27:1 [2]	38:7 [1.86]	51:6 [1.67]	56:6 [1.5]	79:1 [1]	91:5 [1.2]

Appendix C

Reviewers' Notes and Source-of-Challenge Comments

South Dakota
Grades 3-8 and 11
Mathematics
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.5

Comments made by reviewers on items identified as having a Source-of-Challenge issue by item number.

Tables *grade*.7

All notes made by reviewers on items by item number.

Table 3.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 3

Item Number	Comments by Reviewer
9	This item has two correct answers, depending on how the student thinks about the problem. The given pattern (9,18,27,36,45,54) could come from the rule multiply by 9 (answer C) or by adding 9 (answer D).
9	This problem has two correct answers. A student may continue the pattern by adding 9 or multiplying by nine, for instance 9x1, 9x2, etc.
9	Choice C (multiply by 9) misleads the student. The student may use "multiply by 9" to solve the problem as well, so they might not choose choice D ("add 9").
9	This item has two correct answers. You could think of this as multiplying by 9 (multiply the number of the term by 9) or by adding 9 to the previous term.
9	Multiplying by the number nine could be a possibility. Students can see it as 1 X 9, 2 X 9, etc.
53	Children could answer this item by not finding the sum, but by looking only at the larger number on the left of the inequality. There should be a larger number on the right, so you could be certain that they added the numbers.
54	This item, because of the huge reading amount, is not accessible for many students---the content is almost trivial.
57	There is no mention of multiples of numbers other than 2, 5, and 10. Not clear that students should know the multiples of 6 even though they are expected to be able to multiply by 6--two different ideas.

Table 3.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 3

Item Number	Comments by Reviewer
21	This standard says students will solve money problems using a collection of coins and bills. This item uses a written representation with $ and decimals to represent the money rather than coins and bills.
21	The standard states "using a collection of coins and bills." This problem uses dollars and cents but there is no collection.
21	Students aren't truly using "a collection of coins and bills," which is what the objective states. They are only stating which amount of money has a value between $0.50 and $1.00.
21	This item which is about choosing an amount of money between $.50 and $1.00 is not clearly a measurement item, but none of number objectives suggest ordering numbers other than whole numbers
28	The standard addressing line segments does not include the skills used in this problem--how line segments are named and comparing the lengths of segments using customary naming.
28	The standard says to identify a line segment. In the problem the students must pick out the longest segment which involves using labels.
28	The standard says to "identify" line segments, however the question is asking them to determine length and observe labeling in order to solve.
28	This item, which requires knowing the notation for line segment, and also choosing the longest line segment is beyond the objective that only says to identify a line segment.
28	The standard says identifying and for this problem they are asking the students for the longest line segment. They are measuring and not identifying.
34	The objectives are not clear that one identifies the shape by its properties. It can be read that way, but teachers should know which properties at this grade level are important.
35	All the fraction items are based on one interpretation of a fraction (the ratio meaning---"out of") which is very limiting. There are no part-whole depending upon specific attributes such as area, length, or numerousness.
39	The emphasis in the problem is on correctly labeling a number line---while all that is required is knowing what two hundreds a given number is between.
54	This item is too dense, the reading too complex, for students at this grade level. There is too much reading for the simple task of completing a bar graph. Because of the amount of reading, many students might just guess at the answer when they may well know the required math if it were presented more simply and concisely.
54	This problem requires too much reading for a 3rd grader. It is so dense that many students will not take the time or effort to read through the entire problem consisting of a chart, a graph and three complex sentences.
54	This item seems to be very wordy and complex. I think a 3rd grader would get lost in the problem before he/she could answer it.

Table 3.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 3

Item Number	Comments by Reviewer
54	This question involves entirely too much reading for 3rd grade. It makes the problem inaccessible to the students after spending so much time digesting the information.
54	This problem provides a lot of information and reading for the student to process at once and the question about drawing a bar seems cumbersome. Is there a way this question could be written more efficiently?
54	This math problem is so dense for the students. The children won't even attempt this problem and will probably just guess. The problem is too hard and complex for the third grade.
59	Note: This is not the usually way multiplication is described--usually it is the number of sets times the number in each set. This is the opposite.
80	The lines on the picture (designating the highways) within the county lines are distracting and confusing. Students may try to determine which figure is similar to the shape of the highway lines instead of the shape of the entire county.
91	I am not sure if the question needs the picture, since it gives the information in the problem. The question is talking about yellow and red soccer balls and the soccer balls are shaded light and dark. Since the test isn't in color, it might be better to leave the picture off or talk about white and black soccer balls.

Table 4.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
2	This item seems very easy for this grade level.
30	Students often chose a number in the word problem---in this case they would be correct, but for the wrong reason. NO excuse for using 8 both in the problem and in the answer--poor test construction.
57	The lengths of the sides in the drawings of the triangles in the answer choices are too similar they could mislead students into making the wrong selection even though they know the mathematics. The only way a student can get the correct answer is by measuring the side lengths, which is not the intent of the item.
57	This problem uses a triangle and parallelogram to make 4 different figures. The shapes shown in the answers are too similar for students to distinguish the correct answer.
57	The figures are too similar in size and shape to be able to accurately choose the correct answer. The lengths of the legs are too close in size to test whether or not they understand the concept or simply made a mistake in measuring (which is not what this question is testing).
57	Item 57 requires student to find a figure among a set of solutions that could be made by a triangle and parallelogram shown in the beginning of the problem. I found two of the options shown to be so close (A & D) that the student could answer with one of two options. thereby
57	The choices for the answers for this problem are to close together to figure out. The answers are too similar. Students can still know what congruent is and still get the question wrong.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
2	This item asks students to choose the greatest number from among four three-digit numbers, a skill that is significantly below expectations for this grade level.
2	This item using numbers from 150 to 375 is too easy for 4th graders. It asks them to choose the greatest number from a list of 4.
2	This question is too easy for the grade level. The pictures (boxes of paper) aren't needed either, especially considering they have different amounts of paper in them. This might mislead the reader unnecessarily.
2	Determining which is more in Item No. 2 does not seem to be addressed in the 4th grade standards, although comparing numbers is.
2	This problem is below grade level expectation. This problem is too simple for third graders.
5	This item asks students to round a two digit number, a skill not addressed in the standards for this grade level. It is included in the grade three standards, standard 3N31.
5	This item on rounding 54 to the nearest 10 does not work with the 4th grade test. It is too easy. It is appropriate for the third grade test and would measure objective 3N3.1
5	This item on rounding does not fit on the 4th grade standards. It corresponds with 3.n.3.1 on the 3rd grade standards.
5	This item is more appropriate for standard 3.N.3.1 (rounding 2-digit whole numbers to the nearest ten).
5	There is estimation in the 4th grade standards but this item which addresses rounding to the nearest 10 is a 3rd grade standard.
5	This item fits the grade 3 objectives (3.N3.1) but not the grade 4.
5	This question is perfect for third grade 3.N.3.1. This question has no standard in 4th grade.
6	The standard for this grade level restricts students comparison of fractions to fourths, halves, and thirds. This item asks students to select which fraction from the fractions 1/2, 2/5, 9/10, and 3/8 is closest to 1. Students might not have had the opportunity to work with fractions with those denominators.
6	The standard is specific stating fractions fourths, halves, and thirds. This problem requires students to use fifths, eighths, and tenths.
6	These fractions used on this problem are beyond the scope of the standard which only refers to half, quarters, and thirds.
6	The fractions are beyond the limitations of the standard. The standard is supposed to be 1/2, 1/3, and 1/4 only and this question has 2/5, 9/10 and 3/8.
6	The fractions of item 6 are beyond the expectations of the 4th grade standards which are limited to fourths, halves and thirds.)
6	The fractions are beyond the limits of the standard. The standard is to use 1/4, 1/2 and 1/3 and the problem is using 3/8, 2/5 and 9/10.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
11	The objective is not a clear match unless scaling also means knowing the measurement equivalences for capacity, etc.
12	This item asks students to figure out from among the choices which number is divisible by 5. The topic of divisibility does not appear in the standards at this grade level.
12	This problem requires knowledge of number characteristics such as odd, even, and divisibility rules. There is not a standard that addresses these number characteristics.
12	This item is about number properties, (odd, even, divisibility) not covered in the standards.
12	This question is about number properties (odd/even numbers, divisibility, number of digits), which is not covered by a standard in 4th grade.
12	This problem requires their knowledge of the word divisibility.
12	There is no objective that mentions number properties such as odd/even or divisibility.
12	This problem is about number characteristics. The problem is about odd and even and it isn't addressed in the specific standard.
19	Because this problem is about CD's, it seems a bit confusing to have one of the store names be CDs Galore. Changing that store name might make simplify the reading task a bit for students.
33	This item uses prism, the objective only includes triangular prism. Have students had the opportunity to learn word--should not be used as a distractor.
36	The standard that best fits this item asks students to write number sentences. This item includes only numeric expressions. To better match the standard, each expression could be changed to a number sentence without affecting the content being assessed.
36	This on one using subtraction embedded in a story problem doesn't fit any of the objectives very well. This seemed like the best fit but I don't think it does a good job of assessing the standard that asks for student to relate the concepts of addition and subtraction.
36	This standard (4.A.3.1) states that students are to write and solve number sentences, however the problem doesn't truly give "number sentences" for answer choices. It gives choices such as 389 + 14 instead. However, the question fits everything else in that standard.
36	Although this would fit under standard 4.A.3.1, 389 + 14, and the other examples in the problem are not number sentences as described in the standard.
36	Technically this does not fit since the item involves an expression rather than a number sentence or equation.
36	The standard 4.A.3.1 for this grade is looking for number sentences and the answers given are not in number sentences. This problem takes words and puts them in an expression for the student to choose.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
38	This item asks students to round two-digit numbers, a skill not addressed at this grade level. It is part of the grade three standards, standard 3N31.
38	Another problem that is too easy for a 4th grade exam. This codes well with objective 3N31 on the 3rd grade standards. It ask students to round to the nearest 10.
38	This item does not match the 4th grade standards for rounding. It matches 3.n.3.1 in the 3rd grade standards.
38	This question would fit better on the 3rd grade test (standard 3.N.3.1), which asks students to round 2-digit numbers to the nearest ten.
38	Again, Item 38 is a rounding problem which is a 3rd grade standard (3.N.3.1)and not attributable to the 4th grade standards.
38	This is another example of a grade 3 objective--rounding---same as the last--belongs with 3.N.3.1
38	This problem does not fit the 4th grade standard, but would fit perfectly in the third grade standard 3.N.3.1.
39	The standard for this item asks students to know the term equally likely. This item uses the term likely, which is a different concept. The item should be rewritten to assess the concept of equally likely can be measured in better alignment with the standard.
39	This problem does not relate to the standard which specifies equally likely or not equally likely outcomes. The problem has a correct response of likely.
39	The wording on this item should be clarified to match the standard using the terms "equally likely" and "not equally likely".
39	This question doesn't apply because the standard (4.S.2.1) states that students find the probability of simple events limited to equally likely and not equally likely outcomes. This question is asking them to figure probability with "likely" or "unlikely" outcomes.
39	Item 39 is possibly unfair as it is using terminology "likely" and "unlikely" which is not included/expected in the standard "equally likely" and "equally unlikely." The terminology is not in the 3rd grade standards either.
39	Likely and unlikely are not included in the objective (only equally likely), but common sense may allow for this--too much emphasis on this objective in the assessment.
39	The standard codes to equally likely and not equally likely. The choices that are given do not match because the students are given likely and unlikely.
43	The distractors A-Triangular and B-Square are so obviously wrong they should be changed to distractors that have at least some connection to the content of the problem.
43	This problem is about similar triangles. The distractors A and B (triangular and square) do not work for the problem.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
43	Answer choice A is a bad distractor (obvious wrong answer). It is obvious that the figures are not triangular.
43	Not good distractors for this item--a funny mixture using shape names and shape relations.
43	Just have a picture alone in the problem. I believe the students will get confused when you say "each side of the second figure is exactly 2/3 the length of the matching side of the first figure." Otherwise use 1/2 instead of 2/3.
44	Distractors B and D in this problem are so obviously wrong they should be changed to distractors that have the numbers 4 and 7 in them, the numbers used in the problem.
44	This problem shows two 4 x 7 arrays to illustrate the commutative property. The distractors using numbers like 8 x 5 and 3 x 6 don't seem to fit.
44	Need to change some of the distractors to make it more difficult.
45	This item is a very weak measure of students' understanding of the less than relationship.
45	This problem using inequality doesn't fit the standard which asks students to select the appropriate relational symbol. It is more about evaluating expressions.
45	This doesn't really fit the standard because the less than sign is already in the problem and the student doesn't have to place it.
45	The standard 4.A.2.1 states that students should "select an appropriate relational symbol," however the question has them substitute numbers in order to make the number sentence true. The symbol has already been selected for them.
45	Standard 4.A.2.1. is not a good match for this problem as students are not expected to select the correct relational symbol, but it is the best of the options in the standards.
45	I could not find a standard that this problem fits well in, but this was the best place. I could not find a standard that addressed substitution.
50	This item assesses whether students can make the correct decision about how to handle a remainder in a division problem with a real world context, a skill not addressed in the standards at this grade level.
50	There is no objective that fits solving a word problem involving division and remainders.
53	The problem asks students to identify a prism. The standard states "rectangular prism".
53	One of the options, and the answer for this problem, is 'prism.' However the standards include rectangular prism as the definition.
53	This item uses prism, the objective only includes rectangular prism. Have students had the opportunity to learn that a cube is a prism?
53	One of the choices for an answer is the prism and should be stated as a rectangular prism.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
54	This item uses the term likely which is not in the standards at this grade level. The standards address the concept of equally likely which is not the same as likely.
54	This probability problem is asking for an answer of likely or unlikely. The standard states equally likely and not equally likely outcomes.
54	The standard refers to "equally likely" and "not equally likely" whereas the item uses "likely" and "unlikely".
54	This question doesn't apply because the standard (4.S.2.1) states that students find the probability of simple events limited to equally likely and not equally likely outcomes. This question is asking them to figure probability with "likely" or "unlikely" outcomes.
54	This is similar to item 39 where the terms in the problem/answers (likely and unlikely) do not match the expectations of the standard (equally likely and equally unlikely.)
54	Another item that uses likely and unlikely which are not specifically in the standard.
54	The standard says that you need "equally likely" and "not equally likely." The answer choices for the problem are "likely" and "unlikely."
57	The dimensions on the distractors in this item are too close to being the same. I would have missed this problem.
57	This may have begun as a good idea, but the optical illusion and size of the options make the item very difficult. It is not clear what is really being tested.
65	The standard 4.A.2.2 states that students are to "simplify a two-step equation using whole numbers," however the question asks students to SOLVE the equation by using a whole number.
65	Not a good match to the objective---need a substitution objective (students can substitute a value for in unknown to determine a true sentence.
67	This question also addresses M.1.2. solving problems with money.
70	This item asks students to identify a line of symmetry, a term not addressed in the standards for this grade level.
70	This item asks students to identify a line of symmetry. There is no mention of line of symmetry in any of the objectives.
70	The item asks for a line of symmetry. There is no mention of symmetry in the standards in geometry.
70	There is no standard in 4th grade that mentions the concept of symmetry. This question asks which line segment is a line of symmetry.
70	Item 70 requires student knowledge of symmetry which is not evident in the 4th grade standards or the previous 3rd grade standards.
70	Line symmetry is not mentioned in any specific objective.
70	There is no standard in 4th grade that has the words "line of symmetry" in it.
77	Item 77 is similar to items 39 and 54, using the terminology of 'likely' and 'unlikely' which is not included in the standard.

Table 4.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 4

Item Number	Comments by Reviewer
78	The objective does not specifically relate two-dimensions to three-dimensional shapes.
84	The standard that best matches this item addresses writing 1-step equations, where this item asks students to write a 2-step equation.
84	This is a 2 step word problem while the standard only includes 1 step.
84	Standard 4.A.3.1 states that students are to write and solve number sentences that represent ONE-STEP word problems. This particular problem asks them to perform a 2-step problem.
84	Not quite a match since it has two-steps and the objective says one-step.
84	This problem is a 2-step word problem and the standard asks for one-step word problems. This was the best place for this standard, because there was no other choice.
88	Poor item---what else could you answer? It is not clear that anything but the number in the item is the number chosen.
89	This item asks students to determine the mean in a set of data. Mean is not among the measures addressed in the standards at this grade level.
89	The standards indicate students should be able to identify the median, mode, and range. The problem asks students to identify the mean.
89	This item asks for a mean which is not mentioned in the standards for 4th grade.
89	The standard 4.S.1.2 doesn't fit with this item because it states that students are able to identify the median, mode, and range, however this question asks students to find the mean (average) of the data set.
89	Item 89 requires students to determine the mean of scores provided. Mean has not been introduced in the 4th grade standards.
89	Mean is not part of the objective at this level. An unfair question.
89	This problem does not match the standard because it deals with mean. The standard only deals with median, mode and range.
91	Item 91 refers to a "one-step" translation (slide) in the problem. There is no indication from the 4th grade standards that they would be expected to know a "one-step" slide.
91	Has a one-step slide been defined? Not clear why this description was used.

Table 5.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
1	Item 1 requires students to subtract 14-7. The answers provided are 98, 21, 7, and 2. In this case the answer is 7. How do you know the student actually did the subtraction or just picked a number that was in the problem?
1	Item's answer is one of the numbers in the problem---does not need to be. Students resort to this strategy, so you do not know why the answer was selected.
19	Some students who have traveled in an airplane a lot may think that you must check in an hour before take-off. This item states in the first sentence, "Mr. Adams has 1 3/4 hours before his next flight." The sentence may need to state, "Mr. Adams has 1 3/4 hours before he must check in for his next flight."
19	Item 19 would be confusing to students. It asks students how much time the person can spend shopping before his next flight leaves. If this is real-life application, then one would also take into account how soon before the flight leaves the person has to be at the gate - not just when the flight leaves. Perhaps the beginning could be reworded to say, "Mr. Adams has 1-3/4 hours before he needs to be at the gate for his next flight..."
19	Change the mixed number in the first sentence from 1 3/4 to a larger mixed number to make the context of the problem realistic otherwise it may confuse students.
22	There is no correct answer for this item. It assumes that you cannot make a decision about mode if a data set has no mode, whereas saying that data has no mode is a decision that can be made relative to modes of such sets.
22	There is no correct answer given here. Mean ,median. mode, and range can be calculated from any set of data...even if the mode is "no mode".
22	This item is a mathematically incorrect item. There is no "correct" answer. It asks which measure can NOT be calculated (the answer is "mode"), however, mode can be calculated as "no mode."
22	Item 22 asks students which measure the person would not calculate based on data she collected. The options are mean, median, mode, range. Although there is no mode in the data, the student has to determine this and the answer for the calculation would be "no mode," - not that mode would not be included. So there is no correct answer in this item.
22	There is no correct answer. There is no mode---but that you can say (Is that calculating)---so she should report that there is no mode (not that she can't calculate it).
22	There is no correct answer for this problem. The question asks students "Which measure will Chantal not be able to calculate" and gives the choices of mean, median, mode and range. All of these you can calculate.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
1	This item asks students to subtract 7 from 14, a skill not addressed in the standards for this grade level, and too low for expectations for students at this grade level.
1	The item asks students to subtract 7 from 21. That is too easy for a fifth grade test item. It doesn't fit with any of the standards.
1	The item asks for how many comic books one child has if he has 7 fewer than his friend who has 14. This item is too low level for a 5th grade student.
1	This item asks students to subtract 7 from 14, which is a skill below the expectations presented in this standard for the grade level.
1	Item 1 is a simple subtraction problem (14-7). This concept is extremely low for a 5th grade problem.
1	This is an item that is below grade level.
1	This question is to low for this grade level. The question says "Robby has 14 comic books. Fernando has 7 comic books less than Robby. How many comic books does Fernando have?" All this question wants is to subtract 7 from 14.
4	Item 4 requires students to move up and down a number line based on instructions of the problem. The answers are given with arrows pointing to the left and right and then a number. There does not seem to be any standard that specifically addresses this concept/skill.
9	Standard specifies finding the line of symmetry for rectangles, squares and triangles. This problem requires students to find the line of symmetry for letters.
9	The standard limits symmetry to geometric figures, not letters or other shapes that are given in the test item.
9	The standard 5.G.2.1 states that students are to determine lines of symmetry in "rectangles, squares and triangles," whereas this item asks them to find lines of symmetry in letters of the alphabet.
9	Item 9 requires students to determine lines of symmetry in block lettering. The standard only addresses symmetry in rectangles, squares and triangles.
9	Objective says that students will identify lines of symmetry in certain geometric figures---these are not geometric figures.
9	The standard says to find symmetry in rectangles, squares and triangles. This problem asks how many of the letters in the word below appear to have at least 1 line of symmetry.
17	The standard for this grade says the students need to estimate length and weight and this problem has you estimate area. This is the only place this problem would fit.
18	Item 18 appears to be about "certainty" but is more involved than the standard 5.S.2.1. which simply asks students to classify a simple event. Therefore, I put it under 5.N.3.1. based on non-routine strategies to solve.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
18	No specific objective in statistics for this--so more of a general problem solving.
19	Item is poorly worded--better to state that Mr. had 1 3/4 hours before having to be at the gate (rather than before the next flight).
28	This item includes a circle graph, a topic not addressed at this grade level, and addition of per cents, another topic not yet introduced at this grade level. Neither topic is included in the standards. In addition, it asks students to know the mathematical meaning of the word "or" in the question "...what is the percent of students who prefer math or science?"
28	The problem uses a circle graph, percents and a "or" question "what is the percent of students who prefer math or science." These concepts were not included in the standard 5.S.1.1
28	This item uses a circle graph and % in the graph. Have % or circle graphs been introduced anywhere in the standards?
28	This question uses a circle graph, which students have not seen yet in 5th grade. The standard 5.S.1.1 states that they should be using only simple bar graphs, line plots, pictographs, and line graphs. Also, the circle graph used percents, which have not been introduced in the standards yet either. It also might have been helpful to list 31% (math) and 34% (science)as distractors in the answer options, considering the question asked what percent of students preferred math OR science (65%).
28	Item 28 requires students to compare percents. Percents have not been included in the 5th grade or previous standards.
28	Neither circle graph or percent is mentioned in Grade 5 objectives.
28	The circle graph is not in the standard 5.S.1.1., but this is the only standard it seemed to fit under. Percents are also not emphasized in any of the standards. I am wondering if it has been introduced yet? We are testing over things not covered.
30	This item asks students to round five-digit numbers which is not in the standards at this grade level.
30	The problem requires rounding 47,864 to the nearest hundred. There is no mention of rounding in the standard.
30	This item asks for a rounding to the nearest 100. There is nothing in the standards about rounding. This was a 3rd grade standard.
30	The standards in 5th grade don't involve rounding whole numbers to the nearest hundred (the problem wanted students to round 47,864 to the nearest hundred). Standards only mention estimation strategies to solve problems with whole numbers (5.N.3.1).
30	Item 30 requires students to round to the nearest hundred. There is no 5th grade standard that covers this.
30	There is no mention of rounding larger numbers in any specific objective
30	There is no standard at this grade level that specifically deals with rounding for this grade.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
34	The item is a number line with a point on -2. The question asks which point is closest to -2. Why not just ask which point is on -2?
34	The wording "which point is closest to -2 on the number line?" is not correct. Since there is a point plotted ON -2, the wording should say, "which point represents -2 on the number line?"
34	Item 34 asks the student to determine the point "closest to" -2 on the number line, when in fact one of the points given is exactly -2. This verbiage would be distracting to students.
34	The question states "Which point is closest to the location of -2 on the number line?" and the question should state which point best represents instead of closest, because one of the answers is exact.
37	This item asks students to represent probability as a fraction, a topic that has not yet been taught to students, and is not included in the standards for this grade level.
37	The problem requires students to write the probability as a fraction showing favorable outcomes over total outcomes. This has not been taught to them. It isn't in any of the standards.
37	This item is a probability problem with fractional answers. The standard only refers to whether something is certain, likely, unlikely or impossible to happen.
37	The standard 5.S.2.1 only states that students only need to "classify" probability as being certain, likely, unlikely, or impossible. This item asks students to figure probability (3/8) after using a spinner. This skill has not yet been introduced in 5th grade.
37	This is not included in the objectives for this grade level. It requires knowing that a probability is a fraction.
37	We are testing students on information that they haven't had yet. Students do not know how to represent probability yet and they have to do it for this problem.
47	This is an example in which the context does not help, is probably distracting. What is a mat for a track team?
48	The drawing included with this problem has bear tracks straddling a portion of a number line. There are six paw prints, and the problem talks about 5 strides of the bear which might confuse students. Eliminating the paw prints might make this item less confusing to students.
48	This problem uses metric measurement for the label. The standards use the U.S. Customary units.
48	Students haven't learned about centimeters yet (metric system of measurement). The item asks them to add 5 measurements together in order to find the combined length of five strides (answer: 210 cm). Even though students can solve the problem, it might be better to list the measurements in inches, since they have seen the U.S. Customary units of measure in 5th grade already.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
48	Item 48 uses centimeters as the measurement. There are no standards in the SD standards that address metric measure.
52	This item asks students to choose the expression that is not equivalent to the one given. The word not should be capitalized and bolded for clarity for students.
52	It might be helpful to put the word "not" in bold lettering to help students see it better.
65	Item 65 asks students to look at a shape and name it. The answer is square pyramid which is not in the standards.
67	\
68	This item asks students to subtract two two-digit numbers, a skill below the level of expectations for this grade level and not included in the standards.
68	The problem requires students to subtract 28 from 85. That does not fit with any of the standards. It also is too easy for a 5th grade test.
68	This item asks for a simple addition to find out how many more tickets one student has than another. It is way below 5th grade level.
68	This item asks students to add 85 and 28, which is a skill below the expectations presented in this standard for the grade level.
68	Item 1 is a simple subtraction problem This concept is extremely low for a 5th grade problem.
68	Same comment as for #1.
68	This question is too easy for the fifth grade assessment. This problem is just a subtraction problem. It asks students to find out how many more tickets one person sold than another.
70	This item asks students to locate the lines of symmetry of a hexagon, a shape that is not included in the study of symmetry addressed in the standards for this grade level.
70	Students need to find the lines of symmetry for a hexagon. The standard does not mention hexagons.
70	The standard for symmetry is very specific about what shapes will be used for finding lines of symmetry. This item uses a hexagon which is not one of the items in the standard.
70	The standard 5.G.2.1 does not list that students should be finding symmetry of hexagons (as in this item). They should only be finding symmetry in rectangles, triangles, and squares.
70	Item 70 requires students to determine the number of lines of symmetry in a hexagon, although the requirements of the standard are for rectangles, squares and triangles.
70	No hexagon in list of figures for symmetry objective.
70	In this problem students have to find the lines of symmetry in the hexagon. Hexagons are not included in the standard G.2.l. The standard includes finding symmetry of rectangles, squares and triangles. This was the only logical place to put this problem.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
79	Note: one of the distractors (60) is too close to a possible answer. Problem shows a thermometer showing 74 degrees. The temperature changed by 15 degrees. What could have been the temperature?
79	The distractor of 60 is really close---considering the approximation nature of a measure if it is just a little of 74 degrees and drops 14.5 (or 15) degrees---it is really near 60.
84	This is a single digit divisor while the standard only says double digit divisors. Why is the phrase "least number of pages" used in the item when the exact answer is one of the choices?
84	In Standard 5.N.2.1, it states that students are to find the quotient of whole numbers using two-digit divisors. In this particular item, students are asked to divide 360 by 8, which is a single-digit divisor. Also, the word "least" doesn't need to be in the problem. It asks, "what is the least number of pages Rusty will need for the album?" and the exact answer is one of the choices.
84	Item 84 is a simple division problem with a one-digit divisor and does not have a 5th grade standard that addresses this. Additionally, the question is, "What is the least number of pages" that will be needed. However, the exact number needed is listed as one of the answers.
84	This standard N.2.1 states that students are able to find the quotient of whole numbers using two-digit divisors a d this problem deals with a one digit divisor. This standard is the best place for this question though. Also the question asks " What is the least number of pages Rusty will need to put all of his cards in the album?" The answer comes out exact so you could take out the word least in this problem.
85	Item 84 is a simple division problem with a one-digit divisor and does not have a 5th grade standard that addresses this. Additionally, the question is, "What is the least number of pages" that will be needed. However, the exact number needed is listed as one of the answers.
89	This item asks student to analyze a function with only one operation in the pattern. This is not a topic that is included in the standards at this grade level.
89	The problem describes a function using an input output table. It does not match the standard that states using patterns involving more than one operation. This function used 1 operation.
89	This item is a function with only 1 operation which is not a choice in the standards for this grade level.
89	This item fits into standard 5.A.4 because it deals with filling in missing values in a function table.
89	Item 89 required students to figure out a function which is not clearly covered by the standards at 5th grade.
89	This is a function==but not two operations.

Table 5.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 5

Item Number	Comments by Reviewer
89	Standard A.4.1 states "students are able to solve problems using patterns involving more than one operation." This problem is a function which has only one operation, but this is the best place to put this question.
91	This item asks students to label a triangle as isosceles without giving students the lengths of sides. It is not good mathematically to ask students to make assumptions about such things as the lengths of sides based on their visual estimation. The item should include the side lengths in the given triangle.
91	The problem asks students to identify an isosceles triangle. It is difficult to tell what type of triangle it is by just looking. The lengths of the sides should be labeled.
91	This item asks for the best name for a triangle but doesn't give any dimensions on the triangle. The item should have tick marks or give lengths on the triangle so students don't have to guess.
91	This item involves a picture of a triangle and asks which word best describes the triangle. The answer is "isosceles," however the sides of the triangle look EXTREMELY close in length. Students may choose the "equilateral" answer because they can't see the difference. To help with confusion, the sides can be labeled with measurement lengths, such as 5 in, 5 in, and 8 inches, so that students can choose the correct answer.
91	Item 91 requires the student to identify an isosceles triangle, however the picture is somewhat ambiguous and the side lengths should be labeled.
91	Bad mathematics not to label sides which are equal lengths. Making students make assumptions about figures that are not warranted by just looking.
91	Need to give measurements for the sides to help the students, otherwise it is too hard to tell what kind of triangle it is.
92	This meets an objective of grade 4 (equally likely), not grade 5.

Table 6.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 6

Item Number	Comments by Reviewer
92	This item has 12 shapes in a bag. 4 of the shapes are different. The question asks how many different outcomes are possible on the first try. There are 12 different outcomes that are possible. I believe the question should ask "How many different shapes are possible on the first try".
92	The outcome is not clearly specified in this item. Thus, there are two answers--12 (the number of shapes) and 3 (the number of different shapes0.

Table 6.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 6

Item Number	Comments by Reviewer
1	This item asks students to identify a slide which is not included in the standards at this grade level.
1	This problem is a slide but the standard states reflection.
1	This item refers to a slide transformation and there is no mention of a slide in the standard.
1	The standard 6.G.2.1 needs to include translations in the description. This question asks students to identify a figure that has been translated across a line and the standard only mentions reflections.
1	Item 1 requires student to identify a slide which is not under the 6th grade standards but was covered in the 5th grade standards.
1	This item is about slides, objective is about reflections.
1	The standard G.2.1 states that students need to identify reflections. The question on the test asks about a translation and it is not in the standard.
7	This item asks students to pick out the exception from among the choices of figures described. The word except should be in bold print so it is more obvious to students.
11	Capacity not mentioned in the objective.
12	Item 12 requires students to identify 2-2/3 on a number line using unmarked points between 2 and 3 which is not covered in the standard.
12	This is a stretch, no number line is mentioned--and this equivalence is between a fraction and a point on a number line.
16	Problem is more algebraic, but since it has decimals the only fit was in number.
24	Item 24 refers to intervals on a bar graph. Where does this appear in the standards?
30	This item asks students to subtract three digit whole numbers, a skill that is not included in the standards at this grade level. This item is below expectations for this grade level.
30	There is not a standard that matches this problem. Probably because it is way below grade level. It ask students to add two 3 digit whole numbers.
30	This item asks the students to subtract 261 from 343. This is much to easy a task for this grade level.
30	This item asks students to subtract 261 from 343 in order to solve. This task is not included in a standard for 5th grade and is far below grade level.
30	Item 30 is a simple 3-digit subtraction problem and way too low for 6th grade, nor is this skill covered by the 6th grade standards.
30	Way below this grade level.
30	This problem is below grade level. It is a simple subtraction problem with three digit numbers that asks how many more metric tons of gold did one country produce than another. There is no standard to match this to.
31	This item asks students to pick out the exception among the choices of expressions. The word except should be bold to stand out for students, making the task more clear to them.

Table 6.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 6

Item Number	Comments by Reviewer
46	This item asks students to select the figures that are not congruent. The word not should be bold to help students understand the task.
49	This item asks student to calculate the measure of the third angle of a triangle, given the other two and that the sum is 180 degrees. Standards at this grade do not address the degree measure of angles, only addressing the size of angles by the terms acute, obtuse, and right.
49	This problem gives students 2 angles of a triangle and asks them to find the degrees in the 3rd angle given that there are 180 degrees in a triangle. This is not specifically stated in the standard. No place does it talk about degrees.
49	The item gives 2 angles of a triangle and asks the student to find the 3rd angle. This item really doesn't fit this standard very well. I'm not sure if the item is about problem solving or finding the sum of the angles of a triangle.
49	This item fits into standard 6.G.1.2 because it is asking students to describe angles by figuring out the third angle measure, given 2 angle measures in the triangle. However, students have not been exposed to degrees or measuring angles in the past. This problem also involves adding whole numbers, then subtracting from 180 in order to solve.
49	Item 49 uses the number of degrees in a triangle to determine the answer. While the rule is given that the sum of the 3 angles in any triangle is 180 degrees, this problem is really an addition and subtraction problem. Additionally, no where in the standards so far have degrees of angles been mentioned.
49	This question does not fit very well in the standard G.1.2 The question tells the students there are 180 degrees in a triangle and that all three angles must add up to 180 degrees. Students must then give the missing angle. The standard does not talk about degrees, but we assume that the students have studied degrees. I also understand that this question may fit under this standard because it is a way to describe triangles.
58	This item asks students to add three 3-digit numbers which is not addressed in the standards at this grade level, and is below the level of expectations for this grade.
58	This problem does not fit a standard. It requires adding three 3 digit whole numbers. That is too easy for 6th graders.
58	The item asks for the student to add three 3 digit whole numbers. This item is too low for this grade level.
58	The item asks students to add three 3-digit numbers together in order to solve. This skill is not found in the standards for 5th grade and is too low for this grade level.
58	Item 58 requires the student to add 3 three-digit numbers from a table. This is a very low problem for 6th grade students.
58	Below this grade level.

Table 6.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 6

Item Number	Comments by Reviewer
58	This question is too low for this grade level. This question is just an adding problem. It just asks for the total amount of kilowatt-hours produced by three countries.
65	This item asks students to select the probability that she will not draw the letter B from among a set of wooden tiles. The word not should be bold so it stands out and makes it clear to students what their task is.
70	This item asks students to determine how many different outcomes are possible for one spin on a given spinner. Determining the number of different outcomes is not in the standards at this grade level.
70	The standard does not address outcomes. This problem has a spinner with several 2's and two 3's and one 1. The students could find two correct answers for the problem because outcome is not defined. They could count each number and get 6 outcomes or they could say there are 3 outcomes 1,2,or 3.
70	This item asks the student for the number of outcomes on a spinner. The standard doesn't include finding the number of outcomes.
70	The standard 6.S.2.1 asks students to find the probability of a simple event and to express that as a fraction. In this test item, it asks students to find out how many different outcomes are possible, which is not included in the standard.
70	Item 70 requires students to determine how many different outcomes would occur from spinning a spinner that is divided into 6 equal parts and with one part labeled '1', three parts labeled '2', and two parts labeled '3' in random order around the spinner. The question would be confusing to students as they may answer 6 different outcomes - instead of 3 - depending on where on the circle (which '2' or which '3') the spinner landed.
70	The outcome definition must be implied from the game context---this is ok but rather vague and students could think that outcome was the number of spaces on the spinner (6 places to land). The item does not match any objective.
70	The standard S.2.1 does not address outcomes and this question asks the students for outcomes. The question asks "How many different outcomes are possible for a spin...?" Students have not been taught outcomes.
88	The wording in this item "she plans to play a CD with 16 songs including her 2 favorite songs" is confusing. The item asks to find the probability that she will hear her favorite song first (1/16), however, the wording could have been construed as the CD having 18 songs ("including her 2 favorite songs"). The item might have been less confusing if it read "the CD with 16 songs, 2 of which are her favorite."
91	This problem involving a balance scale and n+6 balances 30 is too easy for 6th grade.

Table 6.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 6

Item Number	Comments by Reviewer
92	This item asks students to determine how many different outcomes are possible when drawing shapes from a bag. The concept of different outcomes is not addressed in the standards for this grade level.
92	The bag contains 4 cubes, 3 spheres, 3 pyramids and 1 cylinder. Each one of the individual objects could be an outcome because the outcome is not clearly defined. This results in two answers 12 and 4.
92	Finding the number of outcomes are not mentioned in the standard.
92	The standard 6.S.2.1 asks students to find the probability of a simple event and to express that as a fraction. In this test item, it asks students to find out how many different outcomes are possible, which is not included in the standard.
92	Item 92 requires student to determine how many possible outcomes could occur by pulling one shape out of a bag. There are 4 cubes, 3 pyramids, 3 spheres and 1 cylinder in the bag. Conceivably a student would indicate that there were 10 possible outcomes because pulling one cube would be different than pulling out either of the other cubes. The outcome is not clearly defined in this problem.
92	The item does not match any specific objectives at this grade level.
92	The standard S.2.1 says that students are to find probability of a simple event and this question asks for outcomes. The question needs to specifically state what they are looking for in the outcomes.

Table 7.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 7

Item Number	Comments by Reviewer

Table 7.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 7

Item Number	Comments by Reviewer
2	The problem asks for theoretical probability which is not mentioned in the standard.
2	The standard 7.S.2.1 states that students should be able to find the probability of an outcome. This item asks students to find out how many times a person should expect to land on a section of a spinner. This truly isn't "finding probability," but finding expected outcomes, which is not found in a standard.
2	These are really expected value problems, needs to be noted in this objective
8	The problem uses exponents and exponents are not mentioned in the standard.
8	The standard 7.N.1.1 states that students should be able to compare integers, decimals, percents, and fractions, however this item asks students to compare exponents. Since the standard doesn't include this in the description, it should not be tested.
8	Item 8 requires students to have knowledge of exponents which are not in the 7th grade standards.
8	Exponents are involved, should be mentioned in the objective so it is clear that they are to be taught.
8	Standard N.1.1 states nothing about exponents and this problem had the students choose which expression had the greatest value. All the choices had exponents.
10	This item uses a numeric expression rather than an algebraic expression as stated in the standard.
10	The standard indicates using an algebraic expression while the problem uses a numeric expression.
10	The answers are not in algebraic form which may or may not match this standard.
10	The standard 7.A.4.1 states that students are to create "one-step algebraic expressions representing a pattern." This item asks students to create a "2-step numeric expression," therefore it doesn't follow the exact description of the standard.
10	Item 10 shows numeric expressions in the solutions. However, only algebraic expressions are in the standards.
10	This is not an algebraic expression, but a numerical one---on way to writing algebraic expression--so it fits best with this objective
10	I choose A.4.1 as the standard for this question, but this standard dealt with creating one-step algebraic expressions representing the pattern. The problem given contained a numeric expression representing the pattern.
12	This problem uses a numeric expression rather than an algebraic expression as stated in the standard.
12	The problem is a numeric expression and the standard specifies an algebraic expression.

Table 7.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 7

Item Number	Comments by Reviewer
12	This is a numeric expression, not algebraic, but I believe it requires algebraic reasoning.
12	The standard 7.A.1.1 states that students are to write "algebraic expressions." This item asks students to write a "numeric expression," therefore it doesn't follow the exact description of the standard.
12	Another instance in which the expression is numerical, not algebraic---
12	I choose A.4.1 as the standard for this question, but this standard dealt with creating one-step algebraic expressions representing the pattern. The problem given contained a numeric expression representing the pattern. Need some clarity on what you expect.
16	The students are asked to select the best description of the data given, whereas in the standard they are asked to make a prediction based on the data.
16	The standard S.1.2 says to make predictions from data displayed in a graph and this problem had students analyzing a graph. Need to add that in the standard.
26	This item uses decimals in a problem solving context. The standard limits the number to integers or fractions.
26	This problem uses decimals. The standard specifies fractions.
26	This standard does not include decimal numbers, but I believe the item belongs under this standard.
26	Standard 7.N.2.1 states that students are able to work with integers and positive fractions, however this question is dealing with decimals, which is not mentioned in the standards for 7th grade.
26	Item 26 requires addition of decimals however the 7th grade standards only focus on fractions and integers.
26	This is about decimals, but objective specifies fractions
26	Standard N.2.1 states that students can do all four operations with integers and fractions and this problem deals with decimals. It fits in this standard but should add decimals to the standard for this problem to fit.
30	This item asks students to recognize the net (paper pattern) of a cone. Nets or 2-D representations of 3-D objects are not addressed in the standards for this grade level.
30	This problem requires recognizing nets of three dimensional solids. Nets are not mentioned in the standards.
30	This item asks for a net of a cone. 2 dimensional nets of 3 dimensional figures are not in this standard. (But maybe should be)
30	This item asks students to identify a 2-dimensional net from a 3-dimensional figure. This skill is not included in the standards for 7th grade.
30	Item 30 displays nets of shapes for a student to choose, however nets have not been introduced in the standards.
30	No objective on relating three-dimensional objects to a two-d net.

Table 7.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 7

Item Number	Comments by Reviewer
30	Standard G.1.1 only talks about two-dimensional figures and this problem deals with a net of 3-dimenional figures. This problem would fit well in 8th grade.
38	This is only a one-step---objective calls for more than one-step.
45	This item uses an equation rather than an expression as stated in the standard addressing evaluating for given values of variables.
45	The problem uses replacement values for variable in an equation. The standard indicates that replacement should be done with an expression.
45	This is an equation, not an expression, but the task is to just plug in numbers and see which values make the equation true, so I believe it falls under this standard.
45	The standard 7.A.1.1 states that students are to be able to write and evaluate algebraic expressions, whereas this item asks students to evaluate an algebraic equation.
45	Emphasis is evaluating (but it is an equation rather than an expression as stated in the objective).
45	The standard A.1.1 states that students are able to write and evaluate algebraic expressions and this problem has an equation and not an expression.
54	Item 54 requires the student to find the perimeter of a simple rectangle with the dimensions of two sides given. This is a very low DOK problem for a 7th grade student.
56	This item uses decimals in a problem solving context, where the standard is limited to fractions and integers.
56	This standard only refers to integers. There are decimal values in this item (money), but I believe the item should be with this standard.
56	Standard 7.N.2.1 states that students are able to work with integers and positive fractions, however this question is dealing with decimals, which is not mentioned in the standards for 7th grade.
56	Item 56 requires the student to multiply and subtract decimals. Standard 7.N.3.1 only relates to fractions and integers.
56	The standard N.3.1 only deals with fractions and integers and this is a decimal problem. The problem fits here if the standard would include decimals.
57	This question is written poorly for kids---should say after the figures after a translation and then a rotation of 45 degrees.
61	This problem uses decimals in a problem solving context, whereas the standard is limited to fractions and integers.
61	The item requires students to multiply and divide decimals. The standard specifies fractions.
61	This item uses decimal fractions. The standard only refers to fractions and integers. I believe the item falls under this standard with that in mind.

Table 7.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 7

Item Number	Comments by Reviewer
61	Standard 7.N.2.1 states that students are able to work with integers and positive fractions, however this question is dealing with decimals, which is not mentioned in the standards for 7th grade.
61	Item 61 also requires the student to multiply and add decimals however standard 7.N.2.1 only refers to fractions and integers.
65	The question should repeat the 90 degrees clockwise rotation.
77	The item uses a scatterplot which is not mentioned in the standards.
77	The item asks which scatter plot best represents the data. The standard doesn't ask the learner to make a scatter plot, just to interpret the graph.
77	The standard 7.S.1.2 states that students are to make predictions from data displayed in a graph, however this item asks students to choose which scatter plot best represents data in a table. It isn't truly asking them to make predictions, which is what the standard describes.
77	Standard S.1.2 states students need to make predictions from a graph and this problem they have to chose which is made correctly.
87	This item asks students to evaluate equations for a given value of x, whereas the standard asks students to do this in expressions only.
87	Item uses an equation while the standard specifies an expression.
87	This item is an equation, not an expression, but you just have to plug in a given value for "x" to see which equation is true so I think it fits under this standard.
87	The standard 7.A.1.1 states that students are to be able to write and evaluate algebraic expressions, whereas this item asks students to evaluate an algebraic equation.
87	Item 87 is plugging a number in for a variable in an equation. Standard 7.A.1.1 refers only to expressions.
87	Another example of evaluating an equation, not an expression---but the intent is more evaluating than solving so fits this objective better.
87	In this problem you are using replacement values for variables, but the standard talks about expressions and not equations and this is an equation problem.
89	The item asks for expected outcome while the standard states specific outcome.
89	Another expected value problem, not clearly specified in objectives.
90	Too low for this grade level.
91	Another item that asks for expected outcome while the standard states specific outcome.
92	Great item!

Table 8.5
Source-of-Challenge Issues by Reviewer
South Dakota Mathematics 2008 Grade 8

Item Number	Comments by Reviewer

Table 8.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 8

Item Number	Comments by Reviewer
7	No mention of combinations in the objectives.
16	No combinations in objectives, so this becomes a problem solving.
21	If you are asking for an estimate, the answers should not be to the nearest penny. You are really asking to find the answer to the nearest cent, you should ask such.
24	The problem should be rewritten to read: Which equation represents the sentence [not expression] below? and the sentence should be punctuated as a sentence: "Seven more than three times a number is eight." changing the lower case s to a capital S and putting a period at the end. It is important to help students learn that mathematical expressions equate to phrases and that equations equate to sentences.
24	The problem should read Which equation represents the sentence below not expression. The sentence should be cleaned up to read "Seven more than...is eight." It needs a capital letter and period.
37	This item asks for the number of different ways a school package could be put together from a list. This is really using the fundamental counting principle, but it is not in the standard.
37	Combinations are not mentioned in the probability section, so it appears this is just a number problem.
37	The standard 8.S.2.1 should say use the fundamental counting principle.
43	This item has a drawing of 4 rectangles. The way the rectangles are arranged makes it very confusing to understand what the item wants.
43	The intersecting bricks on this drawing are confusing to the reader. Instead of using 4 bricks, they could have used only 2 to get the same point across in the problem.
43	The drawing in this problem is very confusing. I think it would throw students off.
48	This item asks to graph an inequality. The standard doesn't address graphing inequalities.
48	In standard 8.A.2.1, it states that students will write and solve one-step inequalities, however, this problem asks students to actually GRAPH the inequality. This is not mentioned in the description for the standard.
48	The standard A.2.1 does not state anything about putting an inequality on a number line. The standard states that students are to write and solve one-step inequalities along with two- step 1st degree equations.
49	The word not in the problem should be bold print to help students understand the problem.
52	This item asks to write the equation from the line on a graph. The standard doesn't have this task in it.
52	Standard 8.A.3.1 states that students are to determine slope or x and y intercepts from a graph. This item asks that students form an equation from a graph, which is not mentioned in the description in this standard.

Table 8.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 8

Item Number	Comments by Reviewer
52	This standard doesn't exactly ask for an equation but for the answer you have to choose an equation as an answer. The standard states that students will determine slope from a line or ordered pairs and identify x and y intercepts fro a graph. You need to do all of this to write your equation but they don't state you have to write an equation.
53	Standard 8.M.1.2 states that students should be able to find surface area of rectangular prisms and cylinders, however this item asks students to find the surface area of a rectangular pyramid.
62	This is the only item that I found that has two simultaneous events which is specified in this objective.
64	The word not should be bolded.
70	The problem should tell what shape the flag is and not expect students to assume that information.
71	This item asks to find the mean from a data set. The standard does not include finding the mean from just a data set. It should.
71	Standard 8.S.1.1 is too specific to include this item. The standard states that students are to find mean, median, mode and range from a stem-and-leaf plot and a line plot. This question asks students to find the mean from a data set.
71	Item 71 requires the student to determine the mean from a data set. The corresponding standard states "Students are able to find the mean, median, mode, and range of a data set from a stem-and-leaf plot and a line plot." Perhaps this could be modified to read, "...and range from a data set, stem-and-leaf plot, and a line plot."
71	The standard S.1.1 states that students are able to find the mean, median, mode, and range of a data set from a stem and leaf plot and a line plot. This limits the questions you can have. This problem did not deal with steam and leaf or a line plot, but this is where the problem needed to be placed. I believe the standard should state that students are able to find the mean, median, mode and range from a data set or a stem and leaf plot and line plot.
84	This is a 2 step inequality while the standard specifically states 1 step inequalities.
84	Standard 8.A.2.1 states that students are to write and solve one-step inequalities. This question asks students to write a two-step inequality, which is not included in this standard.
84	Item 84 requires the student to determine the answer based on a two-step inequality. The closest standard (8.A.2.1) specifies 'one-step' inequalities.
84	The standard A.2.1 says it should be a 1 step problem and this is a 2 step problem.
86	This is a very simple problem for 8th grade. It is a simple problem of rounding numbers to the nearest hundred thousand.

Table 11.5
Source-of-Challenge by Reviewer
South Dakota Mathematics 2008 Grade 11

Item Number	Comments by Reviewer

Table 11.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 11

Item Number	Comments by Reviewer
4	This item asks students to simplify and inequality and represent the answer as another inequality. The standard asks students to represent answers to inequalities on number lines.
4	The item solves and inequality but does not represent solutions on a number line as stated in the standard.
4	d.
6	Item is not a multi-step equation, which the standard describes. It is a one-step equation.
6	Although Item 6 is not a multi-step equation, this was the closest standard to the problem.
6	Objective does not specify solving, but there is nowhere else it fits. It is an appropriate skill for this grade
6	The standard for A 2.1 states you need to transform multi-step problems and this is just a 1 step problem.
7	There is no standard that has students write algebraic equations from a problem situation.
7	This problem is asking students to write equations, but the standard asks students to transform them.
7	Item 7 uses two variables to represent the problem.
7	There is no standard that has students write algebraic equations.
20	The standard says to compare data sets and this item just wand the mode from 1 data set.
20	This item is not comparing data sets (as the standard implies), but only asking students to find the mode of one data set.
20	The standard S.1.2 states that students will compare 2 data sets and this question the students are given one data set to find the mode.
21	Item asks the sum of the interior angles of a triangle. This is below grade level expectations.
22	Exponents are not integral, but 1/2 seems ok for this grade
23	There is not an objective focusing on growth or on percents. If this is to be at all practical for Grade 11, percents should be mentioned as well as true applications.
30	In Item 30, the wording of the question in this problem is very awkward. Perhaps they could ask, 'Which is the closest ratio of the mean to the range?'
30	This question needs to be cleaned up. The question is very hard to read, it needs to be written in a different way.
31	The item does require choosing a suitable unit; however it does not ask for rate of change.
33	Standard states expression and this item uses an equation.
35	The item involves calculating slope but does not require interpretation of the slope.
37	Requires solving and inequality but not showing solutions on a number line.

Table 11.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 11

Item Number	Comments by Reviewer
46	This would be a more reasonable problem if the price was $4.19 (and clearly rounded to $4)---but because it is price, and you want to know if you have enough money, then one would be safer to use $5 (or a 5 rather than a 4 in the expression)---MATH SHOULD MAKE CENTS (SENSE).
47	Only need to check the first pair of coordinates in each table to eliminate the first three tables---poor distractors.
49	This item just asks for the mean of 1 data set. The standard says to compare measures of central tendency of data sets.
49	Item is not asking students to compare data sets, as the standard implies. It is asking them to find the mean of one data set.
49	Standard S.1.2 states that students are able to compare multiple 1 variable data sets. In this problem you are just finding the mean of three numbers.
51	This item is a compound probability item---not mentioned in the objectives.
53	The translation is too easy for 11th grade.
56	Expected value is not mentioned in the objectives which is the essence of this item.
57	No clear objective for evaluating expressions at this grade level.
59	This item is about proportions---since it is a percent it is a proportion. However, I feel strongly that there should be a home for this type of item that specifies percent.
61	Graphs could be a little clearer to see the difference between A and C. If anyone eyesight is a little bit bad, it is a strain!
64	This item asks students to determine how many times two travelers meet along trips that are each represented as a set of non-linear connected points. Students are interpreting a math model as stated in the standard, but the model is not linear. Also, it might be helpful to students to bold the phrase "after they began" so they are clear that they are not to count the starting point.
64	Item involves two sets of nonlinear connected points and asks students to identify the number of intersections requiring them to interpret the graph. Interpretation is not included in the standards. The words "after the begin" should be boldfaced or underlined.
64	Item 64 shows a double line graph which is not specified in the standards, so 9-12.S.1.3 was chosen (scatterplot, box-and-whisker, histogram.)
72	Again, an objective about percents would be appropriate.
85	This item asks students to state the effect on the volume of a pyramid when one length is doubled. The effect on volume when a side length is changed is addressed in the standards for grade 8, but is not in these standards for grades 9-12.
85	The items requires understanding what happens to volume when an edge of a pyramid is doubled. Volume is not addressed in the standard.
85	Standards do not cover volume, so put Item 85 (volume of a pyramid) in with standard for using a formula for area.

Table 11.7
Notes by Reviewer
South Dakota Mathematics 2008 Grade 11

Item Number	Comments by Reviewer
88	It might clarify this item a bit for students if it were to state that the value of x in the equation is the same as that in the expression. Students should not be expected to assume that, and it is essential to being able to solve the problem.
88	The items requires students to solve an equation and then replace a variable. Please add a statement noting that the x represents the same quantity in both the equation and the expression.
88	It really involves these two objectives. It is a strong enough item to be counted twice in the analysis.
91	Students are asked to find an experimental probability which is not addressed in the standards for this grade level.
91	The items requires finding the experimental probability which is not included in the standards.
92	There is no objective that even mentions this.

Appendix D

Debriefing Summary Notes

South Dakota
Grades 3-8 and 11
Mathematics
2008

Table 3.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 3

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· For the most part, the most important topics were assessed. The standard on telling time was minimally assessed, and might have received more attention. There seemed to be too much emphasis on similarity and congruence and on rounding two- and three-digit numbers.
· There were no questions identifying cubes, spheres, or cylinders. Overall I don't think the Measurement standard was assessed as well as the other content areas.
· Yes, for the most part. Perhaps there could be a few more items on the measurement standard and a less items on the number sense strand as well as standard g.2.1 (similarity and congruence).
· Standard 3.M.1.3 (identifying U.S. Customary units of length, weight, and capacity) was not covered. For all other standards, the items covered the most important topics.
· There seemed to be a heavy emphasis on being able to add and subtract whole numbers up to three digits. At third grade, this is a recall level and three to five questions should determine the student's proficiency level. Additionally, a number of problems were devoted to rounding to the nearest ten or hundred. While important to insure that the student remains proficient with this skill, it again would seem fewer questions would determine this. Although a number of the questions covering both of these skills (adding and rounding) used money as the basis, it was not really an assessment of a student's understanding of money but of the skill of adding or rounding whole numbers.
· Although the number items involving operations seemed to be high, this is a significant part of the work at this grade level. I would have expected more on computation in contexts and a wider level of types of computation. The other area that was weak fraction concepts. A very limited look at fractions (that of "out of" or ratio meaning) was all that was assessed. Students should have more opportunity to learn about fractional parts of area, length, sets where a fractional part is linked to something like equal shares. On the other hand, there was an over emphasis on the one probability objective. Measurement was greatly slighted. Only one item on using a ruler. The money objective was not clear enough to know whether it really included adding money (in decimal form) and solving other problems of this type. Many of these problems are not truly measurement, but just numbers.
· I thought the measurement standard should have more questions on telling time. I also think that 3.M.1.3 should be covered. The measurement strand needs more questions.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The items were all written at the lower DOK levels, those addressing memorized and procedural knowledge. There was no attention on the assessment, and little attention in the standards, to students' skills in reasoning, critical thinking, or conceptual knowledge. There are many important concepts students should be developing at this grade level but they are not reflected in either the standards or the assessment items.
· Strategic thinking was not assessed in this test.
· No, the algebra and the Geometry standard did not have the DOK levels that were expected. Conceptual understanding, explanations, and procedures are very hard to assess, but these are

what the standards call for to attain the desired DOK level.
· There were no questions that were covered by a DOK level of a 3. Standard 3.S.1.1 could possibly have an item that was assessed by a DOK 3 instead of a DOK 2.
· All the questions seemed to be at a 1 or 2 DOK level. This requires very little thinking or reasoning on the part of the student. However, it is also difficult to measure more in-depth "strategic thinking" with a multiple choice test.
· There was an abundance of level 1 items, very few level 2 and no level 3. While it may be appropriate not to have many level 3 items, there should be fewer items and more level 2 items.
· I think the DOK of the questions should have been higher for the standards, because they did not match the content standard DOKs that they wanted.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards were written at a very specific level. Most of the concepts appropriate to this grade level were reduced to memorized knowledge, e.g. the relationships between operations, perhaps as a result of the desire to make the standards very specific.
· Yes, for the most part.
· Yes. There was only one item that may have been too "wordy" for the grade level.
· It seems that many of the 3rd grade standards are also written at lower DOK levels. Does this say something about lower expectations for students or does it say something about writing standards to fit multiple choice test?
· The objectives are really vague on problem solving with whole numbers including division problems. The one objective in algebra on division is really a number objective with a slight emphasis on division and multiplication being inverse operations.
· It seemed like most of the questions dealt with memorization facts/algorithms. Questions need a few more higher level questions.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (2) : 29%
iii. Needs slight improvement (5) : 71%

E. Comments

· This is a very long test for students at this grade level. Eliminating some of the weaker items that assess rounding, and whole number computation, and similarity and congruence would improve the test and shorten it as well.
· I believe there are too many items on this assessment. I think we could delete some items from the number sense strand (rounding) and objectives S.2.1,(probability certain or impossible) and G.2.1(similarity and congruence) I also think that the algebra strand on the standards has DOK levels that are too high for the objectives.
· The improvement mainly comes on the match of emphasis on certain objectives. Everything is rather treated (except for measurement) as the same grain size of objective. This does not reflect the usual emphasis in the curriculum at this grade level.

Table 3.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 3

Table 4.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 4

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· The commutative property of addition and multiplication was only assessed with one item, as was the skill of adding and subtracting decimals. I would have expected those topics to receive more attention at this grade level. Additionally, the skills of determining the median and the range of a set of data were not addressed, even though that standard received the most attention of all of the standards. There was also more attention than I would have expected to problems with money.
· This assessment does not include questions on range and median. It also is lacking questions that ask students to compare values of mixed numbers - 4.N.1.3 Standard 4.N.1.1 only has one question requiring students to read and write word names. It did not test large numbers.
· Yes, I think that all of the standards were covered very well. However, range and median were not on the assessment anywhere but are on the standards under s.1.2.
· Standard 4.S.1.2 tested mode twice, however did not test median or range. There was also an item on mean, however this was not mentioned in the standard at all.
· There seemed to be a number of standards where one or two questions were asked while other standards (4.A.3.1 and 4.S.2.1) were overloaded with lower level DOK questions.
· There were no items that tested range or median. Very little on fractions, adding and subtracting decimals (but with a calculator why would you assess much on these), little on measurement such as estimating length.
· There were no questions on median and range for the standard 4.S.1.2. They just had questions that dealt with mean. For the questions dealing with the standard 4.G.2.2 it only dealt with identifying a slide which is an obvious choice for kids because they have not done anything with rotation and reflection. Can these be added to the standard?

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The DOK levels of all of the items were only levels 1 and 2. There was no attention to measuring students' ability to solve non-routine problems, to do critical thinking, or to their ability to extend beyond just procedural or memorized mathematics.
· This assessment had too many Level 1 questions. The translation problems were too easy for objective 4.G.2.2
· Yes, for the most part the DOK levels were appropriate. The algebra strand may have been a little low. It would also be nice to see some level 3 questions on this assessment.
· Standard 4.S.2.1 was written at a DOK 2, however all 6 problems were tested at a DOK 1.
· Standard 4.A.3.1. and 4.S.2.1. had a high number of questions for this standard, however the DOK level was low (1) for all of them. It would seem half the number of questions could have been asked with some requiring a higher level of DOK.
· Although this assessment seemed to have more Level 2 items than grade 3, there were few that really pushed the thinking. There were no Level 3 items.

Table 4.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 4

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards were very specific, including a limiting listing of specific concepts within a topic. There were issues on the assessment that arose from the very specific nature of the standards. For example, the statistics standard includes only median, mode and range rather than a generalized "measures of central tendency" making inclusion of mean on the assessment problematic. Another example is the precise distinction between when students will work with expressions and when they will work with number sentences.
· Yes. In some cases, however, the specificity of the standards caused a non-alignment with the test item.
· I thought that some standards were too specific, since some of the items were written outside of that specificity (ex: mean, fractions). There were a couple problems that I thought were written at a level that was too easy for 3rd grade (item #2 and some rounding questions).
· There seemed to be a number of problems that specifically addressed 3rd grade (see notes) standards without involving a continuation of 4th grade standards. Students were expected to answer a question about mean which they have not been introduced to according to the standards. However, no where in the test are they assessed about median and range. Additionally, there did not seem to be any questions on improper fractions or questions specifically addressing mixed numbers.
· The expectations were not always clear and often not inclusive of the ideas being assessed. For example, divisible, prism, triangular prism, and other vocabulary was used that was not specifically mentioned in the objective. One other prominent example was the use of likely events; the objective specifies equally likely. When does a even qualify for being likely???? The measurement objectives does not include knowing equivalences; yet this was tested. There is little on solving word problems with the four operations.
· There was no standard that dealt with substitution and there were some problems that had substitution in them.

D. What is your general opinion of the alignment between the standards and assessment:

iii. Needs slight improvement (7) : 100%

E. Comments

· This test seems too long for students at this grade level. There were some standards that were addressed six or seven times, when four or five might be sufficient.
· There are too many items on this test. I believe that 5 or 6 items per strand would be sufficient.
· I thought that this test was a bit too lengthy for this grade level. For example, standard 4.A.3.1 had 8 items, which I believe it far too many for one standard. Also, standard 4.S.2.1 had 6 items and it was devoted simply to "equally likely or not equally likely outcomes." There were approximately 8 items that did not fit with a standard (either the concept wasn't mentioned or the standard was too specific).
· The improvement needs to be in the description of the objectives and the quality of the items===more than in the alignment.

Table 4.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 4

· There were too many questions for the standard 4.S.2.1 on probability. The measurement standard M.1.2 and standard A.4.1 were to close to choose sometimes. It was hard to figure out if the standard wanted unit rate answers or if it wanted pattern identification.

Table 5.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 5

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· The items did not address transformational geometry (turns or flips). There were no items measuring finding prime or composite numbers or factors of whole numbers. There were no items addressing squares of numbers, and none addressing multiplication and division of decimals that were not also money problems. These are all topics I would have expected based on the standards to be assessed at this grade level. There was extremely heavy attention given to the standard on writing one-step equations and solving them, on problems with money (which was very heavily measured in previous grades as well), on solving problems with estimation, and on analyzing data.
· No, there were too many problems for some standards (5.M.1.3 and 5.S.1.1) and no problems for others such as determining squares, multiplying and dividing by decimals, finding primes, composites and factors of whole numbers. These are important concepts.
· For the most part, yes. There were too many item that were about money. If they were supposed to be about decimal computation then they need to be in another context other than money. There were also no items for standard N.2.3 or N.1.2.or G.2.2.
· 5.N.2.3 (multiplying and dividing decimals by natural numbers) was not covered in this test. 5.N.1.5 (determining the squares of numbers 1-12) was not covered on this test. 5.N.1.2 (finding prime, composite, and factors of whole numbers) was not covered on this test. 5.G.2.2 (rotations and reflections) was not covered on this test.
· There seemed to be a lot of items that covered 5.M.1.2 - perhaps more than necessary. I did not notice any questions that addressed turns or flips (rotation or reflection.) Additionally, there appeared to be few questions addressing fractions - determining equivalent fractions (5.N.2.2.) or multiplying and dividing decimals (5.N.2.3) 5.N.1.5 was not addressed (determining squares of numbers.) 5.N.1.2 (finding prime, composite numbers and factors of numbers did not seem to be addressed.
· There is little variation in the items. Many are only a slight variation of the other when there is a lot of items that could be testing different aspects of an objective. There was little on understanding numbers (fractions and decimals at this level), little on problem solving.
· Standard S.1.1 had a lot of questions with interpreting data from graphs but very little questions on S.1.2 and S.2.2. These standards had one question each. Standard 5.N.1.2 had no questions dealing with prime or composite. Standard M.1.2 is too heavy on the money problems and some of the other standards under measurement should have had more questions. For example standard M.1.3 there was only one question on converting and this standard should have more. Standard 5.M.1.1. only had one question and that deals with elapsed time. The standards under number sense needed to have more questions for this strand. The test was very weak in this area. Because of the money questions in M.1.2 it was hard to place them in the number sense strand where they maybe should have gone.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The items in the area of statistics and probability were mostly lower DOK levels than expected based on the standards. In general, strategic thinking was not addressed in either the standards or

the assessment items. It is important for students to have the opportunity to develop and demonstrate skills in strategic thinking, critical problem solving, and conceptual development. These standards and assessment items do not allow for that.
· Again, for the most part. Standard S.1.1 on statistics is at a DOK level 4 on the standards. It is nearly impossible to reach a level 4 on this type of assessment, I don't know how you would do that.
· Standard 5.G.2.3 states that students are to use coordinate grids to represent figures. Question #7 asks students to translate a figure on the coordinate plane and it is at a DOK of a 2. The standard only states this to be a DOK 1. Standard 5.S.1.1 could be assessed up to a DOK 4 and there were only 5 questions that were all assessed at a DOK 2.
· The DOK levels seemed to be at a higher level than the previous grades' (3 & 4) tests. However there still seemed to be a number of questions included that were at a lower DOK and/or grade level.
· This had more level 2 items--but they were very low level 2.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· These standards were written at a very specific level, at times too specific. This level of specificity can complicate assessment and restrict instruction.
· Sometimes the standards were written with too much specificity. For instance, the symmetry one (5.G.2.1) which stated students were supposed to find lines of symmetry for only 3 figures.
· Some of the standards were too specific and didn't allow any room for deviation of any kind. (symmetry of only specific shapes for example). I thought they were appropriate for this grade level.
· Standard 5.S.1.1 is very specific as to which type of graphs are covered. A circle graph was tested and is not listed in this standard. Standard 5.S.1.2 is specific to finding the mean. It should be broader to include all measures of central tendencies (median, mode and range).
· Some standards are written with so much specificity it is difficult to align test questions that do not meet exactly that specificity.
· The objectives are getting more obtuse. Some are so specific that they limit the intent of the standard.
· Sometimes the standards were written too specific and it was hard to find a place to put the questions. Standard N.2.1 was too specific in saying you need 2 digit divisors and said nothing about 1 digit divisors. Standard 5.N.1.3 was very specific on identifying certain fractions and it limited itself to other fractions. Standard 5.S.1.1 talked about bar graphs, line graphs, pictographs and line plots, but not about circle graphs. There was a problem with a circle graph in it.

D. What is your general opinion of the alignment between the standards and assessment:

iii. Needs slight improvement (7) : 100%

E. Comments

Table 5.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 5

· This test is too long for students at this grade level. Removing some of the six or seven items on those heavily tested standards would shorten the test, making it more appropriate for this age student. There are also a number of items that need revision to make the test more mathematically sound, and to make the items of higher quality.
· There needs to be a better balance between the standards and assessment. There are too many questions for some standards and no questions for other standards.
· I thought this assessment was too long. How many sessions would the students have to complete this test? If given in a single day, they would be just marking answers by the end of the test to be done with it. The number of items for some of the standards needs to be adjusted...fewer for some and more for others.
· The standard 5.M.1.2 (solving problems involving money, especially unit price) was heavily focused on. The standard 5.N.3.1 had 8 items, which is far too many for one standard. I felt that the standards limit themselves and should be more general when it comes to computation.
· The content of the way the standards are written should be addressed and possibly clarified or rewritten.
· The alignment is off because of the wording of the objectives and the over emphasis on some rather trivial objectives (the probability one at this level). There is also an over-emphasis on translations problems (writing an algebraic equation or expression) for a problem.
· Should just have a section on the test dealing with number sense. It is really hard to see if the students are growing in that area.

Table 6.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 6

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· There were no standards that were not addressed, although there were topics within some of the standards that were not assessed. For example, the standard addressing using basic shapes to demonstrate geometric concepts includes the topics of symmetry (assessed twice), congruence (assessed once), similarity (not assessed), perpendicular (assessed once), parallel (not assessed), and reflections (not assessed).
· Yes, the items did a good job of covering the standards for this level. The standard A.1.2 and A.3.2 maybe have too many items.
· In standard 6.G.2.1, similarity wasn't covered on the test. Also, the standard would like students to identify a reflection, but only a translation was tested, which is not mentioned in the standards. For standard 6.M.1.1, students were never asked to convert measurements within the metric system. There weren't very many conversions between fractions, decimals, and percents (standard 6.N.1.1).
· There were a lot of questions that were under 6.A.1.2, 6.A.3.2, 6.G.1.1. So the question is were the questions actually written for these standards or were not written well enough for them to be placed under another standard. There did not seem to be any questions assessing student knowledge of prime and composite numbers.
· There is not sufficient coverage of solving problems involving numbers. Most of them were rate problems. Area items were very simple--about fourth-grade level in most states. Statistical items were sparse and at a low level. It does not appear that much progress is being made on these topics.
· For standard S.1.1 they need to add a few more questions on mean, mode and range. For standard N.1.1 there needs to be more questions on representing and converting between fractions, decimals and percents.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· For the most part, the items covered the DOK expected by the standards--the lower DOKs that measure only memorized and procedural mathematics. Neither the standards nor the assessment items addressed DOK level three--strategic thinking. There are many important concepts and critical thinking skills that are not addressed and are appropriate for students at this grade level.
· Yes, the DOK levels were appropriate for most of the items.
· Standard 6.S.2.1 should only be assessed at a DOK 1, however the exam has all questions at a DOK 2.
· It seemed as if the questions given required students to perform at the required DOK.
· There were more level 2 items, but most of these occurred in the writing of algebraic expressions to represent a situation. There were few extended problem solving opportunities so most of the problem solving was at level 1.
· I think the probability questions should have DOK of 2 and not 1.

Table 6.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 6

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards are very specific and basically appropriate for this grade level. There was some confusion about two standards that seem to both address the same specific skills--computation with decimals. There wasn't a clear distinction between the two standards.
· Yes... Standard 6.s.2.1 should include finding the number of outcomes.
· The standards were written at an appropriate level of specificity. Standard 6.S.2.1 (probability) might have been too specific, due to the fact that some questions dealt with outcomes, instead of simply finding the probability of a simple event.
· There were a few questions that were given that were at a lower grade level but not as many that seemed to appear in the previous grades.
· The standards were specific enough that most items could be classified unless they were below grade level. One exception was in statistics.
· Standard G.2.1 was to specific when it said identify only a reflection.

D. What is your general opinion of the alignment between the standards and assessment:

(1) : 14%
ii. Acceptable Alignment (4) : 57%
iii. Needs slight improvement (2) : 29%

E. Comments

· This test was very long. There were a total of 37 items across five of the standards--four of them algebra standards and one geometry. In general there was heavy emphasis on algebra and light emphasis on the other areas, with the exception of the one geometry standard.
· This test is still too long, but aligns nicely with the standards.
· I felt that this test more accurately assessed the standards (with the exception of probability). I did feel that standard 6.A.1.2 (7 items) and standard 6.A.3.2 (9 items) were too heavily tested.
· There is minimal coverage of all the objectives---there is a problem in my mind of different grain size of objectives---some deserve more attention than others.
· Standard A.3.2 had 8 questions for that standard. Standards A.1.2 and 2.1 also had 7 questions each. It seemed pretty consistent in the algebra strand Overall all though I thought the test had a good number of questions for each strand.

Table 7.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 7

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· There were items assessing most of the standards but not all of the topics within the standards. For example, there was minimal use of negative integers in the assessment items, whereas they were specifically listed in many standards indicating students are commonly using negative numbers at this grade level. Also, many of the items addressing standards directed to use of fractional numbers instead used decimal numbers, so even though the there were a number of items assessing those standards, they did not measure students' skills with fractional applications. There was disproportionately heavy emphasis on the standard addressing one-step patterns in algebra, on geometric transformations, on computation, and on probability. There was relatively even attention across the broad topics of algebra, geometry, number sense, and statistics and probability. There was relatively less attention to the broad topic of measurement.
· No, Standard 7.G.1.2 had only 1 assessment item but contains several elements of geometric figures. In the number sense section, there were too many problems assessing standard 7.N.2.1 but few assessing 7.N.3.1 problem solving. There were no items assessing inequalities on a number line. There were no items assessing area and circumference of circles. There also are no questions on converting within the metric system. The measurement area was weak.
· Yes, the items covered the standards very well. Measurement could have used a few more items. There were no items that asked for the student to find a radius or a diameter .
· In standard 7.A.3.2, I thought that there should have been an item assessing "better buy." In standard 7.G.1.2, there were no questions dealing with vocabulary, such as altitude, midpoint, bisector, radius, etc. In standard 7.M.1.2, students were never asked to find the area of a figure or circumference of a circle. There were formula pages in the booklet and they were never used. This might be a distraction to students if the formula pages are never used.
· There did not seem to be a lot of problems using negative numbers. Additionally there were not any problems regarding circumference, areas of a circle, triangles, trapezoids and other shapes. There seemed to be only one question regarding elements of geometric figures. Otherwise, there seemed to be a good spread across the standards.
· The number strand is rather weak in true problem solving. A lot of emphasis on geometric transformations that are rather routine for this grade. The great emphasis on modeling situations found in grades 5 and 6 was not found in this level; in fact, there were very few items. The measurement strand does not contain assessment items for area of circles, combinations of shapes, or irregular figures.
· Standard M.1.2 could have had more questions with as many important concepts that are in this standard. There was a formula sheet given to the students but there was not a problem that really required them to use them except for rectangles or squares. There were no problems on using formulas for circles, trapezoids or triangles. Standard G.2.1 was very heavy on transformations and G.1.2 had only one question on elements of figures which is important. Standard S.1.1 needed a few more questions on mean, median, mode and range. Standard S.1.2 was very heavy on reading scatter plots.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The DOK levels expected by the standards were covered by these items for the most part. There was no attention in either the standards or the assessment items to critical thinking, strategic problem solving, or conceptual knowledge--DOK level 3. There are many important concepts for students at this grade level that are not addressed in a set of standards and assessments that focus only on memorized knowledge and procedural mathematics.
· Overall the test seems rather easy for 7th graders.
· Yes, for the most part. The algebra standards for A.1.1 and A.2.1 are at a level 2 on the standards, but most of the items were at a level 1. Also, there needs to be some tweeking of the standards to include some equations in standard A.1.1 rather than just expressions.
· For the most part, the items covered the correct DOK levels. In standard 7.N.1.1, the questions were all assessed at a DOK 1, whereas they could've been assessed at a DOK 2.
· Some of the questions that addressed a standard with a DOK of 2 were only of a DOK 1 or seemed fairly easy for a 7th grade student.
· Although the measurement objectives were classified as level 1, at grade 7 more thinking should be required and the assessment should push the students' thinking. Most of the level 2 were rather routine.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards were written very specifically. The limiting of the number type to just fractions and integers in many of the standards seems problematic when students have been working with decimals in the previous grades. The limiting of some algebra standards to just expressions or just equations seemed also to be problematic. For example, replacing a variable with a given value in an equation is essentially the same skill as it is in an expression, yet the standards limit that skill to just expressions.
· Sometimes I feel they were written too specific. For instance 7.A.1.1 states evaluate algebraic expressions and should probably say expressions and equations.
· Yes, some of the standards are maybe too specific. Such as N.2.1 only addressed integers and fractions. Should decimal fractions also be included in this? If not, then where should they go? They are appropriate for this grade level.
· I thought that overall, the specificity was appropriate. In standard 7.S.2.1, the standard should have mentioned "expected outcomes" instead of simply "finding probability." Also, there were multiple problems that dealt with decimals, however, no standards mentioned using this skill (they all worked with fractions and integers). Also, in standard 7.S.1.2, scatter plots may need to be added to the list of possible graphs. They were tested multiple times, but were not mentioned in this standard. There were multiple questions which focused on using "numeric" expressions, when the standards 7.A.1.1, 7.A.2.1, and 7.A.4.1 only address "algebraic" expressions. Lastly, I found that in standard 7.A.1.1 was tested with some items that addressed algebraic equations, when the standard is only supposed to address algebraic expressions.
· There were a number of problems such as ones using decimals that did not fit the standard because the standard specified fractions and integers. Additionally there were a few problems that really fit with 7.A.1.1 under the 'replacement of values for variables' but the problem gave an equation and the standard specified expressions.
· Noted in the notes for items, several objectives did not clearly contained the type of item that

was assessed----exponents, expected value, clarity of expression vs. equation.
· Standard S.1.2 should state make predictions from data and analyze data from a graph otherwise it limits this standard.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (1) : 14%
iii. Needs slight improvement (6) : 86%

E. Comments

· There were two general issues needing attention--algebraic vs. numeric expressions, and equations vs. expressions. Algebraic expressions should be distinguished from numeric expressions, and equations should be distinguished from expressions. The assessment items did not address those distinctions adequately.
· This assessment has too many items. It would be very difficult for a 7th grade student to keep their attention on the task for this many items.
· All standards were represented in this exam. However, five standards were assessed with 7 items and one standard was assessed with 8 items. There were multiple standards that were only assessed with 1 item, so I thought that the test items could have been more spread out amongst the standards. I also felt that the measurement strand was extremely weak, meaning there weren't many items devoted to assessing these skills.
· Although the results will probably look aligned, many of the objectives are rated at level 1 that should be pushed to level 2 at this grade. It is maintaining a low-level advancement of sixth grade. (The sixth-grade test requires more thinking than this one).
· The measurement standard was weak and there needed to be more questions in this area. Standard A.1.1 deals only with algebraic expressions and you could also add equations here when you deal with replacement values. The formula page was given to the students but there weren't any questions that needed it and this may stress the students. A huge concept is missing here. I thought the test was very weak in the use of integers as this is a major focus in 7th grade.

Table 8.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 8

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Each standard was assessed at least once, but there was heavy emphasis on just three standards. Cutting out some of the items on those standards (8A11, 8N31, and 8S21) would shorten the test.
· Yes, but the algebra strand has way too many items (29), especially the equivalent expressions (A.1.1) Also, the number sense strand has too many items (21).
· In standard 8.A.1.1, the bulk of the questions dealt with determining if two algebraic expressions were equivalent, which was only a small part of the standard. For standard 8.N.2.1, there was one question out of six that dealt with the specificity of the standard (discount, markup, commission, profit, and simple interest). The other five questions dealt with computing rational numbers.
· There seems to be a heavy load on standards 8.A.1.1 and 8.A.2.1 but in each case the problems seems to be of the same type with a high emphasis on equivalent expressions under 8.A.1.1 and solving equations under 8.A.2.1.
· Proportional reasoning is slighted. It occurs in two places in the objectives, so it being slighted is rather lost in the analysis. The objectives are broad, so many things fit under each one. The geometry ideas did not move forward (only more on 3-d, but rather low level).
· Standard A.4.1 only had question and I think that this standard needs more. Standard S.1.2 could have had a few more questions on analyzing data from graphs and making predictions.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The test and the standards address only the lower two DOK levels. It is important for students to have the opportunity to learn and to show that they have learned how to do critical thinking and strategic problem solving in mathematics.
· I would have liked to see some higher DOKs.
· Yes, overall the DOK levels were very appropriate. I think the levels on A.2.1 may be too high on the standards. Most of the items on the test were just substituting a number in for a variable and finding the result. I don't think this is a level 2.
· Standard 8.S.1.1 states that students can find measures of central tendencies from a graph. It lists that standard as a DOK 1, however the questions are at a DOK 2 (ex: reading a graph, then finding the mean).
· The 8th grade standards are all rated at either a DOK 1 or DOK 2. This still seems low for the 8th grade level. While it is sometimes harder to assessment a DOK level of 3 on a multiple choice test, it is possible. There were a number of problems that required the student to perform at a DOK level of 2 to correspond with the expectations of the standards. Perhaps more needs to be done in-state with the standards to raise the level of DOK.
· There appears to be a better range of levels; however, by this grade there should be more of a push toward level 3 thinking. I know this is difficult to do on multiple-choice tests, but every effort should be made to include such items. It can be done. The geometry objective was classified at level 1--but it should be pushed to level 2 at this grade

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards were very specific and for the most part appropriate for this grade level.
· Why did the measurement limit finding area, volume, and surface area to whole numbers when students are allowed to use calculators? In real life, measurement problems aren't limited to whole numbers!
· Some of the standards are too specific and limit the coding. S.1.1 says that we can only find a measure of central tendency from a stem and leaf plot or a line plot. M.1.2 says we can only find surface area of rectangular prisms and cylinders. I think some of these need to be broadened a little.
· Standard 8.M.1.2 was specific to only include surface area of rectangular prisms and cylinders, however there was an item that asked students to find the SA of a pyramid. Standard 8.S.1.1 was also specific to only include finding the mean from a stem-and-leaf plot or line plot, however there was an item that asked students to find the mean from a data set. Standard 8.S.2.1 was specific to include computing probability and finding sample space, however there were multiple items that asked students to use the fundamental counting principle. The standard may need to be broadened to include that concept as well.
· Standard 8.A.1.1 seems to have a discrepancy: In the first part it states '1st degree algebraic expressions,' yet under the bullets it discusses 'exponents' which is no longer a 1st degree expression. There seems to be some question about the specificity in standards 8.G.2.1 and 8.M.1.1. Both are about proportional reasoning and solving proportions, but 8.G.2.1 refers only to similar quadrilaterals and triangles, while 8.M.1.1 refers to solving measurement problems with rational number measurements. Also, perhaps this standard (8.M.1.1) would be better under algebra.
· Only a few concepts or skills were tested (combinations) that did not have a clear home in the objectives.
· Standard S.1.1 is too specific for finding the mean, median, mode and range of a data set from a stem and leaf plot and line plot. You should be able to find mean, median, mode and range from any form of data set. Standard M.1.2 is too specific. The standard states that students are able to find area, volume and surface area with whole number measurements and should be changed to subset of rational numbers so you can include decimals in the problem.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (4) : 57%
iii. Needs slight improvement (3) : 43%

E. Comments

· It appears to me that most of the assessment items in all these tests measure low DOK levels because they are so typical of traditional textbook items. South Dakota needs to think about the mathematics that students will use in real life and write standards that will address those needs and assessments that will measure those needs. In real life problem solving isn't so neat and tidy. You need to be helping your students think and reason. Most of the items don't require students

to do much more than use rote procedures.
· All of the standards were covered by the assessment, but I think the test is too long. There was much better use of integers on this assessment
· The test weighed heavily on algebra, with 28 of the items being devoted to this particular strand (3 standards had seven or eight items). Measurement was quite weak, with only 8 questions being devoted to this strand. However, each standard was assessed with at least one question. The number sense strand also had 2 standards with seven or eight items.
· The alignment looks ok, but there is concern about the geometry and rather routine statistical applications.
· Possibly look at putting standard G.2.1 which is writing and solving proportions in the algebra strand instead of the geometry strand. Measurement strand could be beefed up especially 8.M.1.1 with using proportional reasoning to solve measurement problems. The algebra strand was hit really hard. There were 28 questions dealing with this strand.

Table 11.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 11

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Although all of the standards were assessed at least once, some of the topics within the standards were not. For example, there were no items involving quartiles, and the graphs were of the same type. There was heavy emphasis on symbolic manipulation with algebraic expressions and on numeric problem solving. These standards could be adequately assessed if some of those items were eliminated. That would shorten the test and make it more accessible to students.
· Assessment on measurement is weak - not very many items are included. Geometry is also weak. There were no items that assessed graphing inequalities on a number line. There were no items requiring students to calculate slope. No items assessed line of symmetry. I also don't recall any order of operations items.
· There appears to be good coverage of all of the standards.
· Standard G.2.2 didn't address symmetry or coordinate plane, only transformations.
· There seems to be an abundance of questions around N.2.1 and I am unclear as to whether it is from all of those actually being questions about N.2.1 or if it is a catchall for problems I was unclear about where they belonged.
· The test was heavy on symbolic manipulation of algebraic expressions without much emphasis on the rest of algebra (with the exception of ideas about slope). The measurement strand was minimal coverage with very few items. The scope of the curriculum that this test covers is very broad. It is the only assessment that needs this many items to begin to cover the territory.
· Standard N.2.1 and 3.1 were heavy on the questions. Standard N.1.2 only had one question and could have had one or two more.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· The assessment items and the standards both covered only the lower two DOK levels. There are many important concepts and critical thinking skills accessible and appropriate to students at this grade level that are not being addressed. Since these students will soon be leaving high school, it seems like it would be desirable to include these aspects of mathematics, since they are more likely to be useful to students outside the academic world of K-12 education than memorized and procedural mathematics.
· The algebra items seemed to be at a low DOK level.
· The DOK for many of the algebra items are set too high on the standards. Many of these items on the test are procedural which is hard to give a DOK 2 for these items.
· Most standards were under assessed when it came to DOK levels.
· There seemed to be a lot of lower level questions regarding solving for a variable, simple multiplication and simple determination of median and mode.
· The measurement objectives were mainly classified as level 1. At this grade, it should be a culmination and at least at level 2.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The standards were appropriately specific for the most part. There should be more specificity in the standards around the practical applications of percentages that students are more likely to need to know as adults. There is no mention in the standards to substituting values for variables in formulas, although the skill appeared often in the assessment and would be useful to students as they use common formulas.
· Yes as far as grade level. I think some of the standards are too specific and leave out some items that should fit in that standard.
· Standard S.1.2 was too specific to only comparing data sets using measures of central tendency. Many questions asked students to find the mean, median, or mode of only ONE set.
· Most of the questions were at an appropriate level based on the DOK level expected by the standard.
· The only large hole is the lack of attention to growth problems and to percent objectives---these are practical applications at this grade and needed for the life of the citizen.
· The statistic S.1.1 I thought was below grade level and more higher level questions could be placed here. A.2.1 S.1.2 should state compare multiple variable data sets or find mean, median, mode and range in 1 data set. Standard A.2.1 states that students are able to use algebraic properties to transform multi-step, single variable, first degree equations and there was a question that dealt with one step equations.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (3) : 43%
iii. Needs slight improvement (4) : 57%

E. Comments

· Since students taking this test will soon be leaving high school, it is important that they understand the usefulness of mathematics in their adult life. Emphasizing memorized knowledge (which is soon forgotten) and procedural knowledge (which is often not practical) with the exclusion of concept development and mathematical reasoning is not equipping students with the kind mathematics that is lasting and empowering to them as they leave the K-12 environment. When these standards are revised, these issues should be considered.
· There are many assessment items for some standards. It seems that a more equal distribution of items among the standards would allow for a shorter test. All of the math tests were too long. Students must experience assessment fatigue by the time they finish 90+ questions. Are you assessing stamina or mathematics? Also, most of the items measure a low DOK. Both standards and assessments need to better address NCTM's reasoning and problem solving process standards.
· This test is too long.
· Standard M.1.2 was not found on this test.
· Once again, the alignment is there---but need to think about the depth of thinking expected. Much of this is school mathematics and not the type of thinking that will be needed for the future, everyday person. This can be nicely combined with the mathematics that students will need for advanced study.

Table 11.15
Debriefing Summary
South Dakota Mathematics 2008 Grade 11

· It would be nice to add a standard where the students have to write algebraic expressions. The test was extremely long. Can we assess with fewer questions.

APPENDIX Q: Science Alignment Report

REPORT

Alignment Analysis of Science Standards and Assessments

South Dakota
Grades 5, 8, and 11
2008

Norman L. Webb

November 11, 2008

Acknowledgements

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Executive Summary

A three-day alignment institute was held on September 22-24, 2008, in Sioux Falls, South Dakota. Seven reviewers analyzed the agreement among the South Dakota science standards and assessments for grades 5, 8 and 11. Reviewers included science content experts, science teachers, and a state science consultant. Three of the reviewers were from South Dakota and four reviewers were from other states.

The alignment between the South Dakota science standards and assessments varied by grade. The grade 5 science standards and the assessment were acceptably aligned, requiring the replacement of only two items to attain full alignment. The main alignment issue for grade 5 was an absence of assessment items that targeted Strand 5.1 (Nature of Science). The alignment of the grade 8 science standards and the assessment required major improvement, with 13 items needing replacement to attain full alignment. Similarly, the grade 11 science standards and the assessment needed major improvement with 14 items requiring replacement for full alignment. For both grades 8 and 11, the assessment items were not as complex as the expectations in the standards. Although the proportion of the standards judged to have a DOK level 3 increased across the grades, the level of complexity of the assessment items remained fairly constant, with essentially all of the items given a DOK level 1 or 2. Aside from the DOK inconsistency, the tests for grades 8 and 11 were judged to have items that covered the content expected by the standards, with a good range of standards covered, and a good balance in the representation of those standards.

Summary Table
Percent of South Dakota Science Standards with Acceptable Level on Each Alignment Criteria for Grade 5, 8, and 11 for 2008 Science STEP Analysis

Grade	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*	*Estimated Average Number of Items per Form to be Replaced for Full Alignment*
2008					
5	80%	80%	80%	80%	2
8	100%	25%	100%	100%	13
11	100%	0%	100%	100%	14

Categorical Concurrence	≥6 items
Depth-of-Knowledge	≥50% with DOK level the same or higher than level of corresponding objective
Range-of-Knowledge	≥50% of objectives under a standard
Balance of Representation	≥.70 index value

Alignment Analysis of Science Standards and Assessments

South Dakota
Grades 5, 8, and 11
2008

Norman L. Webb

Introduction

The alignment of expectations for student learning with assessments for measuring students' attainment of these expectations is an essential attribute for an effective standards-based education system. Alignment is defined as the degree to which expectations and assessments are in agreement and serve in conjunction with one another to guide an education system toward students learning what they are expected to know and do. As such, alignment is a quality of the relationship between expectations and assessments and not an attribute of any one of these two system components.

Alignment describes the match between expectations and an assessment that can be legitimately improved by changing either student expectations or the assessments. As a relationship between two or more system components, alignment is determined by using the multiple criteria described in detail in a National Institute for Science Education (NISE) research monograph, *Criteria for Alignment of Expectations and Assessments in Mathematics and Science Education* (Webb, 1997).

A three-day alignment institute was conducted September 22-24, 2008, in Sioux Falls, South Dakota. Seven reviewers—including science content experts, science teachers, and a state science consultant—analyzed the agreement between the South Dakota assessments for science and the South Dakota Science Content Standards for grades 5, 8 and 11 approved in 2005. The STEP assessments administered in Spring 2008 were used in this analysis. Four of the reviewers were from states other than South Dakota and three reviewers were from South Dakota.

South Dakota used the terminology of *goal/strand, indicator,* and *standard*. For science the South Dakota content standards had five strands—nature of science (Strand 1); physical science (Strand P); life science (Strand S); earth/space science (Strand E); science, technology, environment, and society (Strand S). Indicators described key aspects of the goals/strands. The standards under the indicators specified what students were to know and be able to do related to the indicator at the specific grade level.

As part of the alignment institute, reviewers were trained to identify the depth of knowledge (DOK) of the standards and assessment items. This training included reviewing the definitions of the four DOK levels and reviewing examples of each. Then, the reviewers generally participated in a consensus process to determine the DOK levels of the standards and individual analyses of the assessment items. Following individual analyses of the items, reviewers participated in a debriefing discussion in which they

assessed the degree to which they had coded particular items or types of content to the standards.

To derive the results from the analysis, the reviewers' responses were averaged. Any variance among reviewers was considered legitimate, with the true DOK level for the item falling somewhere between the two or more assigned values. Such variation could signify a lack of clarity in how the standards were written, the robustness of an item that could legitimately correspond to more than one standard and/or a DOK that falls in between two of the four defined levels. Reviewers were allowed to identify one assessment item as corresponding to up to three standards—one primary hit (standard) and up to two secondary hits. However, reviewers could only code one DOK level to each assessment item, even if the item corresponded to more than one standard.

Reviewers were instructed to focus primarily on the alignment between the state's standards and assessments. However, reviewers were encouraged to offer their opinions on the quality of the standards or of the assessment activities/items by writing a note about the item. Reviewers also could indicate whether there was a source-of-challenge issue with the item—i.e., a problem with the item that might cause the student who knows the material to give a wrong answer or enable someone who does not have the knowledge being tested to answer the item correctly.

The results produced from the institute pertain only to the issue of alignment between the South Dakota Science Standards and the assessments. Note that an alignment analysis of this nature does not serve as external verification of the general quality of the state's standards or assessments. Rather, only the degree of alignment is discussed in the results. For these results, the means of the reviewers' coding were used to determine whether the alignment criteria were met. When reviewers did vary in their judgments, the means lessened the error that might result from any one reviewer's finding. Standard deviations are reported in the tables provided in Appendix B, which give one indication of the variance among reviewers.

This report describes the results of an alignment study of the South Dakota science STEP assessment administered in the spring of 2008 and science content standards for grades 5, 8, and 11. The study addressed specific criteria related to the content agreement between the state's standards and grade-level assessments. Four criteria received major attention: categorical concurrence, depth-of-knowledge consistency, range-of-knowledge correspondence and balance of representation.

Alignment Criteria Used for This Analysis

This analysis judged the alignment between the standards and the assessments on the basis of four criteria. Information is also reported on the quality of items by identifying items with sources-of-challenge and other issues. For each alignment criterion, an acceptable level was defined by what would be required to assure that a student had met the standards.

Categorical Concurrence

An important aspect of alignment between standards and assessments is whether both address the same content categories. The categorical-concurrence criterion provides a very general indication of alignment if both documents incorporate the same content. *The criterion of categorical concurrence between standards and assessments is met if the same or consistent categories of content appear in both documents.* This criterion was judged by determining whether the assessment included items measuring content from each strand. The analysis assumed that the assessment had to have at least six items for measuring content from a strand in order for an acceptable level of categorical concurrence to exist between the strand and the assessment. The number of items, six, is based on estimating the number of items that could produce a reasonably reliable subscale for estimating students' mastery of content on that subscale. Of course, many factors have to be considered in determining what a reasonable number is, including the reliability of the subscale, the mean score, and cutoff score for determining mastery. Using a procedure developed by Subkoviak (1988) and assuming that the cutoff score is the mean and that the reliability of one item is .1, it was estimated that six items would produce an agreement coefficient of at least .63. This indicates that about 63% of the group would be consistently classified as masters or nonmasters if two equivalent test administrations were employed. The agreement coefficient would increase if the cutoff score is increased to one standard deviation from the mean to .77 and, with a cutoff score of 1.5 standard deviations from the mean, to .88. Usually states do not report student results by strands or require students to achieve a specified cutoff score on indicators related to a strand. If a state did do this, then the state would seek a higher agreement coefficient than .63. Six items were assumed as a minimum for an assessment measuring content knowledge related to a strand, and as a basis for making some decisions about students' knowledge of that strand. If the mean for six items is 3 and one standard deviation is one item, then a cutoff score set at 4 would produce an agreement coefficient of .77. Any fewer items with a mean of one-half of the items would require a cutoff that would only allow a student to miss one item. This would be a very stringent requirement, considering a reasonable standard error of measurement on the subscale.

Depth-of-Knowledge Consistency

Standards and assessments can be aligned not only on the category of content covered by each, but also on the basis of the complexity of knowledge required by each. *Depth-of-knowledge consistency between standards and assessment indicates alignment if what is elicited from students on the assessment is as demanding cognitively as what students are expected to know and do as stated in the standards.* For consistency to exist between the assessment and the strands, as judged in this analysis, at least 50% of the items corresponding to a strand had to be at or above the depth-of-knowledge level of the corresponding standards: 50%, a conservative cutoff point, is based on the assumption that a minimal passing score for any one strand of 50% or higher would require the student to successfully answer at least some items at or above the depth-of-knowledge level of the corresponding standards. For example, assume an assessment included six items related to one strand and students were required to answer correctly four of those items to be judged proficient—i.e., 67% of the items. If three, 50%, of the six items were at or above the depth-of-knowledge level of the corresponding standards, then for a

student to achieve a proficient score would require the student to answer correctly at least one item at or above the depth-of-knowledge level of one standard. Some leeway was used in this analysis on this criterion. If a strand had between 40% and 50% of items at or above the depth-of-knowledge levels of the standards, then it was reported that the criterion was "weakly" met.

Interpreting and assigning depth-of-knowledge levels to both standards within strands and assessment items are essential requirements of alignment analysis. These descriptions help to clarify what the different levels represent in science:

Level 1 (Recall and Reproduction) is the recall of information such as a fact, definition, term, or a simple procedure, as well as performing a simple science process or procedure. Level 1 only requires students to demonstrate a rote response, use a well-known formula, follow a set procedure (e.g. a recipe), or perform a clearly defined series of steps. A "simple" procedure is well defined and typically involves only one step. Verbs such as "identify," "recall," "recognize," "use," "calculate," and "measure" generally represent cognitive work at the recall and reproduction level. Simple word problems that can be directly translated into and solved by a formula are considered Level 1. Verbs such as "describe" and "explain" could be classified at different DOK levels, depending on the complexity of what is to be described and explained.

A student answering a Level 1 item either knows the answer or does not: that is, the answer does *not* need to be "figured out," or "solved." In other words, if the knowledge necessary to answer an item automatically provides the answer to the item, then the item is at Level 1. If the knowledge necessary to answer the item does *not* automatically provide the answer, the item is at least at Level 2.

Level 2 (Skills and Concepts) 2 includes the engagement of some mental processing beyond recalling or reproducing a response. The content knowledge or process involved is more complex than in Level 1. Items require students to make some decisions as to how to approach the question or problem. Keywords that generally distinguish a Level 2 item include "classify," "organize," "estimate," "make observations," "collect and display data," and "compare data." These actions imply more than one step. For example, to compare data requires first identifying characteristics of the objects or phenomenon and then grouping or ordering the objects. Level 2 activities include making observations and collecting data; classifying, organizing, and comparing data; and organizing and displaying data in tables, graphs, and charts.

Some action verbs, such as "explain," "describe," or "interpret," could be classified at different DOK levels, depending on the complexity of the action. For example, interpreting information from a simple graph, requiring reading information from the graph, is at Level 2. An item that requires interpretation from a complex graph, such as making decisions regarding features of the graph that need to be considered and how information from the graph can be aggregated, is at Level 3.

Level 3 (Strategic Thinking) requires reasoning, planning, using evidence, and a higher level of thinking than the previous two levels. The cognitive demands at Level 3 are complex and abstract. The complexity does *not* result only from the fact that there could be multiple answers, a possibility for both Levels 1 and 2, but because the multi-step task requires more demanding reasoning. In most instances, requiring students to explain their thinking is at Level 3; requiring a very simple explanation, or a word or two, should be at Level 2. An activity that has more than one possible answer and requires students to justify the response they give would most likely be a Level 3. Experimental designs in Level 3 typically involve more than one dependent variable. Other Level 3 activities include drawing conclusions from observations; citing evidence and developing a logical argument for concepts; explaining phenomena in terms of concepts; and using concepts to solve non-routine problems.

Level 4 (Extended Thinking). Tasks at Level 4 have high cognitive demands and are very complex. Students are required to make several connections—relate ideas within the content area or among content areas—and have to select or devise one approach among many alternatives on how the situation can be solved. Many on-demand assessment instruments will *not* include any assessment activities that could be classified as Level 4. However, standards, goals, and objectives can be stated in such a way as to expect students to perform extended thinking. "Develop generalizations of the results obtained and the strategies used and apply them to new problem situations," is an example of a grade 8 objective that is at Level 4. Many, but *not* all, performance assessments and open-ended assessment activities requiring significant thought will be Level 4.

Level 4 requires complex reasoning, experimental design and planning, and probably will require an extended period of time either for the science investigation required by an objective, or for carrying out the multiple steps of an assessment item. However, the extended time period is *not* a distinguishing factor if the required work is only repetitive and does not require applying significant conceptual understanding and higher-order thinking. For example, if a student has to take the water temperature from a river each day for a month and then construct a graph, this would be classified as a Level 2 activity. However, if the student conducts a river study that requires taking into consideration a number of variables, this would be at Level 4.

Range-of-Knowledge Correspondence

For standards and assessments to be aligned, the breadth of knowledge required on both should be comparable. *The range-of-knowledge criterion is used to judge whether a comparable span of knowledge expected of students by a strand is the same as, or corresponds to, the span of knowledge that students need in order to correctly answer the assessment items/activities.* The criterion for correspondence between span of knowledge for a strand and an assessment considers the number of standards within the strand with one related assessment item/activity. Fifty percent of the standards for a strand had to have at least one related assessment item in order for the alignment on this criterion to be judged acceptable. This level is based on the assumption that students' knowledge should be tested on content from over half of the domain of knowledge for a

strand. This assumes that each standard for a strand should be given equal weight. Depending on the balance in the distribution of items and the need to have a low number of items related to any one standard, the requirement that assessment items need to be related to more than 50% of the standards for an strand increases the likelihood that students will have to demonstrate knowledge on more than one standard per strand to achieve a minimal passing score. As with the other criteria, a state may choose to make the acceptable level on this criterion more rigorous by requiring an assessment to include items related to a greater number of the standards. However, any restriction on the number of items included on the test will place an upper limit on the number of standards that can be assessed. Range-of-knowledge correspondence is more difficult to attain if the content expectations are partitioned among a greater number of strands and a large number of standards. If 50% or more of the standards for a strand had a corresponding assessment item, then the range-of-knowledge correspondence criterion was met. If between 40% and 50% of the standards for a strand had a corresponding assessment item, the criterion was "weakly" met.

Balance of Representation

In addition to comparable depth and breadth of knowledge, aligned standards and assessments require that knowledge be distributed equally in both. The range-of-knowledge criterion only considers the number of standards within a strand hit (a standard with a corresponding item); it does not take into consideration how the hits (or assessment items/activities) are distributed among these standards. *The balance-of-representation criterion is used to indicate the degree to which one standard is given more emphasis on the assessment than another.* An index is used to judge the distribution of assessment items. This index only considers the standards for a strand that have at least one hit—i.e., one related assessment item per standard. The index is computed by considering the difference in the proportion of standards and the proportion of hits assigned to the standard. An index value of 1 signifies perfect balance and is obtained if the hits (corresponding items) related to a strand are equally distributed among the standards for the given strand. Index values that approach 0 signify that a large proportion of the hits are on only one or two of all of the standards hit. Depending on the number of standards and the number of hits, a unimodal distribution (most items related to one standard and only one item related to each of the remaining standards) has an index value of less than .5. A bimodal distribution has an index value of around .55 or .6. Index values of .7 or higher indicate that items/activities are distributed among all of the standards at least to some degree (e.g., every standard has at least two items) and is used as the acceptable level on this criterion. Index values between .6 and .7 indicate the balance-of-representation criterion has only been "weakly" met.

Source-of-Challenge Criterion

The source-of-challenge criterion is only used to identify items on which the major cognitive demand is inadvertently placed and is other than the targeted science standard or expectation. Cultural bias or specialized knowledge could be reasons for an item to have a source-of-challenge problem. Such item characteristics may result in some students not answering an assessment item, or answering an assessment item incorrectly, or at a lower level, even though they possess the understanding and skills being assessed.

Findings

Standards

The consensus DOK value for each science standard for each of grades 5, 8, and 11 can be found in Appendix A. Table 1 shows the percentages of standards at each DOK level by grade. The science standards adopted in 2005 increased in complexity across the grades. Reviewers found that a majority of the grade 5 standards had a DOK level 1 (recall and recognition). For grades 8 and 11, the majority of the standards had a DOK level 2 (skill and concept). The grade 11 standards had the highest percentage of standards with a DOK level 3 (strategic thinking). Overall, the science standards increased in complexity from mainly factual expectations in the lower grades to more conceptual understanding and reasoning in the higher grades.

Table 1. *Percent of Standards by Depth-of-Knowledge (DOK) Levels for Grades 5, 8, and 11 South Dakota Alignment Analysis for Science*

Grade	Total Number of Standards	DOK Level	Number of Standards by Level	Percent within Strand by Level
5	20	1	13	65
		2	6	30
		3	1	5
8	14	1	2	14
		2	10	71
		3	2	14
11	30	1	2	6
		2	21	70
		3	7	23

If no particular objective is targeted by a given assessment item, reviewers are instructed to code the item at the level of a learning goal or a standard. This coding to a generic objective sometimes indicates that the item is inappropriate for the grade level. However, if the item is grade-appropriate, then this situation may instead indicate that there is a part of the content not expressly or precisely described in the objectives. These items may highlight areas in the objectives that should be changed, or made more precise. Table 2 displays the assessment items coded to generic objectives by more than one reviewer. For each grade, only one item was coded to a generic standard, and only by a subset of the reviewers. This means that reviewers were generally able to find a matching standard for each item. The lack of use of generic standards provides one indication that the standards were written clearly and the assessment items targeted the specific content as described by the standards.

Table 2
Items Coded to Generic Objectives by More Than One Reviewer, South Dakota Alignment Analysis for Science, Grades 5, 8, and 11 2008

Grade	Generic Objective	Assessment Item (Number of Reviewers)
5	5.P.2	38(2)
5	5.L.3	63(3)
11	9-12.P.2	57(4)

Reviewers' debriefing comments also highlight some ambiguities in the objectives. These comments can be found in Appendix D.

Alignment of Curriculum Standards and Assessments

Table 3 displays the number of items and points for each assessment form. In the analysis that follows, multiple-point items would be given additional weight for alignment purposes. For example, a 3-point item would be counted towards the alignment as 3 identically coded 1-point items. Because all of the items were assigned one point on these assessments, the total point value was equal to the total number of items on each test.

Table 3
Number of Items and Point Value by Grade for South Dakota Assessments, Grades 5, 8, and 11 2008

Grade Level	Number of Items	Number of Multi-Point Items	Total Point Value
5	70	0	70
8	70	0	70
11	84	0	84

The results of the analysis for each of the four alignment criteria are summarized in Tables 4.1-4.3. More detailed data on each of the criteria are given in Appendix B, in the first three tables. With each table and for each grade, a description of the satisfaction of the alignment criteria for the given grade is provided. The reviewers' debriefing comments provide further detail about the individual reviewers' impressions of the alignment.

In Tables 4.1-4.3, "YES" indicates that an acceptable level was attained between the assessment and the learning goal on the criterion. "WEAK" indicates that the criterion was nearly met, within a margin that could simply be due to error in the system. "NO" indicates that the criterion was not met by a noticeable margin—10% over an acceptable level for Depth-of-Knowledge Consistency, 10% over an acceptable level for Range-of-Knowledge Correspondence, and .1 under an index value of .7 for Balance of Representation. "NT" indicated that the criterion was not tested. This occurs if less than two test items are coded to a standard, in which case the other criteria are not applicable.

Grade 5

The grade 5 science standards and assessment needed slight improvement be aligned. Only slight improvement is required for full alignment. The main issue was an absence of items that targeted Strand 5.1 (Nature of Science). There were no items on the assessment that the majority of reviewers judged aligned to standards under this strand. Consequently, DOK Consistency, Range of Knowledge, and Balance of Representation are not measurable, and are marked Not Tested (NT) in Table 4.1. For the other standards, all four of the alignment criteria were acceptably met. For each of these standards the assessment had six or more items (Categorical Concurrence) and at least half of the items with a DOK level that was the same or higher than the DOK level of the corresponding standard (Depth-of-Knowledge Consistency). The items also were nearly evenly distributed among the standards (Range and Balance).

The reviewers noted that the coverage of standards by the assessment and the DOK of the items were generally good. Several reviewers noted an absence of DOK 3 items. However, the absence of DOK 3 items is consistent with Grade 5 standards. A majority of reviewers coded 26 items to Strand L (Life Science), compared with 20 items to Strand P (Physical Science), 14 to Strand E (Earth/Space Science), eight to Strand S (Science, Technology, Environment, and Society), and zero to Strand 1 (Nature of Science). There was no single item for which the majority of reviewers found a source-of-challenge issue. However, at least two reviewers noted a source-of-challenge issue for Items 11, 17, 26, and 33. A review of all source-of-challenge comments is recommended, as one reviewer may have noticed an issue that others did not. In their notes, some reviewers commented that test items (e.g. 17, 26, 47) assessed enabling skills (bullets and check marks). In their debriefing notes, reviewers explained that these check-marks are intended to indicate content that is to be assessed in future years. Reviewers also expressed some concern about the reading level of some items, and felt that some items were reading-for-inference.

Table 4.1
Summary of Acceptable Levels on Alignment Criteria for Science Grade 5 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 5	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
5.1 - NATURE OF SCIENCE	NO (0.57)	NT	NT	NT
5.P - PHYSICAL SCIENCE	YES	YES	YES	YES
5.L - LIFE SCIENCE	YES	YES	YES	YES
5.E - EARTH/SPACE SCIENCE	YES	YES	YES	YES
5.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	YES	YES	YES

In the opinion of the reviewers, two reviewers felt the grade 5 science standards and assessment were acceptably aligned while the other five felt the alignment needed slight improvement. The data indicate that improvement is necessary. In order to attain Categorical Concurrence, six items would need to be replaced by items that target Strand 1 objectives. For full alignment, these items would also need to be written at the appropriate DOK level.

Grade 8

The alignment between the grade 8 standards and the assessment needed major improvement, due to a lack of DOK consistency for all strands except Earth Science. At grade 8 only four standards were included in the analysis. A note in the standards indicated that grade 8 should emphasize earth and space science and should not include any life science. The assessment reflected the emphasis on Strand E (Earth/Space Science) by including 28 items, as indicated by the majority of reviewers, which targeted standards under this strand. The remainder of the assessment items was nearly evenly distributed among the other three strands, with 13 or 14 items per strand. All of the standards under the four strands had at least one item with the items reasonably distributed so that range and balance were both good. The main alignment issue was that too many of the items for three of the four strands (Nature of Science, Physical Science, and Science, Technology, Environment, and Society) had a DOK level that was lower than the DOK level of the corresponding standard. Reviewers found that essentially all of the items on the Grade 8 assessment had a DOK level 1 or 2 whereas two of the standards had a DOK level 3.

A majority of reviewers did verify in their comments that the assessment coverage of the grade 8 standards was good, and that the most important topics under the standards were addressed in some way by the assessment. In source-of-challenge comments, a majority of reviewers felt that Item 56 had more than one possible answer. Two or more reviewers noted a source-of-challenge issue for Item 16. A review of all source-of-challenge comments is recommended, as one reviewer may have noticed an issue that others did not. All reviewers expressed concern in their notes about Item 10. They expressed doubt about if and how students would use a graph that was presented in the stem of the item. In their notes, some reviewers also identified several items that they felt matched a check-mark standard.

In their opinion, five reviewers felt the alignment at Grade 8 was acceptable and two reviewers felt the alignment needed slight improvement. Although by the opinion of the reviewers the alignment was good, the results of the analysis indicated that 13 items would need to be replaced by items with a higher DOK level to have full alignment—five items for Strand 8N, four items for Strand 8P, and four items for Strand 8S. Because a total of 13 items would need to be replaced with items of higher DOK level, the alignment overall was considered to need major improvement.

Table 4.2
Summary of Acceptable Levels on Alignment Criteria for Science Grade 8 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 8	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
8.N - NATURE OF SCIENCE	YES	NO	YES	YES
8.P - PHYSICAL SCIENCE	YES	NO	YES	YES
8.E - EARTH/SPACE SCIENCE	YES	YES	YES	YES
8.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	NO	YES	YES

Grade 11

For grade 11, the alignment of the science standards for grades 9-12 and the assessment needed major improvement, due to lack of DOK consistency for all strands. Categorical Concurrence, Range-of-Knowledge Correspondence, and Balance of Representation were acceptably met for all five strands. Two or more reviewers noted a source-of-challenge issue for items 20 and 44. Other reviewers expressed concern about item 20 in their notes. Nearly all reviewers felt that the diagram for that item was unclear. A review of all source-of-challenge comments is recommended, as one reviewer may have noticed an issue that others did not. In the opinion of the reviewers, three indicated that the alignment was acceptable and four indicated that alignment needed slight improvement. While the other criteria were met, the data indicate that major improvement is required due to DOK inconsistency.

The main alignment issue for grade 11 was the low DOK levels of the items compared with the standards. While the level of complexity of the standards increased from earlier grades, the DOK levels of the items remained steady. Overall, a total of 14 items would need to be replaced by items with a higher DOK level to attain full alignment—five items for Strand 9-12 N, one item for Strand 9-12 P, four items for Strand 9-12 L, two items for Strand 9-12 E, and two items for Strand 9-12 S. Because nearly 20 percent of the items would require replacement to attain full alignment, based on this analysis the alignment was judged to need major improvement.

Table 4.3
Summary of Acceptable Levels on Alignment Criteria for Science Grade 11 Standards and Assessments for South Dakota Alignment Analysis 2008

Grade 11	***Alignment Criteria***			
Standards	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Represent ation*
9-12.N - NATURE OF SCIENCE	YES	NO	YES	YES
9-12.P - PHYSICAL SCIENCE	YES	WEAK	YES	YES
9-12.L - LIFE SCIENCE	YES	NO	YES	YES
9-12.E - EARTH/SPACE SCIENCE	YES	WEAK	YES	YES
9-12.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	WEAK	YES	YES

Source-of-Challenge Issues

Reviewers were instructed to document any source-of-challenge issue and to provide any other comments they may have. These comments can be found in Tables (grade).5 and (grade).7 in Appendix C. There were only eight items, from the assessments for all three grades, that two or more reviewers identified as having a source-of-challenge issue (grade 5 Items 11, 17, 26, and 33; grade 8, item 16 and 56; grade 11, item 20 and 44). For each of these items the reviewers noted their rationale, including confusion with diagrams and problems with the representation of the science. All notes on source of challenge issues should be reviewed. It is possible that one reviewer discovered an issue that other reviewers did not detect.

Reviewers' Comments

Along with source-of-challenge issue comments, reviewers were asked to provide any other notes they may have. These comments can be found in Tables (grade).7 in Appendix C. There are a number of notes by reviewers on specific assessment items. Many of these notes identify ways an item did not specifically address a standard, questioned the accuracy of an item, or questioned the view of science portrayed by the item. After coding each grade-level assessment, reviewers also were asked to respond to five debriefing questions. All of the comments made by the reviewers are given in Appendix D. The notes in general offer an opinion on the coverage of the standards by items and the appropriateness of the DOK level of items. Some of the debriefing notes have been given above for each of the grades.

Reliability Among Reviewers

The overall intraclass correlation among the Science reviewers' assignment of DOK levels to items was high for seven reviewers for Grades 5, 8, and 11 (Table 5). An

intraclass correlation value greater than 0.8 generally indicates a high level of agreement among the reviewers. A pairwise comparison is used to determine the degree of reliability of reviewer coding at the objective level and at the learning goal level. The pairwise comparison values are moderate, while the objective values are overall high.

Table 5
Intraclass and Pairwise Comparisons, South Dakota Alignment Analysis for Science Grades 5, 8, and 11 Assessments 2008

Grade	Intraclass Correlation	Pairwise Comparison:	Pairwise: Objective	Pairwise: Standard
5	.82	.68	.80	.90
8	.74	.62	.90	.94
11	.80	.66	.70	.88

Summary

A three-day alignment institute was held on September 22-24, 2008, in Sioux Falls, South Dakota. Seven reviewers analyzed the agreement among the South Dakota science standards and assessments for grades 5, 8 and 11. Reviewers included science content experts, science teachers, and a state science consultant. Three of the reviewers were from South Dakota and four reviewers were from other states.

The alignment between the South Dakota science standards and assessments varied by grade. The grade 5 science standards and the assessment were acceptably aligned, requiring the replacement of only two items to attain full alignment. The main alignment issue for grade 5 was an absence of assessment items that targeted Strand 5.1 (Nature of Science). The alignment of the grade 8 science standards and the assessment required major improvement, with 13 items needing replacement to attain full alignment. Similarly, the grade 11 science standards and the assessment needed major improvement with 14 items requiring replacement for full alignment. For both grades 8 and 11, the assessment items were not as complex as the expectations in the standards. Although the proportion of the standards judged to have a DOK level 3 increased across the grades, the level of complexity of the assessment items remained fairly constant, with essentially all of the items given a DOK level 1 or 2. Aside from the DOK inconsistency, the tests for grades 8 and 11 were judged to have items that covered the content expected by the standards, with a good range of standards covered, and a good balance in the representation of those standards.

Summary Table
Percent of South Dakota Science Standards with Acceptable Level on Each Alignment Criteria for Grade 5, 8, and 11 for 2008 Science STEP Analysis

Grade	*Categorical Concurrence*	*Depth-of-Knowledge Consistency*	*Range of Knowledge*	*Balance of Representation*	*Estimated Average Number of Items per Form to be Replaced for Full Alignment*
2008					
5	80%	80%	80%	80%	2
8	100%	25%	100%	100%	13
11	100%	0%	100%	100%	14

Categorical Concurrence	≥6 items
Depth-of-Knowledge	≥50% with DOK level the same or higher than level of corresponding objective
Range-of-Knowledge	≥50% of objectives under a standard
Balance of Representation	≥.70 index value

References

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Appendix A

South Dakota
Grades 5, 8, and 11
Science
Standards and Group Consensus
DOK Values

Table 5.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 5

Level	Description	DOK
5.1	NATURE OF SCIENCE	3
5.1.1	Understand the nature and origin of scientific knowledge.	1
5.1.1.1	? Investigate scientific contributions of people who have revolutionized scientific thinking. ? Describe science as a body of knowledge and an investigative process. ? Describe how scientific knowledge increases and changes over time.	1
5.1.2	Apply the skills necessary to conduct scientific investigations.	3
5.1.2.1	? Use investigations in science to accumulate knowledge. Example: Record daily weather conditions to form a weather pattern. • Make observations. • Make predictions. • Differentiate between a hypothesis and a prediction. • Ask questions. • Formulate hypotheses based on cause and effect relationships. • Plan investigations. • Use appropriate scientific equipment and proper safety procedures in all investigations. • Use appropriate metric measurement to collect, record, chart, and/or graph data. • Interpret data and recognize numerical data that are contradictory or unusual in experimental results. • Communicate results. • Define variables that must be held constant in a specific experimental situation.	3
5.P	PHYSICAL SCIENCE	1
5.P.1	Describe structures and properties of, and changes in, matter.	1
5.P.1.1	Students are able to define matter on the basis of observable physical properties. Examples: mass, volume, density, magnetism, physical state, and the ability to conduct heat, electricity, and sound • Explain the relationships among elements, molecules, and matter. Examples: carbon dioxide, water ? Explain differences and similarities between a solution and other mixtures and changes that occur within. Examples: solution (sugar dissolving in water) and mixture (trail mix)	1
5.P.2	Analyze forces, their forms, and their effects on motions.	2
5.P.2.1	Students are able to identify forces in specific situations that require objects to interact, change directions, or stop. • Give examples of ways gravitational forces affect every object.	1
5.P.2.2	Students are able to analyze the structure and design of simple and compound machines to determine how the machines make work easier by trading force for distance. • Distinguish between simple and compound machines. Examples: lever, pulley, wheel, axle, inclined plane, wedge, screw Example: how scissors cut paper	2
5.P.3	Analyze interactions of energy and matter.	1
5.P.3.1	Students are able to demonstrate and explain how to measure heat flow into an object.	1

Table 5.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 5

Level	Description	DOK
	Example: Measure temperatures of various materials placed in sunlight. • Interpret a thermometer.	
5.P.3.2	Students are able to describe the Sun's ability to produce energy in the forms of light and heat. • Understand that the Sun produces energy. Example: energy from the Sun stored in coal and plants ? Describe significant characteristics of different forms of energy. ? Explain energy transfers and transformation of light.	1
5.P.3.3	Students are able to describe basic properties of light. Examples: reflection, scattering, color spectrum, shadows.	1
5.L	LIFE SCIENCE	2
5.L.1	Understand the fundamental structures, functions, classifications, and mechanisms found in living things.	1
5.L.1.1	Students are able to describe the basic process of photosynthesis and the role of light as a source of energy in plants. • Use words to describe photosynthesis. Example: Carbon dioxide + water? sunlight; chlorophyll = sugar and oxygen.	1
5.L.2	Analyze various patterns and products of natural and induced biological change.	2
5.L.2.1	Students are able to predict physical characteristics with family lineage. • Describe family trees. • Explain how physical traits pass from generation to generation. Examples: height, hair color, eye color	2
5.L.2.2	Students are able to describe structures and processes involved in plant reproduction. Example: fertilization • Know parts of the plant.	1
5.L.3	Analyze how organisms are linked to one another and the environment.	2
5.L.3.1	Students are able to describe how natural events and/or human influences may help or harm ecosystems. Example: biotic (over-population) and abiotic (floods) • Define ecosystem.	2
5.L.3.2	Students are able to analyze the roles of organisms to determine the transfer of energy using an energy pyramid model. Examples: producer, consumer, decomposer, herbivore, carnivore, omnivore, predator – prey • Define an energy pyramid. • Define an organism.	2
5.L.3.3	Students are able to describe how interrelationships enable some organisms to survive. • Define interrelationships. ? Adaptation, parasitism, mutation	1
5.E	EARTH/SPACE SCIENCE	1
5.E.1	Analyze the various structures and processes of the Earth system.	1
5.E.1.1	Students are able to describe the basic structure of Earth's interior. • Define crust, mantle, and core.	1

Table 5.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 5

Level	Description	DOK
	? Explain the formation of geological features of the Earth through plate tectonics. Examples: volcanoes, faults, ocean trenches ? Describe how Earth's surface is constantly changing. Examples: earthquakes, volcanoes, weathering, erosion, and deposition ? Examine topographical maps.	
5.E.2	Analyze essential principles and ideas about the composition and structure of the universe.	1
5.E.2.1	Students are able to describe the components (Sun, planets, and moons) of the solar system. • Relative size • Order and relative distance from the Sun and each other ? Describe the relative scale of the Earth to the Sun, planets, and the Moon.	1
5.E.2.2	Students are able to explain how the Earth's rotation affects the appearance of the sky. • Constellations appear to move as a result of Earth's rotation. Example: The Big Dipper appears in different locations throughout the night. • Apparent brightness of a star depends in part upon its distance from the Earth. Example: A flashlight beam appears brighter as it moves closer.	1
5.S	SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2
5.S.1	Analyze various implications/effects of scientific advancement within the environment and society.	2
5.S.1.1	Students are able to identify scientific changes that have affected transportation, health, sanitation, and communication.	1
5.S.1.2	Students are able to describe how designing a solution may have constraints. Examples: costs, time, space, materials, and safety • Explain why the benefits of science and technology are not available to all people. • Describe the consumption of resources over time. Examples: oil, gold, and coal	2
5.S.2	Analyze the relationships/interactions among science, technology, environment, and society.	2
5.S.2.1	Students are able to explain the interrelationship of populations, resources, and environments. Example: human populations encroaching upon wildlife habitat Example: Technology such as fish finders affects fish population. • Define interrelationships. ? Describe conservation practices. Examples: crop rotation, shelter belts, fishing limits, hybrid automobiles	2

Table 8.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 8

Level	Description	DOK
8.N	NATURE OF SCIENCE	3
8.N.1	Understand the nature and origin of scientific knowledge.	2
8.N.1.1	Students are able to differentiate among facts, predictions, theory, and law/principles in scientific investigations. • Define fact, predictions, theory, and law/principle. • Discuss how theory can become law. ? Evaluate important contributions to the advancement of science from people of differing cultures, genders, and ethnicity. Examples: Marie Curie-radiation, Hess, Galileo- astronomy, Kepler-astronomy, Newton-physics, Neil Tice-astronomy, Mendeleev-physics	2
8.N.2	Apply the skills necessary to conduct scientific investigations.	3
8.N.2.1	Students are able to design a replicable scientific investigation. • Use appropriate supportive technologies. • Assess the limits of accuracy inherent in a particular measuring device or procedure. • Control variables to test hypotheses by repeated trials and by identifying sources of experimental error. • Interpret data to justify predictions or conclusions. • Use research methods to investigate practical and/or personal scientific problems and questions. • Select appropriate scientific equipment and technologies for investigations and experiments. • Use proper safety procedures in all investigations. • Wear appropriate attire. ? Evaluate the benefits and potential of scientific investigations.	3
8.P	PHYSICAL SCIENCE	2
8.P.1	Describe structures and properties of, and changes in, matter.	2
8.P.1.1	Students are able to classify matter as elements, compounds, or mixtures. Example: Na and Cl are elements that, chemically combined, form salt (NaCl) (compound). Example: Salt and water form a mixture that can be physically separated. ? Formulas	2
8.P.1.2	Students are able to use the Periodic Table to compare and contrast families of elements and to classify elements as metals, metalloids, or non-metals. • Describe the relationship between the organization and the predictive nature of the Periodic Table. • Use the Bohr model to show the arrangement of the subatomic particles of atomic numbers 1 through 18. ? Compare and contrast other atomic models.	2
8.P.1.3	Students are able to compare properties of matter resulting from physical and chemical changes. Examples: weathering, burning, melting, acid rain ? Ionic/covalent bonding	2
8.E	EARTH/SPACE SCIENCE	2

Table 8.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 8

Level	Description	DOK
8.E.1	Analyze the various structures and processes of the Earth system.	2
8.E.1.1	Students are able to identify and classify minerals and rocks. Examples: luster, streak, fracture/cleavage, hardness (Mohs Scale), specific gravity, color, magnetism, acid test, flame test, fluorescence • Rocks as sedimentary, igneous, or metamorphic. • Rock Cycle ? Law of Conservation of Energy and Matter • Minerals as carbonates (CO3) or Silicates (SiO2) ? Minerals as oxides, sulfides, halides, sulfates	2
8.E.1.2	Students are able to explain the role of plate tectonics in shaping Earth. • Plates boundaries • Volcanoes • Earthquakes • Seismic waves • Mountains • Convection currents in the mantle • Changes over time Examples: adaptations, extinction, geologic time (relative and absolute), extinct species, fossils, surface features	1
8.E.1.3	Students are able to explain the factors that create weather and the instruments and technologies that assess it. Examples: NOAA, AMS • Differentiate between climate and climate zones. Examples: air masses, fronts, pressure systems, Coriolis effect, wind systems, humidity, storms ? Effects of the ocean on weather ? Condensation ? Evaporation ? Cloud Formation	2
8.E.1.4	Students are able to examine the chemical and physical properties of the ocean to determine causes and effects of currents and waves. Examples: density, temperature, salinity ? El Niño ? Ocean zones ? Ocean floor features	2
8.E.1.5	Students are able to explain the impact of weathering and erosion on the Earth. • Soil formation • Deposition (deltas) • Land transformations (Grand Canyon) • Glaciation ? Use geospatial technologies to investigate natural phenomena. Examples: GPS, GIS, remote sensing	2
8.E.2	Analyze essential principles and ideas about the composition and structure of the universe.	2

Table 8.14
Group Consensus
South Dakota Science Content Standards, Science, Grade 8

Level	Description	DOK
8.E.2.1	Students are able to compare celestial bodies within the solar system using composition, size, and orbital motion. • Describe the composition of the Sun, the planets, asteroids, and comets. ? Use of spectroscopic analysis of celestial bodies ? Measurement in space ? Constellations ? Galaxies ? Life cycle of a star ? HR Diagram ? Law of Gravitation ? Big Bang Theory ? Doppler Effect	1
8.E.2.2	Students are able to differentiate the influences of the relative positions of the Earth, Moon, and Sun. • Lunar and solar eclipses, moon phases, tides, seasons	2
8.S	SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	3
8.S.1	Analyze various implications/effects of scientific advancement within the environment and society.	2
8.S.1.1	Students are able to describe how science and technology have been influenced by social needs, attitudes, and values. Examples: GPS, GIS, remote sensing, Corps of Engineers (dams), NOAA (weather satellites), NASA (earth and space exploration), USGS (mapping)	2
8.S.2	Analyze the relationships/interactions among science, technology, environment, and society.	3
8.S.2.1	Students are able, given a scenario, to offer solutions to problems created by human activity on the local, regional, or global environment. Examples: global warming, deforestation	3

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
9-12.N	NATURE OF SCIENCE	3
9-12.N.1	Understand the nature and origin of scientific knowledge.	3
9-12.N.1.1	Students are able to evaluate a scientific discovery to determine and describe how societal, cultural, and personal beliefs influence scientific investigations and interpretations. Examples: telescope, birth control pill, penicillin, electricity • Recognize scientific knowledge is not merely a set of static facts but is dynamic and affords the best current explanations. Examples: spontaneous generation, relativity, geologic time • Discuss how progress in science can be affected by social issues.	3
9-12.N.1.2	Students are able to describe the role of observation and evidence in the development and modification of hypotheses, theories, and laws. • Research, communicate, and support a scientific argument. • Recognize and analyze alternative explanations and models. • Evaluate the scientific accuracy of information relevant to a specific issue (pseudo-science).	3
9-12.N.2	Apply the skills necessary to conduct scientific investigations.	3
9-12.N.2.1	Students are able to apply science process skills to design and conduct student investigations. • Identify the questions and concepts to guide the development of hypotheses. • Analyze primary sources of information to guide the development of the procedure. • Select and use appropriate instruments to extend observations and measurements. • Revise explanations and models based on evidence and logic. • Use technology and mathematic skills to enhance investigations, communicate results, and defend conclusions. Examples: Computer-based data collection Graphical analysis and representation Use appropriate technology to display data (i.e. spreadsheets, PowerPoint, web).	3
9-12.N.2.2	Students are able to practice safe and effective laboratory techniques. • Handle hazardous materials properly. • Use safety equipment correctly. • Practice emergency procedure. • Wear appropriate attire. • Practice safe behaviors.	1
9-12.P	PHYSICAL SCIENCE	2
9-12.P.1	Describe structures and properties of, and changes in, matter	2
9-12.P.1.1	Students are able to use the Periodic Table to determine the atomic structure of elements, valence number, family relationships, and regions (metals, nonmetals, and metalloids). • Determine protons, neutrons, electrons, mass number, and atomic number from the Periodic Table. • Determine the number of valence electrons for elements in the main (s&p) blocks of the Periodic Table.	2

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
	• Identify the relative metallic character of an element based on its location on the Periodic Table.	
9-12.P.1.2	Students are able to describe ways that atoms combine. • Name and write formulas for binary ionic and covalent compounds. Example: sodium chloride (NaCl), carbon dioxide (CO2) • Compare the roles of electrons in covalent, ionic, and metallic bonding. • Discuss the special nature of carbon covalent bonds.	2
9-12.P.1.3	Students are able to predict whether reactions will speed up or slow down as conditions change. Examples: temperature, concentration, surface area, and catalysts	2
9-12.P.1.4	Students are able to balance chemical equations by applying the Law of Conservation of Matter. • Trace number of particles in diagrams and pictures of balanced equations. Example: Write out an equation with symbols: Mg + 2HCL? MgCl2 + 2H2	2
9-12.P.1.5	Students are able to distinguish among chemical, physical, and nuclear changes. • Differentiate between physical and chemical properties used to describe matter. • Identify key indicators of chemical and physical changes. • Describe the effects of changing pressure, volume, or temperature upon gases. • Identify characteristics of a solution and factors that affect the rate of solution formation. • Explain the differences among nuclear, chemical, and physical changes at the atomic level. Examples: solute, solvent, concentrated, dilute, saturated, unsaturated, supersaturated Factors affecting rate: agitation, heating, particle size, pictures of particles	2
9-12.P.2	Analyze forces, their forms, and their effects on motions.	2
9-12.P.2.1	Students are able to apply concepts of distance and time to the quantitative relationships of motion using appropriate mathematical formulas, equations, and units. • Evaluate speed, velocity, and acceleration both qualitatively and quantitatively. Examples: Identify the sign (+,-, 0) of an object's acceleration based on velocity information. Predict whether an object speeds up, slows down, or maintains a constant speed based on the forces acting upon it. Calculate acceleration using the equation Aavg=?V/?t. • Given distance and time, calculate the velocity or speed of an object. • Create and interpret graphs of linear motion. Example: Given a velocity-time or a distance-time graph with different slopes, determine the motion of an object. • Distinguish between velocity and acceleration as related to force.	2
9-12.P.2.2	Students are able to predict motion of an object using Newton's Laws. • Describe how inertia is related to Newton's First Law. • Explain the effect of balanced and unbalanced forces.	2

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
	• Identify the forces at work on action/reaction pairs as distinguished from balanced forces. Examples: Draw a linear force diagram for the forces acting on an object in contact with another. Identify action/reaction pairs. • Explain how force, mass, and acceleration are related.	
9-12.P.2.3	Students are able to relate concepts of force, distance, and time to the quantitative relationships of work, energy, and power. • Apply appropriate mathematical formulas and equations to concepts using appropriate units. Examples: Calculate power given force, distance and time. Calculate work done on an object given force and distance.	2
9-12.P.3	Analyze interactions of energy and matter.	2
9-12.P.3.1	Students are able to describe the relationships among potential energy, kinetic energy, and work as applied to the Law of Conservation of Energy. • Describe how energy can be transferred and transformed to produce useful work. Examples: Diagram simple energy transfers, describing the objects and the forms of energy gained and lost. Use simple machines as an example of the transmission of energy. • Given the formulas, calculate the mechanical advantage and efficiency of selected systems. • Explain methods of heat transfer. Examples: conduction, radiation, and convection	2
9-12.P.3.2	Students are able to describe how characteristics of waves are related to one another. • Relate wavelength, speed, and frequency (v=?f). • Distinguish between transverse and longitudinal waves. Examples: Discuss changes in frequency of waves using the Doppler Effect. Compare the energy of different frequency ranges of waves with in the electromagnetic spectrum. Describe how different colors of light waves have different amounts of energy.	2
9-12.P.3.3	Students are able to describe electrical effects in terms of motion and concentrations of charged particles. • Relate potential difference to current. • Describe how static electricity is different from current electricity. • Interpret and apply Ohm's Law. • Describe electrical attractions and repulsions. • Describe how magnetism originates from motion of charged particles.	2
9-12.L	LIFE SCIENCE	2
9-12.L.1	Understand the fundamental structures, functions, classifications, and mechanisms found in living things.	2
9-	Students are able to relate cellular functions and processes to specialized structures	2

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
12.L.1.1	within cells. • Transport Examples: cell membrane, homeostasis • Photosynthesis and respiration Examples: ATP-ADP energy cycle Role of enzymes Mitochondria Chloroplasts • Storage and transfer of genetic information Examples: replication, transcription, and translation • Cell life cycles Examples: somatic cells (mitosis), germ cells (meiosis)	
9-12.L.1.2	Students are able to classify organisms using characteristics and evolutionary relationship of major taxa. • Kingdoms Examples: animals, plants, fungi, protista, monera • Phyla Examples: invertebrates, vertebrates, divisions of plants Note: There is an ongoing scientific debate about the number of groupings and which organisms should be included in each.	2
9-12.L.1.3	Students are able to identify structures and function relationships within major taxa. Examples: Relate how the layers in a leaf support leaf function. Interaction of agonist and antagonist muscles to support bone movement	1
9-12.L.2	Analyze various patterns and products of natural and induced biological change.	2
9-12.L.2.1	Students are able to predict inheritance patterns using a single allele. • Solve problems involving simple dominance, co-dominance, and sex-linked traits using Punnett squares for F1 and F2 generations. Examples: color blindness, wavy hair • Discuss disorders resulting from alteration of a single gene. Example: hemophilia, cystic fibrosis	2
9-12.L.2.2	Students are able to describe how genetic recombination, mutations, and natural selection lead to adaptations, evolution, extinction, or the emergence of new species. Examples: behavioral adaptations, environmental pressures, allele variations, bio-diversity • Use comparative anatomy to support evolutionary relationships.	2
9-12.L.3	Analyze how organisms are linked to one another and the environment.	3
9-12.L.3.1	Students are able to identify factors that can cause changes in stability of populations, communities, and ecosystems. • Define populations, communities, ecosystems, niches and symbiotic relationships. • Predict the results of biotic and abiotic interactions. Examples:	3

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
	Responses to changing of the seasons Tolerances (temperature, weather, climate) Dormancy and migration Fluctuation in available resources (water, food, shelter) Human activity Biogeochemical cycles Energy flow Cooperation and competition in ecosystems Response to external stimuli	
9-12.E	EARTH/SPACE SCIENCE	2
9-12.E.1	Analyze the various structures and processes of the Earth system.	2
9-12.E.1.1	. Students are able to explain how elements and compounds cycle between living and non-living systems. • Diagram and describe the N, C, O and H2O cycles. • Describe the importance of the N, C, O and H2O cycles to life on this planet. Examples: water cycle including evaporation, cloud formation, condensation.	2
9-12.E.1.2	Students are able to describe how atmospheric chemistry may affect global climate. Examples: Greenhouse Effect, ozone depletion, ocean's effects on weather	2
9-12.E.1.3	Students are able to assess how human activity has changed the land, ocean, and atmosphere of Earth. Examples: forest cover, chemical usage, farming, urban sprawl, grazing	2
9-12.E.2	Analyze essential principles and ideas about the composition and structure of the universe.	2
9-12.E.2.1	Students are able to recognize how Newtonian mechanics can be applied to the study of the motions of the solar system. • Given a set of possible explanations of orbital motion (revolution), identify those that make use of gravitational forces and inertia.	2
9-12.S	SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	3
9-12.S.1	Analyze various implications/effects of scientific advancement within the environment and society.	2
9-12.S.1.1	Students are able to explain ethical roles and responsibilities of scientists and scientific research. Examples: Sharing of data Accuracy of data Acknowledgement of sources Following laws Animal research Human research Managing hazardous materials and wastes	2
9-12.S.1.2	Students are able to evaluate and describe the impact of scientific discoveries on historical events and social, economic, and ethical issues. Examples: cloning, stem cells, gene splicing, nuclear power, patenting new life forms, emerging diseases, AIDS, resistant forms of bacteria, biological and chemical weapons,	2

Table 11.14
Group Consensus
SOUTH DAKOTA SCIENCE CONTENT STANDARDS, Science, Grade 11

Level	Description	DOK
	global warming, and alternative fuels	
9-12.S.2	Analyze the relationships/interactions among science, technology, environment, and society.	3
9-12.S.2.1	Students are able to describe immediate and long-term consequences of potential solutions for technological issues. Examples: environmental, communication, internet, entertainment, construction, manufacturing, power and transportation, energy sources, health technology, and biotechnology issues • Describe how the pertinent technological system operates. Example: waste management facility	3
9-12.S.2.2	Students are able to analyze factors that could limit technological design. Examples: ethics, environmental impact, manufacturing processes, operation, maintenance, replacement, disposal, and liability	3
9-12.S.2.3	Students are able to analyze and describe the benefits, limitations, cost, and consequences involved in using, conserving, or recycling resources. Examples: mining, agriculture, medicine, school science labs, forestry, energy, disposable diapers, computers, tires	3

Appendix B

Data Analysis Tables

South Dakota
Grades 5, 8, and 11
Science
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.1

Standards #	Number of standards plus one for a generic standard for each standard.
Standards #	Average number of standards for reviewers. If the number is greater than the actual number in the standard, then at least one reviewer coded an item for the standard/standard but did not find any standard in the standard that corresponded to the item.
Level	The Depth-of-Knowledge level coded by the reviewers for the standards for each standard.
# of standards by Level	The number of standards coded at each level
% w/in std by Level	The percent of standards coded at each level
Hits Mean & SD	Mean and standard deviation number of items reviewers coded as corresponding to standard. The total is the total number of coded hits.
Cat. Conc. Accept.	"Yes" indicates that the standard met the acceptable level for criterion. "Yes" if mean is six or more. "Weak" if mean is five to six. "No" if mean is less than five.

Tables *grade*.2

	First five columns repeat columns from Table 1.
Level of Item w.r.t. Stand	Mean percent and standard deviation of items coded as "under" the Depth-of-Knowledge level of the corresponding standard, as "at" (the same) the Depth-of-Knowledge level of the corresponding standard, and as "above" the Depth-of-Knowledge level of the corresponding standard.
Depth-of-Know. Consistency Accept.	"Yes" indicates that 50% or more of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "Weak" indicates that 40% to 50% of the items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards. "No" indicates that less than 40% items were rated as "at" or "above" the Depth-of-Knowledge level of the corresponding standards.

Tables *grade*.3

First five columns repeat columns from Table 1 and 2.

Range of Standards

Standards Hit — Average number and standard deviation of the standards hit coded by reviewers.

% of Total — Average percent and standard deviation of the total standards that had at least one item coded.

Range of Know.

Accept. — "Yes" indicates that 50% or more of the standards had at least one coded standard.
"Weak" indicates that 40% to 50% of the standards had at least one coded standard.
"No" indicates that 40% or less of the standards had at least one coded standard.

Balance Index

% Hits in Std/Ttl Hits — Average and standard deviation of the percent of the items hit for a standard of total number of hits (see total under the Hits column).

Index — Average and standard deviation of the Balance Index.

Note: BALANCE INDEX $1 - (\sum_{k=1} \left| 1/(O) - I_{(k)} /(H) \right|)/2$

Where O = Total number of standards hit for the standard
$I_{(k)}$ = Number of items hit corresponding to standard (k)
H = Total number of items hit for the standard

Bal. of Rep

Accept. — "Yes" indicates that the Balance Index was .7 or above (items evenly distributed among standards).
"Weak" indicates that the Balance Index was .6 to .7 (a high percentage of items coded as corresponding to two or three standards).
"No" indicates that the Balance Index was .6 or less (a high percentage of items coded as corresponding to one standard.)

Tables *grade*.4

Summary if standard met the acceptable level for the four criteria by each standard.

Tables *grade*.6

The DOK value for each assessment item given by each reviewer. The intraclass correlation for the group of reviewers is given on the last row.

Tables *grade*.8

The DOK level and standard code assigned by each reviewer for each item.

Tables *grade*.9

This list for each item all of the standards coded by the group of reviewers as corresponding to the item. Repeat of a standard indicates the number of reviewers who coded that standard as corresponding to the item.

Tables *grade*.10

This lists for each standard all of the items coded by the group of reviewers as corresponding to the standard. Repeat of an item indicates the number of reviewers who coded the item as corresponding to the standard.

Tables *grade*.12

This table summarizes the number of reviewers who coded an item as corresponding to a standard. It contains the same information as in Table 10.

Tables *grade*.13

This table can be used to compare the DOK level of a standard to the average DOK level of the items reviewers assigned to the standard. This table is helpful to identify items with a lower DOK level that should be replaced by an item with a higher DOK level to improve the Depth-of-Knowledge Consistency.

Table 5.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 5
Number of Assessment Items - 70

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
5.1 - NATURE OF SCIENCE	2	2.14	1 3	1 1	50 50	0.57	0.90	NO
5.P - PHYSICAL SCIENCE	3	6.43	1 2	5 1	83 16	20.71	1.03	YES
5.L - LIFE SCIENCE	3	6.43	1 2	3 3	50 50	26.57	1.40	YES
5.E - EARTH/SPACE SCIENCE	2	3.14	1	3	100	13.71	0.45	YES
5.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	3.29	1 2	1 2	33 66	8.57	1.50	YES
Total	12	21.43	1 2 3	13 6 1	65 30 5	70.14	0.35	

Table 5.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Science 2008 Grade 5
Number of Assessment Items - 70

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
5.1 - NATURE OF SCIENCE	2	2.14	0.57	0.90	75	43	25	43	0	0	NO
5.P - PHYSICAL SCIENCE	3	6.43	20.71	1.03	15	101	58	37	27	36	YES
5.L - LIFE SCIENCE	3	6.43	26.57	1.40	26	160	62	31	13	18	YES
5.E - EARTH/SPACE SCIENCE	2	3.14	13.71	0.45	0	0	82	20	18	20	YES
5.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	3.29	8.57	1.50	18	56	67	36	14	31	YES
Total	12	21.43	70.14	0.35	21	34	60	35	20	28	

Table 5.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 5
Number of Assessment Items - 70

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
5.1 - NATURE OF SCIENCE	2	2.14	0.57	0.90	0.57	0.90	24	33	NO	1	1	0.43	0.57	NO
5.P - PHYSICAL SCIENCE	3	6.43	20.71	1.03	6.43	0.49	100	0	YES	30	1	0.77	0.03	YES
5.L - LIFE SCIENCE	3	6.43	26.57	1.40	6.43	0.49	100	0	YES	38	2	0.82	0.02	YES
5.E - EARTH/SPACE SCIENCE	2	3.14	13.71	0.45	3.14	0.35	100	0	YES	20	1	0.92	0.05	YES
5.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	3.29	8.57	1.50	3.29	0.45	100	0	YES	12	2	0.85	0.06	YES
Total	12	21.43	70.14	0.35	3.97	1.90	85	13		20	12	0.76	0.08	

Table 5.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Science 2008 Grade 5
Number of Assessment Items - 70

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
5.1 - NATURE OF SCIENCE	NO	NO	NO	NO
5.P - PHYSICAL SCIENCE	YES	YES	YES	YES
5.L - LIFE SCIENCE	YES	YES	YES	YES
5.E - EARTH/SPACE SCIENCE	YES	YES	YES	YES
5.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	YES	YES	YES

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	2	2	2	1	1	1
2	1	1	1	1	1	1	2
3	1	1	1	1	1	1	1
4	1	1	1	1	1	1	1
5	2	2	2	2	2	2	2
8	1	1	1	1	1	1	1
9	2	2	2	2	2	1	1
10	2	3	2	2	2	2	2
11	2	1	2	1	1	1	1
12	2	3	2	2	2	2	1
13	1	1	1	1	1	1	1
14	2	2	2	2	2	2	2
15	1	1	2	2	1	2	1
16	2	2	2	2	2	2	1
17	1	1	1	1	1	1	1
18	1	1	1	1	1	2	1
19	1	2	2	2	2	1	1
20	1	2	2	2	2	1	1
21	1	2	1	1	1	1	1
22	1	1	1	1	1	1	1
23	1	1	1	1	1	1	1
24	1	1	1	1	1	1	1
25	1	1	1	1	1	1	1
26	1	1	1	1	1	1	1
27	1	1	2	1	1	1	1
28	1	1	1	1	1	1	1
29	1	1	2	1	1	1	1
30	2	2	2	2	1	2	2
31	1	2	2	2	1	2	1
32	2	2	3	2	2	2	1
33	2	2	2	2	1	2	1
34	1	2	2	2	2	1	1
35	2	2	2	2	2	2	1
36	1	2	2	1	1	1	1
37	1	1	1	1	1	1	1
38	2	3	1	2	1	1	2
39	1	3	2	2	1	1	1
40	1	2	1	2	1	1	1
41	1	1	1	1	1	1	1
45	1	2	2	2	1	1	1

Table 5.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 5

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
46	1	1	1	1	1	1	1
47	1	1	1	1	1	1	1
48	2	2	2	2	2	1	1
49	1	1	1	1	1	1	2
50	1	1	1	1	1	1	1
51	1	2	2	2	1	1	1
52	1	2	1	1	1	1	1
53	2	2	2	2	2	1	1
54	2	2	2	1	2	1	1
55	1	2	1	2	1	1	1
56	2	2	2	2	1	2	1
57	1	2	2	1	1	1	1
60	1	2	1	1	2	1	1
61	1	2	2	1	1	1	1
62	1	1	1	2	1	1	1
63	1	1	1	2	1	1	1
64	1	1	1	1	1	1	1
65	1	2	2	1	1	2	1
66	1	2	2	2	1	1	1
67	1	1	1	2	1	1	1
68	1	1	2	1	1	1	1
69	2	1	2	1	1	2	1
70	1	1	1	1	1	1	1
71	2	2	3	3	2	1	1
72	1	2	2	2	1	1	1
73	1	1	1	1	1	1	1
74	1	1	1	1	1	1	1
75	1	2	2	2	1	1	1
76	1	2	2	1	1	1	1
77	2	2	2	1	2	2	1

Intraclass Correlation: 0.8262
Pairwise Comparison: 0.6837

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	5.P.3.2	2	5.P.3.2	2	5.P.3.2		2	5.P.3.2	1	5.P.3.2	1	5.P.3.2	1	5.P.3.2
2	1	5.P.2.2	1	5.P.2.2	1	5.P.2.2		1	5.P.2.2	1	5.P.2	1	5.P.2.2	2	5.P.2.2
3	1	5.L.3.2	1	5.L.3.2	1	5.L.3.2		1	5.L.3.2	1	5.L.3.2	1	5.L.3.2	1	5.L.3.2
4	1	5.P.2.1	1	5.P.2.1	1	5.P.2.1		1	5.P.2.1	1	5.P.2.1	1	5.P.2.1	1	5.P.2.1
5	2	5.P.3.1	2	5.P.1.1	2	5.P.1.1		2	5.P.3.1	2	5.E.2.1	2	5.P.3.1	2	5.P.3.1
8	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1		1	5.E.1.1	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1
9	2	5.S.2.1	2	5.S.2.1	2	5.S.1.1		2	5.S.2.1	2	5.S.2.1	1	5.S.1.1	1	5.1.1
10	2	5.S.2.1	3	5.S.2.1	2	5.L.3.1		2	5.S.2.1	2	5.S.2.1	2	5.S.2.1	2	5.L.3.1
11	2	5.E.2.1	1	5.E.2.1	2	5.E.2.1		1	5.E.2.1	1	5.S.2.1	1	5.E.2.1	1	5.E.2.1
12	2	5.L.3.1	3	5.L.3.1	2	5.L.3.1		2	5.L.3.1	2	5.L.3.1	2	5.L.3.1	1	5.L.3.1
13	1	5.P.2.2	1	5.P.2.2	1	5.P.2.2		1	5.P.2.2	1	5.P.2.2	1	5.P.2.2	1	5.P.2.2
14	2	5.S.1.2	2	5.S.1.2	2	5.S.1.2		2	5.S.1.2	2	5.S.1.2	2	5.S.1.2	2	5.S.1.2
15	1	5.L.1.1	1	5.L.1.1	2	5.L.1.1		2	5.L.1.1	1	5.L.1.1	2	5.L.1.1	1	5.L.1.1
16	2	5.L.3.1	2	5.S.2.1	2	5.L.3.1		2	5.S.2.1	2	5.L.3.1	2	5.L.3.1	1	5.L.3.1
17	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1		1	5.E.1.1	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1
18	1	5.E.2.1	1	5.L.2.1	1	5.E.2		1	5.E.2.1	1	5.E.2.1	2	5.E.2.1	1	5.E.2.1
19	1	5.L.3.1	2	5.S.1.2	2	5.S.2.1		2	5.S.2.1	2	5.L.3.1	1	5.L.3.1	1	5.L.3.1
20	1	5.L.3.1	2	5.L.3.1	2	5.L.3.1		2	5.L.3.1	2	5.L.3.1	1	5.L.3.1	1	5.L.3.1
21	1	5.P.2.1	2	5.S.1.2	1	5.P.2.1		1	5.P.2.1	1	5.P.2.1	1	5.P.2.1	1	5.P.2.1
22	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1		1	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
23	1	5.P.3.3	1	5.P.3.3	1	5.P.3.3		1	5.P.3.3	1	5.L.1.1	1	5.P.3.3	1	5.P.3.3
24	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1		1	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
25	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1		1	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
26	1	5.L.3.3	1	5.L.3.3	1	5.L.3.3		1	5.L.3.3	1	5.L.3.3	1	5.L.3.3	1	5.L.3.3
27	1	5.E.2.2	1	5.E.2.2	2	5.E.2.2		1	5.E.2.2	1	5.E.2.2	1	5.E.2.2	1	5.E.2.2
28	1	5.P.1.1	1	5.P.2.1	1	5.P.2.1		1	5.P.2.1	1	5.L.2.1	1	5.P.2.1	1	5.P.2.1
29	1	5.E.1.1	1	5.E.1.1	2	5.E.1.1		1	5.E.1.1	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1
30	2	5.P.2.1	2	5.P.2.1	2	5.P.2.1		2	5.P.2.1	1	5.P.2.1	2	5.P.2.1	2	5.P.2.1
31	1	5.P.1	2	5.P.1.1	2	5.P.1.1		2	5.P.1.1	1	5.P.3.1	2	5.P.1.1	1	5.P.1.1
32	2	5.L.3.1	2	5.L.3.1	3	5.L.3.1		2	5.L.3.1	2	5.L.3.1	2	5.L.3.1	1	5.L.3.1
33	2	5.L.3.3	2	5.L.3.3	2	5.L.3.3		2	5.L.3.3	1	5.L.3.3	2	5.L.3.3	1	5.L.3.3
34	1	5.S.1.1	2	5.S.1.1	2	5.S.1.1		2	5.S.1.1	2	5.S.1.1	1	5.S.1.1	1	5.S.1.1
35	2	5.L.3.2	2	5.L.3.2	2	5.L.3.2		2	5.L.3.1	2	5.L.3.2	2	5.L.3.2	1	5.L.3.2
36	1	5.E.2.1	2	5.E.2.1	2	5.E.2.1		1	5.E.2.1	1	5.E.2.1	1	5.E.2.1	1	5.E.2.1
37	1	5.L.2.1	1	5.L.2.1	1	5.L.2.1		1	5.L.2.1	1	5.L.2.1	1	5.L.2.1	1	5.L.2.1
38	2	5.S.1.2	3	5.S.1.2	1	5.S.1.1		2	5.S.1.2	1	5.P.2	1	5.P.2	2	5.S.1.2
39	1	5.S.1.2	3	5.P.3.1	2	5.S.1		2	5.S.1.2	1	5.S.1.2	1	5.S.1.2	1	5.S.1.2
40	1	5.L.2.2	2	5.L.2.2	1	5.L.2.2		2	5.L.2.2	1	5.P.2.2	1	5.L.2.2	1	5.L.2.2
41	1	5.L.2.2	1	5.L.2.2	1	5.L.2.2		1	5.L.2.2	1	5.L.2.2	1	5.L.2.2	1	5.L.2.2

Table 5.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 5

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
45	1	5.P.1.1	2	5.P.1.1	2	5.P.1.1		2	5.P.1.1	1	5.P.1.1	1	5.P.1.1	1	5.P.1.1
46	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1		1	5.E.1.1	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1
47	1	5.P.1.1	1	5.P.1.1	1	5.P.1.1		1	5.P.1.1	1	5.P.1.1	1	5.P.1.1	1	5.P.1.1
48	2	5.L.2.2	2	5.L.2.2	2	5.L.2.2		2	5.L.2.2	2	5.L.2.2	1	5.L.2.2	1	5.L.2.2
49	1	5.L.3.2	1	5.L.3.2	1	5.L.3.2		1	5.L.3.2	1	5.L.3.2	1	5.L.3.2	2	5.L.3.2
50	1	5.P.3.3	1	5.P.3.3	1	5.P.3.3		1	5.P.3.3	1	5.P.3.3	1	5.P.3.3	1	5.P.3.3
51	1	5.E.2.2	2	5.E.2.1	2	5.E.2.2	5.P.3.3	2	5.P.3.3	1	5.E.2.2	1	5.E.2.2	1	5.E.2.2
52	1	5.E.2.2	2	5.E.2.2	1	5.E.2.2		1	5.E.2.2	1	5.E.2.2	1	5.E.2.2	1	5.E.2.2
53	2	5.1.2.1	2	5.P.3.1	2	5.P.3.1		2	5.P.3.1	2	5.P.3.1	1	5.P.3.1	1	5.1.2.1
54	2	5.P.1.1	2	5.P.1.1	2	5.1.2.1		1	5.P.1.1	2	5.P.1.1	1	5.P.1.1	1	5.P.1.1
55	1	5.E.2.2	2	5.E.2.2	1	5.E.2.2		2	5.E.2.2	1	5.E.2.2	1	5.E.2.2	1	5.E.2.2
56	2	5.P.2.2	2	5.P.2.2	2	5.P.2.2		2	5.P.2.2	1	5.P.2.1	2	5.P.2.2	1	5.P.2.2
57	1	5.P.2.1	2	5.P.2.1	2	5.P.2.1		1	5.P.2.1	1	5.P.2.1	1	5.P.2.1	1	5.P.2.1
60	1	5.S.1.1	2	5.S.1.2	1	5.S.1.1		1	5.S.1.2	2	5.S.1.1	1	5.S.1.1	1	5.S.2.1
61	1	5.L.1.1	2	5.L.1.1	2	5.L.1.1		1	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
62	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1		2	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
63	1	5.L.3.3	1	5.L.3	1	5.L.3		2	5.L.3.1	1	5.L.3.1	1	5.L.3	1	5.L.3.3
64	1	5.E.2.1	1	5.E.2.1	1	5.E.2.1		1	5.E.2.1	1	5.E.2.1	1	5.E.2.1	1	5.E.2.1
65	1	5.P.1.1	2	5.P.1.1	2	5.P.1.1		1	5.P.1.1	1	5.P.1.1	2	5.P.1.1	1	5.P.1.1
66	1	5.S.1.1	2	5.S.1.1	2	5.S.2.1		2	5.S.1.1	1	5.S.1.1	1	5.S.1	1	5.S.1.1
67	1	5.P.3.2	1	5.P.3.2	1	5.P.3.2		2	5.P.3.1	1	5.P.3.3	1	5.P.3.2	1	5.P.3.3
68	1	5.L.3.1	1	5.S.2.1	2	5.S.2.1		1	5.L.3.1	1	5.L.3.1	1	5.S.2.1	1	5.L.3.1
69	2	5.P.2.2	1	5.P.2.2	2	5.P.2.2		1	5.P.2.2	1	5.L.2.2	2	5.P.2.2	1	5.P.2.2
70	1	5.L.2.2	1	5.L.2.2	1	5.L.2.2		1	5.L.2.2	1	5.L.2.2	1	5.L.2.2	1	5.L.2.2
71	2	5.L.2.1	2	5.L.2.1	3	5.L.2.1		3	5.L.2.1	2	5.L.2.1	1	5.L.2.1	1	5.L.2.1
72	1	5.E.1.1	2	5.E.1.1	2	5.E.1.1		2	5.E.1.1	1	5.E.1.1	1	5.E.1.1	1	5.E.1.1
73	1	5.E.2.1	1	5.E.2.1	1	5.E.2.1		1	5.E.2.1	1	5.E.2.2	1	5.E.2.1	1	5.E.2.1
74	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1		1	5.L.1.1	1	5.L.1.1	1	5.L.1.1	1	5.L.1.1
75	1	5.P.1.1	2	5.P.1.1	2	5.P.2.1		2	5.P.2.1	1	5.P.2.1	1	5.P.2	1	5.P.1.1
76	1	5.L.3.2	2	5.L.3.2	2	5.L.3.2		1	5.L.3.2	1	5.L.3.2	1	5.L.3.2	1	5.L.3.2
77	2	5.L.2.1	2	5.L.2.1	2	5.L.2.1		1	5.L.2.1	2	5.L.2.1	2	5.L.2.1	1	5.L.2.1

Objective Pairwise Comparison: 0.8049
Standard Pairwise Comparison: 0.9045

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 5

Low		Medium		High
0		6.376623		8

1 3503392	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.2
2 3505576	5.P.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2
3 3503412	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2
4 3503408	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1
5 3505580	5.P.1.1	5.P.1.1	5.P.3.1	5.P.3.1	5.P.3.1	5.P.3.1	5.E.2.1
8 3503388	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1
9 3505566	5.1.1	5.S.1.1	5.S.1.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1
10 3505591	5.L.3.1	5.L.3.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1	5.S.2.1
11 3503380	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.S.2.1
12 3522036	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1
13 3503394	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2
14 3505257	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2
15 3521997	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1
16 3516707	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.S.2.1	5.S.2.1
17 3522048	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1
18 3506880	5.L.2.1	5.E.2	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1
19 3503399	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.S.1.2	5.S.2.1	5.S.2.1
20 3503259	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1
21 3505573	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.S.1.2
22 3503414	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1
23 3516692	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.L.1.1
24 3503379	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1
25 3506883	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1
26 3505577	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3
27 3503270	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2
28 3522063	5.P.1.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.L.2.1
29 3516704	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1
30 3522100	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1
31 3503415	5.P.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.3.1
32 3522116	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1
33 3522097	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3	5.L.3.3
34 3521979	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1
35 3522053	5.L.3.1	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2
36 3505251	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1
37 3503410	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1
38 3516706	5.P.2	5.P.2	5.S.1.1	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2
39 3503387	5.P.3.1	5.S.1	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2	5.S.1.2
40 3506364	5.P.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2

Table 5.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 5

41 3505579	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	
45 3516688	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	
46 3522024	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	
47 3503409	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	
48 3521962	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	
49 3505558	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	
50 3522069	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	5.P.3.3	
51 3522028	5.P.3.3	5.P.3.3	5.E.2.1	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2
52 3521976	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	
53 3503390	5.1.2.1	5.1.2.1	5.P.3.1	5.P.3.1	5.P.3.1	5.P.3.1	5.P.3.1	
54 3516686	5.1.2.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	
55 3522073	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	5.E.2.2	
56 3522039	5.P.2.1	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	
57 3505225	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	5.P.2.1	
60 3503402	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.2	5.S.1.2	5.S.2.1	
61 3516702	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	
62 3522011	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	
63 3521994	5.L.3	5.L.3	5.L.3	5.L.3.1	5.L.3.1	5.L.3.3	5.L.3.3	
64 3503381	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	
65 3506371	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	5.P.1.1	
66 3503273	5.S.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.1.1	5.S.2.1	
67 3505556	5.P.3.1	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.2	5.P.3.3	5.P.3.3	
68 3503277	5.L.3.1	5.L.3.1	5.L.3.1	5.L.3.1	5.S.2.1	5.S.2.1	5.S.2.1	
69 3503395	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.P.2.2	5.L.2.2	
70 3503384	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	5.L.2.2	
71 3522088	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	
72 3506365	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	5.E.1.1	
73 3522046	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.1	5.E.2.2	
74 3503252	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	5.L.1.1	
75 3522087	5.P.1.1	5.P.1.1	5.P.1.1	5.P.2	5.P.2.1	5.P.2.1	5.P.2.1	
76 3503411	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	5.L.3.2	
77 3521960	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	5.L.2.1	

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 5

Low		Medium		High
0		12.92105		50

5.1																				
5.1.1	9																			
5.1.1.1																				
5.1.2																				
5.1.2.1	53	53	54																	
5.P																				
5.P.1	31																			
5.P.1.1	5	5	28	31	31	31	31	31	45	45	45	45	45	45	45	47	47	47	47	47
	47	47	54	54	54	54	54	54	65	65	65	65	65	65	65	75	75	75		
5.P.2	2	38	38	75																
5.P.2.1	4	4	4	4	4	4	4	21	21	21	21	21	21	28	28	28	28	28	30	30
	30	30	30	30	30	56	57	57	57	57	57	57	57	75	75	75				
5.P.2.2	2	2	2	2	2	2	13	13	13	13	13	13	13	40	56	56	56	56	56	56
	69	69	69	69	69	69														
5.P.3																				
5.P.3.1	5	5	5	5	31	39	53	53	53	53	53	67								
5.P.3.2	1	1	1	1	1	1	1	67	67	67	67									
5.P.3.3	23	23	23	23	23	23	50	50	50	50	50	50	50	51	51	67	67			
5.L																				
5.L.1																				
5.L.1.1	15	15	15	15	15	15	15	22	22	22	22	22	22	22	23	24	24	24	24	24
	24	24	25	25	25	25	25	25	25	61	61	61	61	61	61	61	62	62	62	
	62	62	62	62	74	74	74	74	74	74	74									

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 5

5.L.2																				
5.L.2.1	18	28	37	37	37	37	37	37	37	71	71	71	71	71	71	71	77	77	77	77
	77	77	77																	
5.L.2.2	40	40	40	40	40	40	41	41	41	41	41	41	41	48	48	48	48	48	48	48
	69	70	70	70	70	70	70	70												
5.L.3	63	63	63																	
5.L.3.1	10	10	12	12	12	12	12	12	12	16	16	16	16	16	19	19	19	19	20	20
	20	20	20	20	20	32	32	32	32	32	32	32	35	63	63	68	68	68	68	
5.L.3.2	3	3	3	3	3	3	3	35	35	35	35	35	35	49	49	49	49	49	49	49
	76	76	76	76	76	76	76													
5.L.3.3	26	26	26	26	26	26	26	33	33	33	33	33	33	33	63	63				
5.E																				
5.E.1																				
5.E.1.1	8	8	8	8	8	8	8	17	17	17	17	17	17	17	29	29	29	29	29	29
	29	46	46	46	46	46	46	46	72	72	72	72	72	72	72					
5.E.2	18																			
5.E.2.1	5	11	11	11	11	11	11	18	18	18	18	18	36	36	36	36	36	36	36	51
	64	64	64	64	64	64	64	73	73	73	73	73	73							
5.E.2.2	27	27	27	27	27	27	27	51	51	51	51	51	52	52	52	52	52	52	52	55
	55	55	55	55	55	55	73													
5.S																				
5.S.1	39	66																		
5.S.1.1	9	9	34	34	34	34	34	34	34	38	60	60	60	60	66	66	66	66	66	

Table 5.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 5

5.S.1.2	14	14	14	14	14	14	14	19	21	38	38	38	38	39	39	39	39	39	60	60
5.S.2																				
5.S.2.1	9	9	9	9	10	10	10	10	10	11	16	16	19	19	60	66	68	68	68	

Table 5.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

South Dakota Science 2008 Grade 5

Low		Medium		High
1		3		7

5.1								
5.1.1	9:1							
5.1.1.1								
5.1.2								
5.1.2.1	53:2	54:1						
5.P								
5.P.1	31:1							
5.P.1.1	5:2	28:1	31:5	45:7	47:7	54:6	65:7	75:3
5.P.2	2:1	38:2	75:1					
5.P.2.1	4:7	21:6	28:5	30:7	56:1	57:7	75:3	
5.P.2.2	2:6	13:7	40:1	56:6	69:6			
5.P.3								
5.P.3.1	5:4	31:1	39:1	53:5	67:1			
5.P.3.2	1:7	67:4						
5.P.3.3	23:6	50:7	51:2	67:2				
5.L								
5.L.1								
5.L.1.1	15:7	22:7	23:1	24:7	25:7	61:7	62:7	74:7
5.L.2								
5.L.2.1	18:1	28:1	37:7	71:7	77:7			
5.L.2.2	40:6	41:7	48:7	69:1	70:7			
5.L.3	63:3							
5.L.3.1	10:2	12:7	16:5	19:4	20:7	32:7	35:1	63:2	68:4
5.L.3.2	3:7	35:6	49:7	76:7				
5.L.3.3	26:7	33:7	63:2					
5.E								
5.E.1								
5.E.1.1	8:7	17:7	29:7	46:7	72:7			
5.E.2	18:1							
5.E.2.1	5:1	11:6	18:5	36:7	51:1	64:7	73:6	
5.E.2.2	27:7	51:5	52:7	55:7	73:1			
5.S								
5.S.1	39:1	66:1						
5.S.1.1	9:2	34:7	38:1	60:4	66:5			
5.S.1.2	14:7	19:1	21:1	38:4	39:5	60:2		
5.S.2								
5.S.2.1	9:4	10:5	11:1	16:2	19:2	60:1	66:1	68:3

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 5

Low		Medium		High
1		3		7

1 3503392	5.P.3.2:7		
2 3505576	5.P.2:1	5.P.2.2:6	
3 3503412	5.L.3.2:7		
4 3503408	5.P.2.1:7		
5 3505580	5.P.1.1:2	5.P.3.1:4	5.E.2.1:1
8 3503388	5.E.1.1:7		
9 3505566	5.1.1:1	5.S.1.1:2	5.S.2.1:4
10 3505591	5.L.3.1:2	5.S.2.1:5	
11 3503380	5.E.2.1:6	5.S.2.1:1	
12 3522036	5.L.3.1:7		
13 3503394	5.P.2.2:7		
14 3505257	5.S.1.2:7		
15 3521997	5.L.1.1:7		
16 3516707	5.L.3.1:5	5.S.2.1:2	
17 3522048	5.E.1.1:7		
18 3506880	5.L.2.1:1	5.E.2:1	5.E.2.1:5
19 3503399	5.L.3.1:4	5.S.1.2:1	5.S.2.1:2
20 3503259	5.L.3.1:7		
21 3505573	5.P.2.1:6	5.S.1.2:1	
22 3503414	5.L.1.1:7		
23 3516692	5.P.3.3:6	5.L.1.1:1	
24 3503379	5.L.1.1:7		
25 3506883	5.L.1.1:7		
26 3505577	5.L.3.3:7		
27 3503270	5.E.2.2:7		
28 3522063	5.P.1.1:1	5.P.2.1:5	5.L.2.1:1
29 3516704	5.E.1.1:7		
30 3522100	5.P.2.1:7		
31 3503415	5.P.1:1	5.P.1.1:5	5.P.3.1:1
32 3522116	5.L.3.1:7		
33 3522097	5.L.3.3:7		
34 3521979	5.S.1.1:7		
35 3522053	5.L.3.1:1	5.L.3.2:6	
36 3505251	5.E.2.1:7		
37 3503410	5.L.2.1:7		
38 3516706	5.P.2:2	5.S.1.1:1	5.S.1.2:4
39 3503387	5.P.3.1:1	5.S.1:1	5.S.1.2:5
40 3506364	5.P.2.2:1	5.L.2.2:6	

Table 5.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 5

41 3505579	5.L.2.2:7		
45 3516688	5.P.1.1:7		
46 3522024	5.E.1.1:7		
47 3503409	5.P.1.1:7		
48 3521962	5.L.2.2:7		
49 3505558	5.L.3.2:7		
50 3522069	5.P.3.3:7		
51 3522028	5.P.3.3:2	5.E.2.1:1	5.E.2.2:5
52 3521976	5.E.2.2:7		
53 3503390	5.1.2.1:2	5.P.3.1:5	
54 3516686	5.1.2.1:1	5.P.1.1:6	
55 3522073	5.E.2.2:7		
56 3522039	5.P.2.1:1	5.P.2.2:6	
57 3505225	5.P.2.1:7		
60 3503402	5.S.1.1:4	5.S.1.2:2	5.S.2.1:1
61 3516702	5.L.1.1:7		
62 3522011	5.L.1.1:7		
63 3521994	5.L.3:3	5.L.3.1:2	5.L.3.3:2
64 3503381	5.E.2.1:7		
65 3506371	5.P.1.1:7		
66 3503273	5.S.1:1	5.S.1.1:5	5.S.2.1:1
67 3505556	5.P.3.1:1	5.P.3.2:4	5.P.3.3:2
68 3503277	5.L.3.1:4	5.S.2.1:3	
69 3503395	5.P.2.2:6	5.L.2.2:1	
70 3503384	5.L.2.2:7		
71 3522088	5.L.2.1:7		
72 3506365	5.E.1.1:7		
73 3522046	5.E.2.1:6	5.E.2.2:1	
74 3503252	5.L.1.1:7		
75 3522087	5.P.1.1:3	5.P.2:1	5.P.2.1:3
76 3503411	5.L.3.2:7		
77 3521960	5.L.2.1:7		

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 5

Low DOK		Matched DOK		High DOK
1		3		7

5.1 [3]:								
5.1.1 [1]:	9:1[1]							
5.1.1.1 [1]:								
5.1.2 [3]:								
5.1.2.1 [3]:	53:2 [1.5]	54:1 [2]						
5.P [1]:								
5.P.1 [1]:	31:1 [1]							
5.P.1.1 [1]:	5:2[2]	28:1 [1]	31:5 [1.8]	45:7 [1.43]	47:7 [1]	54:6 [1.5]	65:7 [1.43]	75:3 [1.33]
5.P.2 [2]:	2:1[1]	38:2 [1]	75:1 [1]					
5.P.2.1 [1]:	4:7[1]	21:6 [1]	28:5 [1]	30:7 [1.86]	56:1 [1]	57:7 [1.29]	75:3 [1.67]	
5.P.2.2 [2]:	2:6[1.17]	13:7 [1]	40:1 [1]	56:6 [1.83]	69:6 [1.5]			
5.P.3 [1]:								
5.P.3.1 [1]:	5:4[2]	31:1 [1]	39:1 [3]	53:5 [1.8]	67:1 [2]			
5.P.3.2 [1]:	1:7[1.43]	67:4 [1]						

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 5

5.P.3.3 [1]:	23:6 [1]	50:7 [1]	51:2 [2]	67:2 [1]					
5.L [2]:									
5.L.1 [1]:									
5.L.1.1 [1]:	15:7 [1.43]	22:7 [1]	23:1 [1]	24:7 [1]	25:7 [1]	61:7 [1.29]	62:7 [1.14]	74:7 [1]	
5.L.2 [2]:									
5.L.2.1 [2]:	18:1 [1]	28:1 [1]	37:7 [1]	71:7 [2]	77:7 [1.71]				
5.L.2.2 [1]:	40:6 [1.33]	41:7 [1]	48:7 [1.71]	69:1 [1]	70:7 [1]				
5.L.3 [2]:	63:3 [1]								
5.L.3.1 [2]:	10:2 [2]	12:7 [2]	16:5 [1.8]	19:4 [1.25]	20:7 [1.57]	32:7 [2]	35:1 [2]	63:2 [1.5]	68:4 [1]
5.L.3.2 [2]:	3:7[1]	35:6 [1.83]	49:7 [1.14]	76:7 [1.29]					
5.L.3.3 [1]:	26:7 [1]	33:7 [1.71]	63:2 [1]						
5.E [1]:									
5.E.1 [1]:									
5.E.1.1 [1]:	8:7[1]	17:7 [1]	29:7 [1.14]	46:7 [1]	72:7 [1.43]				
5.E.2 [1]:	18:1 [1]								

Table 5.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 5

5.E.2.1 [1]:	5:1[2]	11:6[1.33]	18:5[1.2]	36:7[1.29]	51:1[2]	64:7[1]	73:6[1]	
5.E.2.2 [1]:	27:7[1.14]	51:5[1.2]	52:7[1.14]	55:7[1.29]	73:1[1]			
5.S [2]:								
5.S.1 [2]:	39:1[2]	66:1[1]						
5.S.1.1 [1]:	9:2[1.5]	34:7[1.57]	38:1[1]	60:4[1.25]	66:5[1.4]			
5.S.1.2 [2]:	14:7[2]	19:1[2]	21:1[2]	38:4[2.25]	39:5[1.2]	60:2[1.5]		
5.S.2 [2]:								
5.S.2.1 [2]:	9:4[2]	10:5[2.2]	11:1[1]	16:2[2]	19:2[2]	60:1[1]	66:1[2]	68:3[1.33]

Table 8.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 8
Number of Assessment Items - 70

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
8.N - NATURE OF SCIENCE	2	2	2 3	1 1	50 50	13.71	0.70	YES
8.P - PHYSICAL SCIENCE	1	3	2	3	100	13.43	0.73	YES
8.E - EARTH/SPACE SCIENCE	2	7.14	1 2	2 5	28 71	29.57	1.59	YES
8.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	2.29	2 3	1 1	50 50	13.71	0.45	YES
Total	7	14.43	1 2 3	2 10 2	14 71 14	70.43	1.05	

Table 8.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Science 2008 Grade 8
Number of Assessment Items - 70

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
8.N - NATURE OF SCIENCE	2	2	13.71	0.70	83	519	17	21	0	0	NO
8.P - PHYSICAL SCIENCE	1	3	13.43	0.73	76	291	23	20	1	5	NO
8.E - EARTH/SPACE SCIENCE	2	7.14	29.57	1.59	40	193	49	29	11	21	YES
8.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	2.29	13.71	0.45	74	459	26	34	0	0	NO
Total	7	14.43	70.43	1.05	58	36	36	30	6	16	

Table 8.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 8
Number of Assessment Items - 70

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
8.N - NATURE OF SCIENCE	2	2	13.71	0.70	2	0	100	0	YES	19	1	0.97	0.04	YES
8.P - PHYSICAL SCIENCE	1	3	13.43	0.73	3	0	100	0	YES	19	1	0.95	0.01	YES
8.E - EARTH/SPACE SCIENCE	2	7.14	29.57	1.59	7.14	0.35	100	0	YES	42	2	0.93	0.04	YES
8.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	2.29	13.71	0.45	2.29	0.45	100	0	YES	19	1	0.88	0.10	YES
Total	7	14.43	70.43	1.05	3.61	2.09	100	0		25	10	0.93	0.06	

Table 8.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Science 2008 Grade 8
Number of Assessment Items - 70

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
8.N - NATURE OF SCIENCE	YES	NO	YES	YES
8.P - PHYSICAL SCIENCE	YES	NO	YES	YES
8.E - EARTH/SPACE SCIENCE	YES	YES	YES	YES
8.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	NO	YES	YES

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	2	2	2	1	1	1	1
2	1	1	1	1	1	1	1
3	2	2	3	2	2	2	1
4	1	2	2	1	2	2	1
5	1	2	2	2	2	1	1
6	1	1	2	2	1	1	1
7	1	2	1	2	1	1	1
8	2	2	2	2	2	2	2
9	1	1	2	1	1	1	1
10	2	1	2	1	2	2	2
11	2	2	3	2	3	2	2
12	1	2	1	1	2	1	1
15	1	1	2	2	1	1	1
16	1	2	2	2	2	1	1
17	1	2	2	2	1	1	1
18	1	1	1	1	1	1	1
19	1	1	2	1	1	1	1
20	2	2	1	2	1	1	2
21	2	1	1	1	2	1	1
22	1	1	2	2	1	1	2
23	1	1	1	1	2	1	1
24	2	1	2	2	2	2	1
25	1	2	2	1	1	2	1
26	1	1	1	1	1	1	1
27	1	2	1	1	1	1	1
28	1	1	2	1	1	1	1
29	1	2	2	1	1	1	1
30	1	2	1	2	1	1	1
31	1	1	1	1	1	1	1
32	1	1	2	1	2	1	1
33	2	1	2	2	2	2	2
34	2	2	2	2	2	2	1
35	1	2	2	2	1	2	1
36	2	2	2	2	2	2	2
37	1	1	2	1	1	2	2
38	2	1	2	1	2	1	1
41	2	1	2	2	2	2	2
42	2	1	2	1	2	1	1
43	1	2	1	2	2	2	1
44	1	2	2	2	1	1	1

Table 8.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 8

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
45	1	1	3	1	1	1	1
46	1	1	1	1	1	1	1
47	1	1	1	1	2	1	1
48	2	2	2	1	2	1	1
49	1	1	2	2	1	2	1
50	2	2	2	1	2	2	1
51	2	1	2	1	2	2	1
52	2	2	2	2	2	1	1
53	2	1	1	2	2	2	2
54	1	2	2	1	1	1	1
55	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1
57	2	2	3	2	1	2	1
58	2	2	2	1	1	2	1
59	1	2	2	2	2	1	1
60	2	1	2	2	2	2	1
61	1	1	1	1	1	1	1
62	2	2	2	1	2	2	1
66	2	2	1	2	2	1	1
67	1	1	2	2	1	1	1
68	1	2	2	2	2	2	1
69	1	1	1	1	1	1	1
70	2	2	2	2	1	2	1
71	2	1	2	1	1	1	1
72	1	1	1	1	1	1	1
73	2	2	2	2	2	2	1
74	1	1	1	1	1	1	1
75	1	1	2	1	1	1	1
76	2	2	2	2	2	2	2
77	1	1	1	2	1	2	1

Intraclass Correlation: 0.7484
Pairwise Comparison: 0.6211

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	2	8.N.1.1	2	8.N.1.1	2	8.N.1.1		1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
2	1	8.P.1.3	1	8.P.1.3	1	8.P.1.3		1	8.P.1.3	1	8.P.1.3	1	8.P.1.3	1	8.P.1.3
3	2	8.S.2.1	2	8.S.2.1	3	8.S.2.1		2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1
4	1	8.S.1.1	2	8.S.1.1	2	8.S.1.1	8.E.1.3	1	8.S.1.1	2	8.S.1.1	2	8.S.1.1	1	8.S.1.1
5	1	8.S.2.1	2	8.S.2.1	2	8.S.2.1		2	8.S.2.1	2	8.S.2.1	1	8.S.2.1	1	8.S.2.1
6	1	8.E.1.4	1	8.E.1.4	2	8.E.1.4		2	8.E.1.4	1	8.E.1.4	1	8.E.1.4	1	8.E.1.4
7	1	8.E.2.2	2	8.E.2.2	1	8.E.2.2		2	8.E.2.2	1	8.E.2.2	1	8.E.2.2	1	8.E.2.2
8	2	8.N.2.1	2	8.N.2.1	2	8.N.2.1		2	8.N.2.1	2	8.N.2.1	2	8.N.2.1	2	8.N.2.1
9	1	8.E.1.1	1	8.E.1.1	2	8.E.1.1		1	8.E.1.1	1	8.E.1.1	1	8.E.1.1	1	8.E.1.1
10	2	8.N.2.1	1	8.N.1.1	2	8.N.1.1		1	8.N.2.1	2	8.N.1.1	2	8.N.1.1	2	8.N.2.1
11	2	8.N.2.1	2	8.N.2.1	3	8.N.2.1		2	8.N.2.1	3	8.N.2.1	2	8.N.2.1	2	8.N.2.1
12	1	8.S.1.1	2	8.S.1.1	1	8.S.1.1		1	8.S.1.1	2	8.S.2.1	1	8.S.1.1	1	8.S.2.1
15	1	8.E.1.2	1	8.E.1.2	2	8.E.1.2		2	8.E.1.2	1	8.E.1.2	1	8.E.1.2	1	8.E.1.2
16	1	8.P.1.2	2	8.P.1.2	2	8.P.1.2		2	8.P.1.2	2	8.P.1.2	1	8.P.1.2	1	8.P.1.2
17	1	8.E.1.4	2	8.E.1.4	2	8.E.1.4		2	8.E.1.4	1	8.E.1.4	1	8.E.1.4	1	8.E.1.4
18	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1		1	8.P.1.1	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1
19	1	8.E.1.5	1	8.E.1.5	2	8.E.1.5		1	8.E.1.5	1	8.E.1.5	1	8.E.1.5	1	8.E.1.5
20	2	8.E.1.2	2	8.E.1.2	1	8.E.1.2		2	8.E.1.2	1	8.E.1.2	1	8.E.1.2	2	8.E.1.2
21	2	8.E.2.1	1	8.E.2.1	1	8.E.2.1		1	8.E.2.1	2	8.E.2.1	1	8.E.2.1	1	8.E.2.1
22	1	8.P.1.1	1	8.P.1.2	2	8.P.1.1	8.E.1.3	2	8.P.1.1	1	8.P.1.1	1	8.P.1.1	2	8.P.1.1
23	1	8.N.2.1	1	8.N.2.1	1	8.N.2.1		1	8.N.2.1	2	8.N.2.1	1	8.N.2.1	1	8.N.2.1
24	2	8.E.1.3	1	8.E.1.3	2	8.E.1.3		2	8.E.1.3	2	8.E.1.3	2	8.E.1.3	1	8.E.1.3
25	1	8.S.1.1	2	8.S.1.1	2	8.S.1.1		1	8.S.1.1	1	8.S.1.1	2	8.S.1.1	1	8.S.1.1
26	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1		1	8.N.1.1	1	8.E.1.1	1	8.N.1.1	1	8.N.1.1
27	1	8.E.1.5	2	8.E.1.5	1	8.E.1.5		1	8.E.1.5	1	8.E.1.5	1	8.E.1.5	1	8.E.1.5
28	1	8.N.1.1	1	8.N.1.1	2	8.N.1.1		1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
29	1	8.N.1.1	2	8.N.1.1	2	8.N.1.1		1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
30	1	8.S.1.1	2	8.S.1.1	1	8.S.1.1		2	8.S.1.1	1	8.S.1.1	1	8.S.1.1	1	8.S.1.1
31	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1		1	8.P.1.1	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1
32	1	8.E.1.2	1	8.E.1.2	2	8.E.1.2		1	8.E.1.2	2	8.E.1.2	1	8.E.1.2	1	8.E.1.2
33	2	8.E.1.1	1	8.E.1.1	2	8.E.1.1		2	8.E.1.1	2	8.E.1.1	2	8.E.1.1	2	8.E.1.1
34	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1		2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1
35	1	8.E.1.5	2	8.E.1.5	2	8.E.1.5		2	8.E.1.5	1	8.S.2.1	2	8.E.1.5	1	8.E.1.5
36	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1		2	8.S.2.1	2	8.S.2.1	2	8.S.2.1	2	8.S.2.1
37	1	8.E.2.2	1	8.E.2.2	2	8.E.2.2		1	8.E.2.2	1	8.E.2.2	2	8.E.2.2	2	8.E.2.2
38	2	8.N.2.1	1	8.N.2.1	2	8.N.2.1		1	8.N.2.1	2	8.N.2.1	1	8.N.2.1	1	8.N.2.1
41	2	8.E.1.1	1	8.E.1.1	2	8.E.1.1		2	8.E.1.1	2	8.E.1.1	2	8.E.1.1	2	8.E.1.1
42	2	8.P.1.2	1	8.P.1.2	2	8.P.1.2		1	8.P.1.2	2	8.P.1.2	1	8.P.1.2	1	8.P.1.2
43	1	8.P.1.3	2	8.P.1.3	1	8.P.1.3		2	8.E.1.5	2	8.E.1.5	2	8.P.1.3	1	8.P.1.3

Table 8.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 8

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	S1Obj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
44	1	8.S.1.1	2	8.S.1.1	2	8.S.1.1		2	8.S.1.1	1	8.S.1.1	1	8.S.1.1	1	8.S.1.1
45	1	8.P.1.2	1	8.P.1.2	3	8.P.1.2		1	8.P.1.2	1	8.P.1.2	1	8.P.1.2	1	8.P.1.2
46	1	8.E.1.3	1	8.E.1.3	1	8.E.2.2		1	8.E.1.3	1	8.P.1.3	1	8.E.1.3	1	8.E.1.3
47	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1		1	8.P.1.1	2	8.P.1.1	1	8.P.1.1	1	8.P.1.1
48	2	8.P.1.3	2	8.P.1.3	2	8.P.1.3		1	8.P.1.3	2	8.P.1.3	1	8.P.1.3	1	8.P.1.3
49	1	8.E.2.2	1	8.E.2.2	2	8.E.2.2		2	8.E.2.2	1	8.E.2.2	2	8.E.2.2	1	8.E.2.2
50	2	8.N.1.1	2	8.N.1.1	2	8.N.1.1		1	8.N.1.1	2	8.N.1.1	2	8.N.1.1	1	8.N.1.1
51	2	8.N.2.1	1	8.N.2.1	2	8.N.2.1		1	8.N.2.1	2	8.N.2.1	2	8.N.2.1	1	8.N.2.1
52	2	8.E.1.3	2	8.E.1.3	2	8.E.1.3		2	8.E.1.3	2	8.E.1.3	1	8.E.1.3	1	8.E.1.3
53	2	8.E.2.1	1	8.E.2.1	1	8.E.2.1		2	8.E.2.1	2	8.E.2.1	2	8.E.2.1	2	8.E.2.1
54	1	8.E.1.5	2	8.E.1.2	2	8.E.1.5		1	8.E.1.5	1	8.E.1.2	1	8.E.1.5	1	8.E.1.5
55	1	8.P.1.3	1	8.E.1.5	1	8.P.1.3		1	8.E.1.5	1	8.E.1.5	1	8.P.1.3	1	8.P.1.3
56	1	8.E.2.1	1	8.E.2.1	1	8.E.2.1		1	8.E.2.1	1	8.E.2.1	1	8.E.2.1	1	8.E.2.1
57	2	8.S.2.1	2	8.S.2.1	3	8.S.2.1		2	8.S.2.1	1	8.S.2.1	2	8.S.2.1	1	8.S.2.1
58	2	8.S.1.1	2	8.S.1.1	2	8.S.1.1		1	8.S.1.1	1	8.S.1.1	2	8.S.1.1	1	8.S.1.1
59	1	8.P.1.3	2	8.P.1.3	2	8.P.1.3		2	8.P.1.3	2	8.P.1.3	1	8.P.1.3	1	8.P.1.3
60	2	8.N.2.1	1	8.N.2.1	2	8.N.2.1		2	8.N.2.1	2	8.N.2.1	2	8.N.2.1	1	8.N.2.1
61	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1		1	8.N.1.1	1	8.N.1.1	1	8.N.1.1	1	8.N.1.1
62	2	8.E.1.2	2	8.E.1.2	2	8.E.1.2		1	8.E.1.2	2	8.E.1.2	2	8.E.1.2	1	8.E.1.2
66	2	8.S.1.1	2	8.S.1.1	1	8.S.1.1		2	8.S.1.1	2	8.S.2.1	1	8.S.1.1	1	8.S.1.1
67	1	8.E.1.2	1	8.E.1.2	2	8.E.1.2		2	8.E.1.2	1	8.E.1.2	1	8.E.1.2	1	8.E.1.2
68	1	8.S.2.1	2	8.S.2.1	2	8.E.1.5		2	8.E.1	2	8.S.2.1	2	8.S.2.1	1	8.S.2.1
69	1	8.E.1.1	1	8.E.1.1	1	8.E.1.1		1	8.E.1.1	1	8.E.1.1	1	8.E.1.1	1	8.E.1.1
70	2	8.E.1.4	2	8.E.1.4	2	8.E.1.4		2	8.E.1.4	1	8.E.1.4	2	8.E.1.4	1	8.E.1.4
71	2	8.N.2.1	1	8.N.2.1	2	8.N.2.1		1	8.N.2.1	1	8.E.1.1	1	8.N.2.1	1	8.N.2.1
72	1	8.P.1.2	1	8.P.1.2	1	8.P.1.2		1	8.P.1.2	1	8.P.1.2	1	8.P.1.2	1	8.P.1.2
73	2	8.S.2.1	2	8.S.1	2	8.S.2.1	8.E.1.5	2	8.S.2.1	2	8.E.1.5	2	8.S.2	1	8.S.2.1
74	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1		1	8.P.1.1	1	8.P.1.1	1	8.P.1.1	1	8.P.1.1
75	1	8.E.2.2	1	8.E.2.2	2	8.E.2.2		1	8.E.2.2	1	8.E.2.2	1	8.E.2.2	1	8.E.2.2
76	2	8.E.1.4	2	8.E.1.4	2	8.E.1.4		2	8.E.1.4	2	8.E.1.4	2	8.E.1.4	2	8.E.1.4
77	1	8.E.1.3	1	8.E.1.3	1	8.E.1.3		2	8.E.1.3	1	8.E.1.3	2	8.E.1.3	1	8.E.1.3

Objective Pairwise Comparison: 0.9073
Standard Pairwise Comparison: 0.9469

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 8

Low		Medium		High
0		6.402597		8

1 3522117	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	
2 3505484	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	
3 3522194	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
4 3504293	8.E.1.3	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1
5 3504297	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
6 3505635	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	
7 3505504	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	
8 3522201	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
9 3505402	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	
10 3504288	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.2.1	8.N.2.1	8.N.2.1	
11 3522244	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
12 3522192	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.2.1	8.S.2.1	
15 3505630	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	
16 3522168	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	
17 3505456	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	
18 3505437	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	
19 3526361	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	
20 3505407	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	
21 3504282	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	
22 3522247	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.2	8.E.1.3
23 3504291	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
24 3505451	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	
25 3504286	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	
26 3505471	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.E.1.1	
27 3505458	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	
28 3505432	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	
29 3505409	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	
30 3522276	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	
31 3504280	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	
32 3505406	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	
33 3505447	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	
34 3522235	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
35 3505422	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.S.2.1	
36 3505501	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
37 3504284	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	
38 3505435	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
41 3505487	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	
42 3505439	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	

Table 8.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 8

43 3522129	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.E.1.5	8.E.1.5	
44 3522232	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	
45 3505441	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	
46 3505492	8.P.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.2.2	
47 3504281	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	
48 3505485	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	
49 3505426	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	
50 3522242	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	
51 3505411	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
52 3505493	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	
53 3526355	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	
54 3505639	8.E.1.2	8.E.1.2	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	8.E.1.5	
55 3505624	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.E.1.5	8.E.1.5	8.E.1.5	
56 3504283	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	8.E.2.1	
57 3522233	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
58 3522132	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	
59 3505399	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	8.P.1.3	
60 3522246	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	
61 3505433	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	8.N.1.1	
62 3505405	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	
66 3522134	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.1.1	8.S.2.1	
67 3505491	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	8.E.1.2	
68 3522234	8.E.1	8.E.1.5	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1	
69 3505403	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	8.E.1.1	
70 3505636	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	
71 3504290	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.N.2.1	8.E.1.1	
72 3505480	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	8.P.1.2	
73 3505479	8.E.1.5	8.E.1.5	8.S.1	8.S.2	8.S.2.1	8.S.2.1	8.S.2.1	8.S.2.1
74 3522204	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	8.P.1.1	
75 3505505	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	8.E.2.2	
76 3505418	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	8.E.1.4	
77 3505415	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	8.E.1.3	

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 8

Low		Medium		High
0		18.96154		51

8.N																				
8.N.1																				
8.N.1.1	1	1	1	1	1	1	1	10	10	10	10	26	26	26	26	26	26	28	28	28
	28	28	28	28	29	29	29	29	29	29	29	50	50	50	50	50	50	50	61	
	61	61	61	61	61	61														
8.N.2																				
8.N.2.1	8	8	8	8	8	8	8	10	10	10	11	11	11	11	11	11	11	23	23	23
	23	23	23	23	38	38	38	38	38	38	38	51	51	51	51	51	51	51	60	
	60	60	60	60	60	60	71	71	71	71	71	71								
8.P																				
8.P.1																				
8.P.1.1	18	18	18	18	18	18	18	22	22	22	22	22	22	31	31	31	31	31	31	31
	47	47	47	47	47	47	47	74	74	74	74	74	74	74						
8.P.1.2	16	16	16	16	16	16	16	22	42	42	42	42	42	42	42	45	45	45	45	45
	45	45	72	72	72	72	72	72	72											
8.P.1.3	2	2	2	2	2	2	2	43	43	43	43	43	46	48	48	48	48	48	48	48
	55	55	55	55	59	59	59	59	59	59	59									
8.E																				
8.E.1	68																			
8.E.1.1	9	9	9	9	9	9	9	26	33	33	33	33	33	33	33	41	41	41	41	41
	41	41	69	69	69	69	69	69	69	71										
8.E.1.2	15	15	15	15	15	15	15	20	20	20	20	20	20	20	32	32	32	32	32	32
	3	5	5	6	6	6	6	6	6	6	6	6	6	6	6	6	6			

Table 8.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 8

	2	4	4	2	2	2	2	2	2	2	7	7	7	7	7	7	7			
8.E.1.3	4	22	24	24	24	24	24	24	24	46	46	46	46	46	52	52	52	52	52	52
	52	77	77	77	77	77	77	77												
8.E.1.4	6	6	6	6	6	6	6	17	17	17	17	17	17	17	70	70	70	70	70	70
	70	76	76	76	76	76	76	76												
8.E.1.5	19	19	19	19	19	19	19	27	27	27	27	27	27	27	35	35	35	35	35	35
	43	43	54	54	54	54	54	55	55	55	68	73	73							
8.E.2																				
8.E.2.1	21	21	21	21	21	21	21	53	53	53	53	53	53	53	56	56	56	56	56	56
	56																			
8.E.2.2	7	7	7	7	7	7	7	37	37	37	37	37	37	37	46	49	49	49	49	49
	49	49	75	75	75	75	75	75	75											
8.S																				
8.S.1	73																			
8.S.1.1	4	4	4	4	4	4	4	12	12	12	12	12	25	25	25	25	25	25	25	30
	30	30	30	30	30	30	44	44	44	44	44	44	44	58	58	58	58	58	58	
	58	66	66	66	66	66	66													
8.S.2	73																			
8.S.2.1	3	3	3	3	3	3	3	5	5	5	5	5	5	5	12	12	34	34	34	34
	34	34	34	35	36	36	36	36	36	36	36	57	57	57	57	57	57	57	66	
	68	68	68	68	68	73	73	73	73											

Table 8.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

South Dakota Science 2008 Grade 8

Low		Medium		High
1		3		7

8.N										
8.N.1										
8.N.1.1	1:7	10:4	26:6	28:7	29:7	50:7	61:7			
8.N.2										
8.N.2.1	8:7	10:3	11:7	23:7	38:7	51:7	60:7	71:6		
8.P										
8.P.1										
8.P.1.1	18:7	22:6	31:7	47:7	74:7					
8.P.1.2	16:7	22:1	42:7	45:7	72:7					
8.P.1.3	2:7	43:5	46:1	48:7	55:4	59:7				
8.E										
8.E.1	68:1									
8.E.1.1	9:7	26:1	33:7	41:7	69:7	71:1				
8.E.1.2	15:7	20:7	32:7	54:2	62:7	67:7				
8.E.1.3	4:1	22:1	24:7	46:5	52:7	77:7				
8.E.1.4	6:7	17:7	70:7	76:7						
8.E.1.5	19:7	27:7	35:6	43:2	54:5	55:3	68:1	73:2		
8.E.2										
8.E.2.1	21:7	53:7	56:7							
8.E.2.2	7:7	37:7	46:1	49:7	75:7					
8.S										
8.S.1	73:1									
8.S.1.1	4:7	12:5	25:7	30:7	44:7	58:7	66:6			
8.S.2	73:1									
8.S.2.1	3:7	5:7	12:2	34:7	35:1	36:7	57:7	66:1	68:5	73:4

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 8

Low		Medium		High
1		3		7

1 3522117	8.N.1.1:7		
2 3505484	8.P.1.3:7		
3 3522194	8.S.2.1:7		
4 3504293	8.E.1.3:1	8.S.1.1:7	
5 3504297	8.S.2.1:7		
6 3505635	8.E.1.4:7		
7 3505504	8.E.2.2:7		
8 3522201	8.N.2.1:7		
9 3505402	8.E.1.1:7		
10 3504288	8.N.1.1:4	8.N.2.1:3	
11 3522244	8.N.2.1:7		
12 3522192	8.S.1.1:5	8.S.2.1:2	
15 3505630	8.E.1.2:7		
16 3522168	8.P.1.2:7		
17 3505456	8.E.1.4:7		
18 3505437	8.P.1.1:7		
19 3526361	8.E.1.5:7		
20 3505407	8.E.1.2:7		
21 3504282	8.E.2.1:7		
22 3522247	8.P.1.1:6	8.P.1.2:1	8.E.1.3:1
23 3504291	8.N.2.1:7		
24 3505451	8.E.1.3:7		
25 3504286	8.S.1.1:7		
26 3505471	8.N.1.1:6	8.E.1.1:1	
27 3505458	8.E.1.5:7		
28 3505432	8.N.1.1:7		
29 3505409	8.N.1.1:7		
30 3522276	8.S.1.1:7		
31 3504280	8.P.1.1:7		
32 3505406	8.E.1.2:7		
33 3505447	8.E.1.1:7		
34 3522235	8.S.2.1:7		
35 3505422	8.E.1.5:6	8.S.2.1:1	
36 3505501	8.S.2.1:7		
37 3504284	8.E.2.2:7		
38 3505435	8.N.2.1:7		
41 3505487	8.E.1.1:7		
42 3505439	8.P.1.2:7		

Table 8.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 8

43 3522129	8.P.1.3:5	8.E.1.5:2		
44 3522232	8.S.1.1:7			
45 3505441	8.P.1.2:7			
46 3505492	8.P.1.3:1	8.E.1.3:5	8.E.2.2:1	
47 3504281	8.P.1.1:7			
48 3505485	8.P.1.3:7			
49 3505426	8.E.2.2:7			
50 3522242	8.N.1.1:7			
51 3505411	8.N.2.1:7			
52 3505493	8.E.1.3:7			
53 3526355	8.E.2.1:7			
54 3505639	8.E.1.2:2	8.E.1.5:5		
55 3505624	8.P.1.3:4	8.E.1.5:3		
56 3504283	8.E.2.1:7			
57 3522233	8.S.2.1:7			
58 3522132	8.S.1.1:7			
59 3505399	8.P.1.3:7			
60 3522246	8.N.2.1:7			
61 3505433	8.N.1.1:7			
62 3505405	8.E.1.2:7			
66 3522134	8.S.1.1:6	8.S.2.1:1		
67 3505491	8.E.1.2:7			
68 3522234	8.E.1:1	8.E.1.5:1	8.S.2.1:5	
69 3505403	8.E.1.1:7			
70 3505636	8.E.1.4:7			
71 3504290	8.N.2.1:6	8.E.1.1:1		
72 3505480	8.P.1.2:7			
73 3505479	8.E.1.5:2	8.S.1:1	8.S.2:1	8.S.2.1:4
74 3522204	8.P.1.1:7			
75 3505505	8.E.2.2:7			
76 3505418	8.E.1.4:7			
77 3505415	8.E.1.3:7			

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 8

Low DOK		Matched DOK		High DOK
1		3		7

8.N [3]:								
8.N.1 [2]:								
8.N.1.1 [2]:	1:7[1.43]	10:4 [1.75]	26:6 [1]	28:7 [1.14]	29:7 [1.29]	50:7 [1.71]	61:7 [1]	
8.N.2 [3]:								
8.N.2.1 [3]:	8:7[2]	10:3 [1.67]	11:7 [2.29]	23:7 [1.14]	38:7 [1.43]	51:7 [1.57]	60:7 [1.71]	71:6 [1.33]
8.P [2]:								
8.P.1 [2]:								
8.P.1.1 [2]:	18:7 [1]	22:6 [1.5]	31:7 [1]	47:7 [1.14]	74:7 [1]			
8.P.1.2 [2]:	16:7 [1.57]	22:1 [1]	42:7 [1.43]	45:7 [1.29]	72:7 [1]			
8.P.1.3 [2]:	2:7[1]	43:5 [1.4]	46:1 [1]	48:7 [1.57]	55:4 [1]	59:7 [1.57]		
8.E [2]:								
8.E.1 [2]:	68:1 [2]							
8.E.1.1 [2]:	9:7[1.14]	26:1 [1]	33:7 [1.86]	41:7 [1.86]	69:7 [1]	71:1 [1]		
8.E.1.2	15:7 [1.2	20:7 [1.5	32:7 [1.2	54:2 [1.5]	62:7 [1.7	67:7 [1.2		

Table 8.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 8

[1]:	9]	7]	9]		1]	9]				
8.E.1.3 [2]:	4:1[2]	22:1 [2]	24:7 [1.71]	46:5 [1]	52:7 [1.71]	77:7 [1.29]				
8.E.1.4 [2]:	6:7[1.29]	17:7 [1.43]	70:7 [1.71]	76:7 [2]						
8.E.1.5 [2]:	19:7 [1.14]	27:7 [1.14]	35:6 [1.67]	43:2 [2]	54:5 [1.2]	55:3 [1]	68:1 [2]	73:2 [2]		
8.E.2 [2]:										
8.E.2.1 [1]:	21:7 [1.29]	53:7 [1.71]	56:7 [1]							
8.E.2.2 [2]:	7:7[1.29]	37:7 [1.43]	46:1 [1]	49:7 [1.43]	75:7 [1.14]					
8.S [3]:										
8.S.1 [2]:	73:1 [2]									
8.S.1.1 [2]:	4:7[1.57]	12:5 [1.2]	25:7 [1.43]	30:7 [1.29]	44:7 [1.43]	58:7 [1.57]	66:6 [1.5]			
8.S.2 [3]:	73:1 [2]									
8.S.2.1 [3]:	3:7[2]	5:7[1.57]	12:2 [1.5]	34:7 [1.86]	35:1 [1]	36:7 [2]	57:7 [1.86]	66:1 [2]	68:5 [1.6]	73:4 [1.75]

Table 11.1
Categorical Concurrence Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 11
Number of Assessment Items - 84

Standards			Level by Objective			Hits		Cat. Concurr.
Title	Goals #	Objs #	Level	# of objs by Level	% w/in std by Level	Mean	S.D.	
9-12.N - NATURE OF SCIENCE	2	4.29	1 3	1 3	25 75	12.57	0.90	YES
9-12.P - PHYSICAL SCIENCE	3	11.86	2	11	100	23	1.69	YES
9-12.L - LIFE SCIENCE	3	6.14	1 2 3	1 4 1	16 66 16	22.43	0.90	YES
9-12.E - EARTH/SPACE SCIENCE	2	4	2	4	100	11	2.33	YES
9-12.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	5.14	2 3	2 3	40 60	15	0.76	YES
Total	12	31.43	1 2 3	2 21 7	6 70 23	84	0	

Table 11.2a
Alternate Depth-of-Knowledge Consistency Between Standards and Assessment as Rated by Seven Reviewers (Does Not Assume Each Objective Should Have Equal Representation)
South Dakota Science 2008 Grade 11
Number of Assessment Items - 84

Standards			Hits		Level of Item w.r.t. Standard						DOK Consistency
					% Under		% At		% Above		
Title	Goals #	Objs #	M	S.D.	M	S.D.	M	S.D.	M	S.D.	
9-12.N - NATURE OF SCIENCE	2	4.29	12.57	0.90	79	250	16	35	5	13	NO
9-12.P - PHYSICAL SCIENCE	3	11.86	23	1.69	51	108	49	44	0	0	WEAK
9-12.L - LIFE SCIENCE	3	6.14	22.43	0.90	64	357	30	37	6	19	NO
9-12.E - EARTH/SPACE SCIENCE	2	4	11	2.33	59	175	41	39	0	0	WEAK
9-12.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	5.14	15	0.76	59	212	41	39	0	0	WEAK
Total	12	31.43	84	0	59	43	39	41	2	10	

Table 11.3
Range-of-Knowledge Correspondence and Balance of Representation Between Standards and Assessment as Rated by Seven Reviewers
South Dakota Science 2008 Grade 11
Number of Assessment Items - 84

Standards			Hits		Range of Objectives				Rng. of Know.	Balance Index				Bal. of Represent.
					# Objs Hit		% of Total			% Hits in Std/Ttl Hits		Index		
Title	Goals #	Objs #	Mean	S.D.	Mean	S.D.	Mean	S.D.		Mean	S.D.	Mean	S.D.	
9-12.N - NATURE OF SCIENCE	2	4.29	12.57	0.90	4.29	0.45	100	0	YES	15	1	0.79	0.08	YES
9-12.P - PHYSICAL SCIENCE	3	11.86	23	1.69	11.43	0.73	96	4	YES	27	2	0.81	0.04	YES
9-12.L - LIFE SCIENCE	3	6.14	22.43	0.90	5.14	0.35	84	1	YES	27	1	0.82	0.04	YES
9-12.E - EARTH/SPACE SCIENCE	2	4	11	2.33	4	0	100	0	YES	13	3	0.81	0.04	YES
9-12.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	2	5.14	15	0.76	4.29	0.88	83	13	YES	18	1	0.76	0.07	YES
Total	12	31.43	84	0	5.83	2.88	93	10		20	6	0.80	0.06	

Table 11.4
Summary of Attainment of Acceptable Alignment Level on Four Content Focus Criteria as Rated by Seven Reviewers
South Dakota Science 2008 Grade 11
Number of Assessment Items - 84

Standards	Alignment Criteria			
	Categorical Concurrence	Depth-of-Knowledge Consistency	Range of Knowledge	Balance of Representation
9-12.N - NATURE OF SCIENCE	YES	NO	YES	YES
9-12.P - PHYSICAL SCIENCE	YES	WEAK	YES	YES
9-12.L - LIFE SCIENCE	YES	NO	YES	YES
9-12.E - EARTH/SPACE SCIENCE	YES	WEAK	YES	YES
9-12.S - SCIENCE, TECHNOLOGY, ENVIRONMENT, AND SOCIETY	YES	WEAK	YES	YES

Table 11.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 11

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
1	1	1	1	1	1	1	1
2	2	2	2	2	2	2	2
3	2	2	2	2	2	2	2
4	1	2	2	1	1	1	2
5	1	2	2	2	2	1	1
6	2	2	1	2	2	1	1
7	1	2	1	2	2	2	1
8	2	2	2	2	2	2	2
12	2	2	2	2	2	2	1
13	1	1	2	2	2	1	1
14	1	1	1	1	1	1	1
15	1	1	1	1	1	1	1
16	1	1	2	1	1	2	1
17	2	1	2	2	1	2	2
18	2	2	2	2	2	1	2
19	1	2	2	2	2	2	1
20	1	1	1	1	1	2	1
21	2	2	2	2	1	2	2
22	1	1	2	1	2	2	1
23	2	1	2	1	2	2	2
24	2	2	2	2	1	2	1
25	1	2	2	2	1	2	2
26	1	1	1	1	1	2	2
27	1	2	2	1	1	2	2
28	1	1	1	1	1	1	2
29	1	2	2	2	2	2	1
30	1	2	2	2	2	1	1
31	1	2	2	2	1	1	1
32	1	2	2	2	1	2	1
33	1	2	2	2	2	1	1
34	1	1	1	1	1	1	1
35	1	1	2	1	1	1	1
36	2	2	2	2	2	2	1
37	2	1	2	1	1	2	1
38	2	2	2	1	1	2	2
39	1	2	2	2	2	2	2
40	1	1	1	1	1	1	1
41	2	2	1	2	1	2	2
42	2	2	2	2	2	2	2
43	1	1	1	1	1	1	1
44	1	1	1	1	1	1	1
45	2	2	2	1	1	2	2
46	1	1	1	2	1	2	1
47	2	2	2	1	1	1	2

Table 11.6
Depth-of-Knowledge Levels by Item and Reviewers
Intraclass Correlation
South Dakota Science 2008 Grade 11

Item	Rater 1	Rater 2	Rater 3	Rater 4	Rater 5	Rater 6	Rater 7
51	1	1	1	1	1	1	2
52	2	2	2	2	2	2	1
53	1	1	1	1	1	1	1
54	2	1	2	1	2	2	2
55	2	2	2	2	2	2	2
56	1	1	1	1	1	1	1
57	2	2	2	2	2	2	2
58	2	2	2	2	1	2	2
59	2	2	2	2	2	2	2
60	2	1	2	2	1	1	1
61	2	2	2	1	2	2	2
62	1	1	1	1	1	2	1
63	1	1	1	1	2	1	2
64	2	1	2	1	1	2	2
65	1	2	2	1	1	2	2
66	2	2	2	2	2	2	2
67	1	1	1	1	2	1	1
68	1	2	2	1	2	2	1
69	2	2	2	2	2	2	2
70	1	1	1	1	1	1	1
71	1	2	2	1	1	2	1
72	1	1	1	1	1	2	1
73	2	2	2	2	2	2	1
74	2	2	2	2	2	2	2
75	1	1	2	2	1	2	1
76	1	2	2	1	2	2	2
77	2	2	2	1	1	2	2
78	1	1	1	1	1	1	1
82	2	2	2	2	2	1	1
83	1	1	2	1	2	2	1
84	1	1	2	1	1	2	1
85	1	1	1	1	1	1	1
86	1	2	2	1	1	2	1
87	2	2	2	2	1	2	2
88	1	1	1	2	1	2	1
89	1	1	2	2	1	2	1
90	1	1	1	2	1	1	1
91	1	2	2	1	1	1	1
92	1	2	2	1	1	2	1
93	1	1	1	1	1	1	1

Intraclass Correlation: 0.7991
Pairwise Comparison: 0.6689

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
1	1	9-12.N.2.1	1	9-12.N.2.2	1	9-12.N.2.2	1	9-12.N.2.2	1	9-12.N.2.2	1	9-12.N.2.2	1	9-12.N.2.2
2	2	9-12.N.1.2	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.1.2	2	9-12.N.2.1
3	2	9-12.P.2.2	2	9-12.P.2.2	2	9-12.P.2.2	2	9-12.P.2.2	2	9-12.N.1.2	2	9-12.P.2.2	2	9-12.P.2.2
4	1	9-12.N.2.2	2	9-12.P.2.2	2	9-12.N.2.2	1	9-12.S.1.2	1	9-12.N.2.2	1	9-12.N.2.2	2	9-12.N.2.2
5	1	9-12.L.1.3	2	9-12.L.1.3	2	9-12.L.1.3	2	9-12.L.1.3	2	9-12.L.1.3	1	9-12.L.1.3	1	9-12.L.1.3
6	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1	1	9-12.L.3.1
7	1	9-12.S.2.3	2	9-12.S.2.3	1	9-12.S.2.3	2	9-12.S.1.2	2	9-12.S.2.3	2	9-12.S.2.3	1	9-12.S.1.2
8	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.L.3.1	2	9-12.N.2.1	2	9-12.N.2.1
12	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1
13	1	9-12.P.3.3	1	9-12.P.3.3	2	9-12.P.3.3	2	9-12.P.3.3	2	9-12.P.3.3	1	9-12.P.3.3	1	9-12.P.3.3
14	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1	1	9-12.N.1.2	1	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1
15	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2
16	1	9-12.P.1.1	1	9-12.P.1.1	2	9-12.P.1.1	1	9-12.P.1.1	1	9-12.P.1.1	2	9-12.P.1.1	1	9-12.P.1.1
17	2	9-12.P.2.3	1	9-12.P.2.3	2	9-12.P.2.3	2	9-12.P.2.3	1	9-12.P.2.3	2	9-12.P.2.3	2	9-12.P.2.3
18	2	9-12.P.2.2	2	9-12.P.2.1	2	9-12.P.2.2	2	9-12.P.2.2	2	9-12.P.2.2	1	9-12.P.2.2	2	9-12.P.2.2
19	1	9-12.L.2.2	2	9-12.L.2.2	2	9-12.L.2.2	2	9-12.L.2.2	2	9-12.L.2.2	2	9-12.L.2.2	1	9-12.L.2.2
20	1	9-12.E.1.1	1	9-12.E.1.1	1	9-12.E.1.1	1	9-12.E.1.1	1	9-12.E.1.1	2	9-12.E.1.1	1	9-12.E.1.1
21	2	9-12.E.2.1	2	9-12.E.2.1	2	9-12.E.2.1	2	9-12.P.2.2	1	9-12.E.2.1	2	9-12.E.2.1	2	9-12.E.2.1
22	1	9-12.L.1.3	1	9-12.S.1.2	2	9-12.S.1	1	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.L.3.1
23	2	9-12.L.2.1	1	9-12.L.2.1	2	9-12.L.2.1	1	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1
24	2	9-12.P.1.4	2	9-12.P.1.2	2	9-12.P.1.4	2	9-12.P.1.4	1	9-12.P.1.2	2	9-12.P.1.4	1	9-12.P.1.4
25	1	9-12.P.1.3	2	9-12.P.1.5	2	9-12.P.1.3	2	9-12.P.1.3	1	9-12.P.1.5	2	9-12.P.1.3	2	9-12.P.1.3
26	1	9-12.L.1.3	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.3	1	9-12.L.1.3	2	9-12.L.1.3	2	9-12.L.1.3
27	1	9-12.E.1.1	2	9-12.E.1.1	2	9-12.E.1.1	1	9-12.E.1.1	1	9-12.E.1.1	2	9-12.E.1.1	2	9-12.E.1.1
28	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	2	9-12.L.1.1
29	1	9-12.S.2.1	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.2
30	1	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.N.1.1	2	9-12.S.2.1	1	9-12.S.1.2	1	9-12.S.1.2
31	1	9-12.E.1.2	2	9-12.E.1.2	2	9-12.E.1.2	2	9-12.E.1.2	1	9-12.E.1.2	1	9-12.E.1.2	1	9-12.E.1.2
32	1	9-12.P.2.2	2	9-12.P.2.2	2	9-12.P.2.2	2	9-12.P.2.2	1	9-12.P.2.2	2	9-12.P.2.2	1	9-12.P.2.3
33	1	9-12.S.2.1	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.E.1.3	1	9-12.S.2.1	1	9-12.S.1.2
34	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.3	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1
35	1	9-12.E.1.3	1	9-12.E.1.3	2	9-12.E.1.3	1	9-12.E.1.3	1	9-12.S.1.2	1	9-12.E.1.3	1	9-12.E.1.3
36	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1
37	2	9-12.L.3.1	1	9-12.N.1.1	2	9-12.N.1.1	1	9-12.N.1.1	1	9-12.N.1.1	2	9-12.N.1.2	1	9-12.S.1.2
38	2	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1
39	1	9-12.S.1.2	2	9-12.S.1.1	2	9-12.S.1.1	2	9-12.S.1.2	2	9-12.S.1.1	2	9-12.N.1.1	2	9-12.S.1.2
40	1	9-12.L.1.1	1	9-12.E.1.1	1	9-12.E.1.1	1	9-12.L.1.1	1	9-12.E.1.1	1	9-12.L.1.1	1	9-12.E.1.1
41	2	9-12.S.2.3	2	9-12.S.1.2	1	9-12.S.1.2	2	9-12.S.2.3	1	9-12.S.2.3	2	9-12.S.2.3	2	9-12.S.2.1
42	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.E.1.2	2	9-12.S.2.1	2	9-12.S.1.2	2	9-12.S.1.2

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
43	1	9-12.P.2.2	1	9-12.P.2.2	1	9-12.P.2.2	1	9-12.P.2	1	9-12.P.2.2	1	9-12.P.2.2	1	9-12.P.2.2
44	1	9-12.L.2.2	1	9-12.L.3.1	1	9-12.L.2.2	1	9-12.L.3.1	1	9-12.L.2.2	1	9-12.L.2.2	1	9-12.P.3.1
45	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.P.2.2	2	9-12.N.2.1
46	1	9-12.N.2.2	1	9-12.N.2.2	1	9-12.N.2.2	2	9-12.N.2.2	1	9-12.N.2.2	2	9-12.N.2.2	1	9-12.N.2.2
47	2	9-12.P.3.1	2	9-12.P.3.1	2	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	2	9-12.P.3.1
51	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.3	1	9-12.L.1.1	1	9-12.L.1.1	2	9-12.L.1.3
52	2	9-12.S.2.3	2	9-12.S.2.3	2	9-12.S.2.3	2	9-12.S.2.3	2	9-12.S.2.3	2	9-12.S.2.3	1	9-12.S.2.1
53	1	9-12.P.1.5	1	9-12.P.1.5	1	9-12.P.1.5	1	9-12.P.1.5	1	9-12.P.1.5	1	9-12.P.1.5	1	9-12.P.2
54	2	9-12.L.2.1	1	9-12.L.2.2	2	9-12.L.2.1	1	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1
55	2	9-12.P.1.4	2	9-12.P.1.4	2	9-12.P.1.4	2	9-12.P.1.4	2	9-12.P.1.4	2	9-12.P.1.4	2	9-12.P.1.4
56	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1	1	9-12.P.3.1
57	2	9-12.P.2	2	9-12.P.2	2	9-12.P.2	2	9-12.P.2.3	2	9-12.E.2.1	2	9-12.P.2	2	9-12.P.2.2
58	2	9-12.L.2.1	2	9-12.L.2.2	2	9-12.L.2.2	2	9-12.L.2.2	1	9-12.L.2.1	2	9-12.L.2.2	2	9-12.L.2.2
59	2	9-12.E.1.2	2	9-12.E.1.2	2	9-12.E.1.2	2	9-12.E.1.2	2	9-12.E.1.2	2	9-12.S.1.2	2	9-12.E.1.2
60	2	9-12.N.1.2	1	9-12.N.1.2	2	9-12.N.1.2	2	9-12.N.1.2	1	9-12.S.1.2	1	9-12.N.1.2	1	9-12.N.1.2
61	2	9-12.S.2.1	2	9-12.N.2.1	2	9-12.S.2.1	1	9-12.N.2.1	2	9-12.S.2.2	2	9-12.S.2.1	2	9-12.N.2.1
62	1	9-12.E.1.1	1	9-12.L.1.3	1	9-12.L.1.3	1	9-12.L.1.3	1	9-12.E.1.1	2	9-12.L.1.1	1	9-12.L.1.3
63	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	2	9-12.E.2.1	1	9-12.P.2.2	2	9-12.E.2.1
64	2	9-12.L.1	1	9-12.L.1.3	2	9-12.L.1.3	1	9-12.L.1.3	1	9-12.L.2.2	2	9-12.L.1.3	2	9-12.L.1.3
65	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.P.3.3	1	9-12.L.1.3	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1
66	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1
67	1	9-12.L.3.1	1	9-12.L.1.3	1	9-12.L.2.2	1	9-12.L.2.2	2	9-12.L.2.2	1	9-12.L.2.2	1	9-12.L.2.2
68	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1
69	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.S.1.1
70	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2
71	1	9-12.S.2.1	2	9-12.S.2.3	2	9-12.S.2.2	1	9-12.S.1.2	1	9-12.S.1.2	2	9-12.N.1.1	1	9-12.S.2.1
72	1	9-12.S.2.1	1	9-12.S.2.1	1	9-12.S.2.1	1	9-12.S.2.1	1	9-12.S.1.2	2	9-12.S.2.1	1	9-12.S.2.1
73	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.2.1	2	9-12.S.1.2	2	9-12.S.1.2	2	9-12.S.1.2	1	9-12.S.1.2
74	2	9-12.S.1.2	2	9-12.S.2.1	2	9-12.S.1.1	2	9-12.S.1.1	2	9-12.N.1.2	2	9-12.S.1.1	2	9-12.S.1.2
75	1	9-12.P.3.3	1	9-12.P.3.3	2	9-12.P.3.3	2	9-12.P.3.3	1	9-12.P.3.3	2	9-12.P.3.3	1	9-12.P.3.3
76	1	9-12.N.1.2	2	9-12.N.1.2	2	9-12.N.1.2	1	9-12.N.1.2	2	9-12.N.1.2	2	9-12.N.1.2	2	9-12.N.1
77	2	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1	1	9-12.L.2.1	1	9-12.L.2.1	2	9-12.L.2.1	2	9-12.L.2.1
78	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	1	9-12.P.2.2	1	9-12.P.2.2
82	2	9-12.P.3.2	2	9-12.P.2.1	2	9-12.P.2.1	2	9-12.P.3.2	2	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.2.1
83	1	9-12.N.2.1	1	9-12.N.2.1	2	9-12.N.2.1	1	9-12.N.2.1	2	9-12.N.2.1	2	9-12.N.2.1	1	9-12.N.2.1
84	1	9-12.E.2.1	1	9-12.E.2.1	2	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	2	9-12.P.2.2	1	9-12.P.2.2
85	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2	1	9-12.P.1.2
86	1	9-12.S.1.1	2	9-12.S.1.1	2	9-12.S.1.1	1	9-12.S.1.1	1	9-12.N.1.2	2	9-12.S.1.1	1	9-12.N.1.2
87	2	9-12.P.2.3	2	9-12.P.2.3	2	9-12.P.2.3	2	9-12.P.2.3	1	9-12.P.2.3	2	9-12.P.2.3	2	9-12.P.2.3

Table 11.8
DOK Levels and Objectives Coded by Each Reviewer
South Dakota Science 2008 Grade 11

Item	DOK0	PObj0	DOK1	PObj1	DOK2	PObj2	DOK3	PObj3	DOK4	PObj4	DOK5	PObj5	DOK6	PObj6
88	1	9-12.E.1.3	1	9-12.E.1.1	1	9-12.E.1.1	2	9-12.E.1.3	1	9-12.E.1.2	2	9-12.S.2.3	1	9-12.E.1.2
89	1	9-12.L.3.1	1	9-12.L.3.1	2	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1	2	9-12.L.3.1	1	9-12.L.3.1
90	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	2	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2	1	9-12.P.3.2
91	1	9-12.S.1.1	2	9-12.S.1.1	2	9-12.S.1.1	1	9-12.S.1.1	1	9-12.N.1.2	1	9-12.S.1.1	1	9-12.S.1.1
92	1	9-12.E.2.1	2	9-12.E.2.1	2	9-12.E.2.1	1	9-12.E.2.1	1	9-12.E.2.1	2	9-12.E.2.1	1	9-12.E.2.1
93	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1	1	9-12.L.1.1

Objective Pairwise Comparison: 0.7063
Standard Pairwise Comparison: 0.8776

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 11

Low		Medium		High
0		6.322581		7

1 3540439	9-12.N.2.1	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2
2 3540536	9-12.N.1.2	9-12.N.1.2	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
3 3505317	9-12.N.1.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2
4 3513686	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.P.2.2	9-12.S.1.2
5 3505301	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3
6 3505263	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
7 3523636	9-12.S.1.2	9-12.S.1.2	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3
8 3505520	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.L.3.1
12 3521834	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
13 3505328	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3
14 3540440	9-12.N.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.2
15 3505307	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2
16 3505306	9-12.P.1.1	9-12.P.1.1	9-12.P.1.1	9-12.P.1.1	9-12.P.1.1	9-12.P.1.1	9-12.P.1.1
17 3505324	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3
18 3513661	9-12.P.2.1	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2
19 3521943	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2
20 3521954	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1
21 3540438	9-12.P.2.2	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1
22 3505285	9-12.L.1.3	9-12.L.3.1	9-12.S.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
23 3505541	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1
24 3505310	9-12.P.1.2	9-12.P.1.2	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4
25 3521900	9-12.P.1.3	9-12.P.1.3	9-12.P.1.3	9-12.P.1.3	9-12.P.1.3	9-12.P.1.5	9-12.P.1.5
26 3505535	9-12.L.1.1	9-12.L.1.1	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3
27 3505511	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1
28 3521824	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1
29 3523605	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1
30 3540471	9-12.N.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1
31 3521842	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2
32 3523623	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.3
33 3505340	9-12.E.1.3	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1	9-12.S.2.1
34 3505530	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.3
35 3521955	9-12.E.1.3	9-12.E.1.3	9-12.E.1.3	9-12.E.1.3	9-12.E.1.3	9-12.E.1.3	9-12.S.1.2
36 3505265	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
37 3521888	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.1	9-12.N.1.2	9-12.L.3.1	9-12.S.1.2
38 3505266	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
39 3541541	9-12.N.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2
40 3521952	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1	9-12.E.1.1
41 3505287	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3
42 3521957	9-12.E.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1
43 3513660	9-12.P.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2	9-12.P.2.2
44 3521945	9-12.P.3.1	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.3.1	9-12.L.3.1

Table 11.9
Objectives Coded to Each Item by Reviewers
South Dakota Science 2008 Grade 11

45 3540545	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.P.2.2
46 3505297	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2	9-12.N.2.2
47 3521903	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1
51 3521825	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.3	9-12.L.1.3
52 3521865	9-12.S.2.1	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3	9-12.S.2.3
53 3505311	9-12.P.1.5	9-12.P.1.5	9-12.P.1.5	9-12.P.1.5	9-12.P.1.5	9-12.P.1.5	9-12.P.2
54 3505538	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.2
55 3505526	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4	9-12.P.1.4
56 3513664	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1	9-12.P.3.1
57 3521883	9-12.P.2	9-12.P.2	9-12.P.2	9-12.P.2	9-12.P.2.2	9-12.P.2.3	9-12.E.2.1
58 3505543	9-12.L.2.1	9-12.L.2.1	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2
59 3505274	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.E.1.2	9-12.S.1.2
60 3513689	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.S.1.2
61 3513680	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.2
62 3540524	9-12.L.1.1	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.E.1.1	9-12.E.1.1
63 3540409	9-12.P.2.2	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1
64 3521935	9-12.L.1	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.1.3	9-12.L.2.2
65 3521837	9-12.P.3.3	9-12.L.1.3	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
66 3523629	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
67 3521948	9-12.L.1.3	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.2.2	9-12.L.3.1
68 3505262	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
69 3523618	9-12.P.2.1	9-12.P.2.1	9-12.P.2.1	9-12.P.2.1	9-12.P.2.1	9-12.P.2.1	9-12.S.1.1
70 3521875	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2
71 3523606	9-12.N.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1	9-12.S.2.1	9-12.S.2.2	9-12.S.2.3
72 3521863	9-12.S.1.2	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1	9-12.S.2.1
73 3505516	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1
74 3513674	9-12.N.1.2	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.2	9-12.S.1.2	9-12.S.2.1
75 3513669	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3	9-12.P.3.3
76 3505293	9-12.N.1	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2	9-12.N.1.2
77 3521938	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1	9-12.L.2.1
78 3505269	9-12.P.2.2	9-12.P.2.2	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1
82 3513668	9-12.P.2.1	9-12.P.2.1	9-12.P.2.1	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2
83 3521920	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1	9-12.N.2.1
84 3540408	9-12.P.2.2	9-12.P.2.2	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1
85 3505524	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2	9-12.P.1.2
86 3523627	9-12.N.1.2	9-12.N.1.2	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1
87 3513662	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3	9-12.P.2.3
88 3505512	9-12.E.1.1	9-12.E.1.1	9-12.E.1.2	9-12.E.1.2	9-12.E.1.3	9-12.E.1.3	9-12.S.2.3
89 3521946	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1	9-12.L.3.1
90 3521874	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2	9-12.P.3.2
91 3540370	9-12.N.1.2	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1	9-12.S.1.1
92 3521853	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1	9-12.E.2.1
93 3505298	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1	9-12.L.1.1

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 11

Low		Medium		High
0		12.25		53

9-12.N																				
9-12.N.1	14	76																		
9-12.N.1.1	14	14	14	14	14	30	37	37	37	37	39	71								
9-12.N.1.2	2	2	3	14	37	60	60	60	60	60	60	74	76	76	76	76	76	76	86	86
	91																			
9-12.N.2																				
9-12.N.2.1	1	2	2	2	2	2	8	8	8	8	8	8	45	45	45	45	45	45	61	61
	61	66	66	66	66	66	66	66	83	83	83	83	83	83	83					
9-12.N.2.2	1	1	1	1	1	1	4	4	4	4	4	46	46	46	46	46	46	46		
9-12.P																				
9-12.P.1																				
9-12.P.1.1	16	16	16	16	16	16	16													
9-12.P.1.2	15	15	15	15	15	15	15	24	24	85	85	85	85	85	85	85				
9-12.P.1.3	25	25	25	25	25															
9-12.P.1.4	24	24	24	24	24	55	55	55	55	55	55	55								
9-12.P.1.5	25	25	53	53	53	53	53	53												
9-	4	5	5	5	5	5														

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 11

12.P.2	3	3	7	7	7	7														
9-12.P.2.1	18	69	69	69	69	69	69	82	82	82										
9-12.P.2.2	3	3	3	3	3	3	4	18	18	18	18	18	18	21	32	32	32	32	32	32
	43	43	43	43	43	43	45	57	63	78	78	84	84							
9-12.P.2.3	17	17	17	17	17	17	17	32	57	87	87	87	87	87	87	87				
9-12.P.3																				
9-12.P.3.1	44	47	47	47	47	47	47	47	56	56	56	56	56	56	56					
9-12.P.3.2	70	70	70	70	70	70	70	82	82	82	82	90	90	90	90	90	90	90		
9-12.P.3.3	13	13	13	13	13	13	13	65	75	75	75	75	75	75	75					
9-12.L																				
9-12.L.1	64																			
9-12.L.1.1	26	26	28	28	28	28	28	28	28	34	34	34	34	34	34	40	40	40	51	51
	51	51	51	62	93	93	93	93	93	93	93									
9-12.L.1.2																				
9-12.L.1.3	5	5	5	5	5	5	5	22	26	26	26	26	26	34	51	51	62	62	62	62
	64	64	64	64	64	65	67													
9-12.L.2																				
9-12.L.2.1	23	23	23	23	23	23	23	54	54	54	54	54	54	58	58	77	77	77	77	77

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 11

	77	77																		
9-12.L.2.2	19	19	19	19	19	19	19	44	44	44	44	54	58	58	58	58	58	64	67	67
	67	67	67																	
9-12.L.3																				
9-12.L.3.1	6	6	6	6	6	6	6	8	12	12	12	12	12	12	12	22	36	36	36	36
	36	36	36	37	38	38	38	38	38	38	38	44	44	65	65	65	65	65	67	
	68	68	68	68	68	68	68	89	89	89	89	89	89	89						
9-12.E																				
9-12.E.1																				
9-12.E.1.1	20	20	20	20	20	20	20	27	27	27	27	27	27	27	40	40	40	40	62	62
	88	88																		
9-12.E.1.2	31	31	31	31	31	31	31	42	59	59	59	59	59	59	88	88				
9-12.E.1.3	33	35	35	35	35	35	35	88	88											
9-12.E.2																				
9-12.E.2.1	21	21	21	21	21	21	57	63	63	63	63	63	63	78	78	78	78	78	84	84
	84	84	84	92	92	92	92	92	92	92										
9-12.S																				
9-12.S.1	22																			
9-12.S.1.1	39	39	39	69	74	74	74	86	86	86	86	86	91	91	91	91	91	91		
9-	4	7	7	2	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3

Table 11.10
Items Coded by Reviewers to Each Objective
South Dakota Science 2008 Grade 11

12.S.1.2				2	2	2	2	9	9	9	9	9	9	0	0	0	0	0	3	3
	33	33	35	37	39	39	39	41	41	42	42	42	42	42	59	60	71	71	72	
	73	73	73	73	73	73	74	74												
9-12.S.2																				
9-12.S.2.1	29	30	33	33	41	42	52	61	61	61	71	71	72	72	72	72	72	72	73	74
9-12.S.2.2	61	71																		
9-12.S.2.3	7	7	7	7	7	41	41	41	41	52	52	52	52	52	52	71	88			

Table 11.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)

South Dakota Science 2008 Grade 11

Low		Medium		High
1		3		7

9-12.N											
9-12.N.1	14:1	76:1									
9-12.N.1.1	14:5	30:1	37:4	39:1	71:1						
9-12.N.1.2	2:2	3:1	14:1	37:1	60:6	74:1	76:6	86:2	91:1		
9-12.N.2											
9-12.N.2.1	1:1	2:5	8:6	45:6	61:3	66:7	83:7				
9-12.N.2.2	1:6	4:5	46:7								
9-12.P											
9-12.P.1											
9-12.P.1.1	16:7										
9-12.P.1.2	15:7	24:2	85:7								
9-12.P.1.3	25:5										
9-12.P.1.4	24:5	55:7									
9-12.P.1.5	25:2	53:6									
9-12.P.2	43:1	53:1	57:4								
9-12.P.2.1	18:1	69:6	82:3								
9-12.P.2.2	3:6	4:1	18:6	21:1	32:6	43:6	45:1	57:1	63:1	78:2	84:2
9-12.P.2.3	17:7	32:1	57:1	87:7							
9-12.P.3											
9-12.P.3.1	44:1	47:7	56:7								
9-12.P.3.2	70:7	82:4	90:7								
9-12.P.3.3	13:7	65:1	75:7								
9-12.L											
9-12.L.1	64:1										
9-12.L.1.1	26:2	28:7	34:6	40:3	51:5	62:1	93:7				
9-12.L.1.2											
9-12.L.1.3	5:7	22:1	26:5	34:1	51:2	62:4	64:5	65:1	67:1		
9-12.L.2											
9-12.L.2.1	23:7	54:6	58:2	77:7							
9-12.L.2.2	19:7	44:4	54:1	58:5	64:1	67:5					

Table 11.11

Number of Reviewers Coding an Item by Objective (Item Number: Number of Reviewers)
South Dakota Science 2008 Grade 11

9-12.L.3													
9-12.L.3.1	6:7	8:1	12:7	22:1	36:7	37:1	38:7	44:2	65:5	67:1	68:7	89:7	
9-12.E													
9-12.E.1													
9-12.E.1.1	20:7	27:7	40:4	62:2	88:2								
9-12.E.1.2	31:7	42:1	59:6	88:2									
9-12.E.1.3	33:1	35:6	88:2										
9-12.E.2													
9-12.E.2.1	21:6	57:1	63:6	78:5	84:5	92:7							
9-12.S													
9-12.S.1	22:1												
9-12.S.1.1	39:3	69:1	74:3	86:5	91:6								
9-12.S.1.2	4:1	7:2	22:4	29:6	30:5	33:4	35:1	37:1	39:3	41:2	42:5	59:1	60:1
	71:2	72:1	73:6	74:2									
9-12.S.2													
9-12.S.2.1	29:1	30:1	33:2	41:1	42:1	52:1	61:3	71:2	72:6	73:1	74:1		
9-12.S.2.2	61:1	71:1											
9-12.S.2.3	7:5	41:4	52:6	71:1	88:1								

Table 11.12
Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 11

Low		Medium		High
1		3		7

1 3540439	9-12.N.2.1:1	9-12.N.2.2:6		
2 3540536	9-12.N.1.2:2	9-12.N.2.1:5		
3 3505317	9-12.N.1.2:1	9-12.P.2.2:6		
4 3513686	9-12.N.2.2:5	9-12.P.2.2:1	9-12.S.1.2:1	
5 3505301	9-12.L.1.3:7			
6 3505263	9-12.L.3.1:7			
7 3523636	9-12.S.1.2:2	9-12.S.2.3:5		
8 3505520	9-12.N.2.1:6	9-12.L.3.1:1		
12 3521834	9-12.L.3.1:7			
13 3505328	9-12.P.3.3:7			
14 3540440	9-12.N.1:1	9-12.N.1.1:5	9-12.N.1.2:1	
15 3505307	9-12.P.1.2:7			
16 3505306	9-12.P.1.1:7			
17 3505324	9-12.P.2.3:7			
18 3513661	9-12.P.2.1:1	9-12.P.2.2:6		
19 3521943	9-12.L.2.2:7			
20 3521954	9-12.E.1.1:7			
21 3540438	9-12.P.2.2:1	9-12.E.2.1:6		
22 3505285	9-12.L.1.3:1	9-12.L.3.1:1	9-12.S.1:1	9-12.S.1.2:4
23 3505541	9-12.L.2.1:7			
24 3505310	9-12.P.1.2:2	9-12.P.1.4:5		
25 3521900	9-12.P.1.3:5	9-12.P.1.5:2		
26 3505535	9-12.L.1.1:2	9-12.L.1.3:5		
27 3505511	9-12.E.1.1:7			
28 3521824	9-12.L.1.1:7			
29 3523605	9-12.S.1.2:6	9-12.S.2.1:1		
30 3540471	9-12.N.1.1:1	9-12.S.1.2:5	9-12.S.2.1:1	
31 3521842	9-12.E.1.2:7			
32 3523623	9-12.P.2.2:6	9-12.P.2.3:1		
33 3505340	9-12.E.1.3:1	9-12.S.1.2:4	9-12.S.2.1:2	
34 3505530	9-12.L.1.1:6	9-12.L.1.3:1		
35 3521955	9-12.E.1.3:6	9-12.S.1.2:1		
36 3505265	9-12.L.3.1:7			
37 3521888	9-12.N.1.1:4	9-12.N.1.2:1	9-12.L.3.1:1	9-12.S.1.2:1
38 3505266	9-12.L.3.1:7			
39 3541541	9-12.N.1.1:1	9-12.S.1.1:3	9-12.S.1.2:3	
40 3521952	9-12.L.1.1:3	9-12.E.1.1:4		
41 3505287	9-12.S.1.2:2	9-12.S.2.1:1	9-12.S.2.3:4	
42 3521957	9-12.E.1.2:1	9-12.S.1.2:5	9-12.S.2.1:1	
43 3513660	9-12.P.2:1	9-12.P.2.2:6		
44 3521945	9-12.P.3.1:1	9-12.L.2.2:4	9-12.L.3.1:2	

Table 11.12

Number of Reviewers Coding an Objective by Item (Objective: Number of Reviewers)
South Dakota Science 2008 Grade 11

45 3540545	9-12.N.2.1:6	9-12.P.2.2:1			
46 3505297	9-12.N.2.2:7				
47 3521903	9-12.P.3.1:7				
51 3521825	9-12.L.1.1:5	9-12.L.1.3:2			
52 3521865	9-12.S.2.1:1	9-12.S.2.3:6			
53 3505311	9-12.P.1.5:6	9-12.P.2:1			
54 3505538	9-12.L.2.1:6	9-12.L.2.2:1			
55 3505526	9-12.P.1.4:7				
56 3513664	9-12.P.3.1:7				
57 3521883	9-12.P.2:4	9-12.P.2.2:1	9-12.P.2.3:1	9-12.E.2.1:1	
58 3505543	9-12.L.2.1:2	9-12.L.2.2:5			
59 3505274	9-12.E.1.2:6	9-12.S.1.2:1			
60 3513689	9-12.N.1.2:6	9-12.S.1.2:1			
61 3513680	9-12.N.2.1:3	9-12.S.2.1:3	9-12.S.2.2:1		
62 3540524	9-12.L.1.1:1	9-12.L.1.3:4	9-12.E.1.1:2		
63 3540409	9-12.P.2.2:1	9-12.E.2.1:6			
64 3521935	9-12.L.1:1	9-12.L.1.3:5	9-12.L.2.2:1		
65 3521837	9-12.P.3.3:1	9-12.L.1.3:1	9-12.L.3.1:5		
66 3523629	9-12.N.2.1:7				
67 3521948	9-12.L.1.3:1	9-12.L.2.2:5	9-12.L.3.1:1		
68 3505262	9-12.L.3.1:7				
69 3523618	9-12.P.2.1:6	9-12.S.1.1:1			
70 3521875	9-12.P.3.2:7				
71 3523606	9-12.N.1.1:1	9-12.S.1.2:2	9-12.S.2.1:2	9-12.S.2.2:1	9-12.S.2.3:1
72 3521863	9-12.S.1.2:1	9-12.S.2.1:6			
73 3505516	9-12.S.1.2:6	9-12.S.2.1:1			
74 3513674	9-12.N.1.2:1	9-12.S.1.1:3	9-12.S.1.2:2	9-12.S.2.1:1	
75 3513669	9-12.P.3.3:7				
76 3505293	9-12.N.1:1	9-12.N.1.2:6			
77 3521938	9-12.L.2.1:7				
78 3505269	9-12.P.2.2:2	9-12.E.2.1:5			
82 3513668	9-12.P.2.1:3	9-12.P.3.2:4			
83 3521920	9-12.N.2.1:7				
84 3540408	9-12.P.2.2:2	9-12.E.2.1:5			
85 3505524	9-12.P.1.2:7				
86 3523627	9-12.N.1.2:2	9-12.S.1.1:5			
87 3513662	9-12.P.2.3:7				
88 3505512	9-12.E.1.1:2	9-12.E.1.2:2	9-12.E.1.3:2	9-12.S.2.3:1	
89 3521946	9-12.L.3.1:7				
90 3521874	9-12.P.3.2:7				
91 3540370	9-12.N.1.2:1	9-12.S.1.1:6			
92 3521853	9-12.E.2.1:7				
93 3505298	9-12.L.1.1:7				

Table 11.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 11

Low DOK		Matched DOK		High DOK
1		3		7

9-12.N [3]:									
9-12.N.1 [3]:	14:1 [1]	76:1 [2]							
9-12.N.1.1 [3]:	14:5 [1]	30:1 [2]	37:4 [1.25]	39:1 [2]	71:1 [2]				
9-12.N.1.2 [3]:	2:2[2]	3:1[2]	14:1 [1]	37:1 [2]	60:6 [1.5]	74:1 [2]	76:6 [1.67]	86:2 [1]	91:1 [1]
9-12.N.2 [3]:									
9-12.N.2.1 [3]:	1:1[1]	2:5[2]	8:6[2]	45:6 [1.67]	61:3 [1.67]	66:7 [2]	83:7 [1.43]		
9-12.N.2.2 [1]:	1:6[1]	4:5[1.4]	46:7 [1.29]						
9-12.P [2]:									
9-12.P.1 [2]:									
9-12.P.1.1 [2]:	16:7 [1.29]								

Table 11.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 11

9-12.P.1.2 [2]:	15:7 [1]	24:2 [1.5]	85:7 [1]								
9-12.P.1.3 [2]:	25:5 [1.8]										
9-12.P.1.4 [2]:	24:5 [1.8]	55:7 [2]									
9-12.P.1.5 [2]:	25:2 [1.5]	53:6 [1]									
9-12.P.2 [2]:	43:1 [1]	53:1 [1]	57:4 [2]								
9-12.P.2.1 [2]:	18:1 [2]	69:6 [2]	82:3 [1.67]								
9-12.P.2.2 [2]:	3:6[2]	4:1[2]	18:6 [1.83]	21:1 [2]	32:6 [1.67]	43:6 [1]	45:1 [2]	57:1 [2]	63:1 [1]	78:2 [1]	84:2 [1.5]
9-12.P.2.3 [2]:	17:7 [1.71]	32:1 [1]	57:1 [2]	87:7 [1.86]							
9-12.P.3 [2]:											
9-12.P.3.1 [2]:	44:1 [1]	47:7 [1.57]	56:7 [1]								
9-12.P.3.2	70:7 [1]	82:4 [1.75]	90:7 [1.14]								

Table 11.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 11

[2]:												
9-12.P.3.3 [2]:	13:7 [1.43]	65:1 [2]	75:7 [1.43]									
9-12.L [2]:												
9-12.L.1 [2]:	64:1 [2]											
9-12.L.1.1 [2]:	26:2 [1]	28:7 [1.14]	34:6 [1]	40:3 [1]	51:5 [1]	62:1 [2]	93:7 [1]					
9-12.L.1.2 [2]:												
9-12.L.1.3 [1]:	5:7[1.57]	22:1 [1]	26:5 [1.4]	34:1 [1]	51:2 [1.5]	62:4 [1]	64:5 [1.6]	65:1 [1]	67:1 [1]			
9-12.L.2 [2]:												
9-12.L.2.1 [2]:	23:7 [1.71]	54:6 [1.83]	58:2 [1.5]	77:7 [1.71]								
9-12.L.2.2 [2]:	19:7 [1.71]	44:4 [1]	54:1 [1]	58:5 [2]	64:1 [1]	67:5 [1.2]						
9-12.L.3 [3]:												
9-12.L.3.1	6:7[1.57]	8:1[2]	12:7 [1.86]	22:1 [1]	36:7 [1.86]	37:1 [2]	38:7 [1.71]	44:2 [1]	65:5 [1.6]	67:1 [1]	68:7 [1.57]	89:7 [1.43]

Table 11.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 11

[3]:													
9-12.E [2]:													
9-12.E.1 [2]:													
9-12.E.1.1 [2]:	20:7 [1.14]	27:7 [1.57]	40:4 [1]	62:2 [1]	88:2 [1]								
9-12.E.1.2 [2]:	31:7 [1.43]	42:1 [2]	59:6 [2]	88:2 [1]									
9-12.E.1.3 [2]:	33:1 [2]	35:6 [1.17]	88:2 [1.5]										
9-12.E.2 [2]:													
9-12.E.2.1 [2]:	21:6 [1.83]	57:1 [2]	63:6 [1.33]	78:5 [1]	84:5 [1.2]	92:7 [1.43]							
9-12.S [3]:													
9-12.S.1 [2]:	22:1 [2]												
9-12.S.1.1 [2]:	39:3 [2]	69:1 [2]	74:3 [2]	86:5 [1.6]	91:6 [1.33]								
9-12.S.1.2 [2]:	4:1[1]	7:2[1.5]	22:4 [1.5]	29:6 [1.83]	30:5 [1.4]	33:4 [1.75]	35:1 [1]	37:1 [1]	39:3 [1.67]	41:2 [1.5]	42:5 [2]	59:1 [2]	60:1 [1]

Table 11.13
Assessment Item DOK vs Consensus DOK (Item Number: Number of Reviewers [Average DOK])
South Dakota Science 2008 Grade 11

	71:2 [1]	72:1 [1]	73:6 [1.83]	74:2 [2]							
9-12.S.2 [3]:											
9-12.S.2.1 [3]:	29:1 [1]	30:1 [2]	33:2 [1]	41:1 [2]	42:1 [2]	52:1 [1]	61:3 [2]	71:2 [1]	72:6 [1.17]	73:1 [2]	74:1 [2]
9-12.S.2.2 [3]:	61:1 [2]	71:1 [2]									
9-12.S.2.3 [3]:	7:5[1.6]	41:4 [1.75]	52:6 [2]	71:1 [2]	88:1 [2]						

Appendix C

Reviewers Notes and Source of Challenge Comments

South Dakota
Grades 5, 8, and 11
Science
2008

Brief Explanation of Data in the Alignment Tables by Column

Tables *grade*.5

Comments made by reviewers on items identified as having a Source-of-Challenge issue by item number.

Tables *grade*.7

All notes made by reviewers on items by item number.

Table 5.5
Source-of-Challenge Issues by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
10	The logging project question could have multiple answers depending on the inhabitants.
11	The actual ratio of earth diameter to sun diameter is 1:109. The sizes of the correct response range in ratio from .5 diameter of the earth to four times the diameter of the earth. The correct illustration used on this item has a ratio of 1:4.
11	Representing size of sun compared to earth- this is way off in terms of scale. In addition, this is a checked content item at grade 5
17	Aligns to check marked item.
17	Volcanoes are specifically mentioned in the checked items for this content.
26	The answer to the question about the hermit crab and sea anemone is mutualism and cooperation (the correct answer provided by the MC options) is a word similar in definition but it is not the best choice.
26	Parasitism and mutation are specifically mentioned in the checked items for this content- if not mastered is it fair to use terminology?
30	A student who knows that the direction of the motion of an object on earth is influenced by gravity and the amount of force applied to the object would know that both "a" the amount of gravity, and "c" how hard the ball was kicked will affect if it goes over or back down the hill.
33	The answer to the question about why the impala is not bothered by the oxpecker is "the bird keeps the impala healthy". I'd prefer an answer choice like "the bird keeps the impala clean or insect free" as there is a missing link between "insects" in the description and "healthy" in the answer. Also, do impalas know they're healthy? In other words, is that really the reason the "impala is not bothered"?
33	In the oxpecker question, can we really say that the impala knows the bird is keeping it healthy and therefore is not bothered?
34	I question the description of catalytic converter. If it really traps some of the gas wouldn't students find it logical that it might use less fuel?
35	The picture seems backwards- could be interpreted by students that grass eats grasshoppers etc.
36	There is a lot of extra junk in the question that may mislead students. The description or the diagram included dividing the planets into inner and outer by the asteroid belt is enough. The extra information may mislead students to choose an incorrect answer.
37	Some will argue that language can be "inherited" from parents. If my parents speak jkhkh there is a good chance that the offspring will, too.
38	The two answer options about the "most" efficient sail about size & shape and about texture may be an issue to students. If the texture of a sail meant that it was very rough/with many holes then the sail would not work as well. In addition, there are many shapes of sails that work very efficiently and the larger the sail the heavier and yet more wind. Seems to be some bias to students who know sails and those who do not.

Table 5.5
Source-of-Challenge Issues by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
41	The word "contains" bothers me when discussing male reproductive cells as the cells are on the anther not contained within it as assumed in the question.
47	Solutions are referred to in the checked items for this standard.
49	Decomposers provide nutrients to ALL organisms, producers and consumers both. They "directly" provide nutrients to producers.
52	Illustration could confuse students- they look at the picture from outside the book and Theresa from inside- so are they looking at the reverse?
74	Photosynthesis requires oxygen and hydrogen.

Table 5.7
Notes by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
2	Question does not address...how machine makes work easier...portion of standard.
4	A lot of unnecessary reading.
5	Students are indeed asked to analyze interactions of energy and matter when asked to identify the best "conductor." This does not match the standard on "heat flow." (8.P.3.1) Since it discusses conductors I set it with the standard here.
8	Layers hard to distinguish.
9	Is this a reading for inference question?
11	This item requires students to compare the relative size of earth to the sun which is a checked indicator.
11	Possible scaling issues between sun and earth.
11	Fits one of the checked objectives.
11	The sun is way too small.
	This is a check mark standard.
14	This is a check mark standard.
15	Answer is clued with ...need to buy and indoor plants. Cannot buy heat...can buy heater...while oxygen and carbon dioxide can be purchased. Kids will discount choices B and D immediately.
15	Can anything other than a light source be bought? A scuba diver could buy oxygen, I suppose, but this would have nothing to do with the question.
16	Another reading for inference question.
17	This is about the formation of geologic features, which is a checked indicator.
17	When explaining formation of geological features (in this case lava from mantle forming a volcano) students are meeting the checkmark ("explain the formation of geological features of the earth through plate tectonics") not the standard or bullets.
17	Fits one of the checked objectives.
17	A check mark standard.
18	Question does refer to gaseous and rocky celestial bodies which does describe composition universe as addressed in 5.E.2 but is above the requirements of 2.1 and 2.2 as specific standards (size, order, distance, brightness, etc.)
19	There is an argument that "keeping only two fish per day" is a type of conservation discussed in the checkmark not the indicator or benchmark/bullet.
19	A reading inference question.
20	A reading inference question.
21	Is water dripping or running off tarp?
26	The distractors contain the words adaptation, parasitism, and mutation which are checked items.

Table 5.7
Notes by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
26	Aligns with check marked indicator which aligns with adaptation, mutation, and parasitism
26	In the standard L.3.3 it says to describe & define interrelationships but being able to give vocabulary terms to describe these relationships is indicated by the check mark (future grade level). It is possible that students will be able to work with the term cooperation here but the other answer options (mutation, parasitism) are directly under this check mark.
26	A check mark standard.
30	Item should state..."on earth"...Answer choice A could be deemed a correct response. Question DOK 1 common knowledge on ball rolling up hill.
30	Could gravity affect this?
31	This item is about changes in states of matter, not defining matter by observable characteristics which is is a checked indicator.
32	Assuming raccoons eat the food, big assumption, no guarantee, should be stated.
32	A reading for inference question.
33	Answer choices clearly direct student to correct answer.
33	A reading for inference question.
34	A catalytic "converter" does not TRAP anything -- it CONVERTS bad things into less bad things.
34	Catalytic converters don't trap.
35	Diagram arrow after amphibian is confusing...assumes student knows to progress to small mammal.
36	Not to scale...should state in diagram. stretching item to indicator.
38	Sailing is not a typical method of transportation any more and yet I didn't know where else it would fit. Must be science and technology to evaluate sails but not stated in any of the standards.
38	Is a sail a simple machine...
38	Sails are indeed about forces, but not gravity and not really about the general things mentioned in 5P21.
38	I think there could be more than one answer, even with the word "most".
39	Students must have a large amount of knowledge about coal (its costs, burning coal as compared to wood, coal as a limited resource (which could be argued with the conservation practice checkmark in 5.S.2.1), and its efficiency to be able to answer this question. If required 5.S.1.2 is also an option.
39	A reading inference question.
47	This item requires students to explain the difference between solutions and mixtures...(ex. Solution) which is a checked indicator.
47	Aligns to the check mark explain the differences and similarities between a solution and other mixtures...

Table 5.7
Notes by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
47	"solution" (the answer to the question) and other types of mixtures are terms applied in the checkmark not the standard and are meant to be taught in future years.
47	Fits one of the checked objectives.
47	A check mark standard.
51	Since the stem tells that light spreads out as it travels, this item can be answered without any knowledge from the objective.
53	The student only needs to know how to read thermometers in the chart. The student is not measuring the temperature of the materials placed in the sunlight.
53	A check mark standard.
54	Students should be able to answer the question but it seems to be a question based on a collection of observations more than physical descriptions (5.P.1.1). The observations are a part of the checkmark in 5.N.2.1 and are meant to be tested in future years.
55	Would the box of apples have the ability to stay stationary on the 80% grade of the incline plane? Question discusses problems not how makes work easier
60	A reading inference question.
61	distractors ...fresh air and warmth, might be an issue
63	This question aligns very loosely to the concept of how organisms relate to the environment.
63	"hibernation" is the term being tested which is found in no 5th grade standard. It can almost have to do with biotic and abiotic effects but is at a higher level of knowledge than required by the 5.L.3.1 standard.
63	While hibernation is the result of a link between the organism and the environment, this item doesn't fit a specific objective.
63	A reading inference question.
65	While question has everyday application...not to keen on the item.
66	This question refers to a conservation practice of traveling with more people per bus and conserving fossil fuels. This is a checkmark under the standard and should be tested in future years.
66	No invention as indicator suggest is needed.
66	More people riding buses is an implication for the environment and for society, I don't think it fits a scientific change that affects transportation (5S11) or that it has to do with constraints (5S12).
66	A reading inference question.
67	This question needs to align with a standard that identifies types of energy which does not exist verbatim in grade 5
68	This question refers to a conservation practice of fall and spring hunting seasons. This is a checkmark under the standard and should be tested in future years.

Table 5.7
Notes by Reviewer
South Dakota Science 2008 Grade 5

Item Number	Comments by Reviewer
68	Fits one of the checked objectives. I believe it fits 5S21 better than 5L31 because 5S21 specifically mentions conservation in the checked objective.
68	A reading inference question.
72	This question is testing student knowledge of plate tectonic and formation of geological features when it answers "melted rock from the mantle can reach the surface through cracks in the crust, a checkmark under the standard and not a define and describe Earth's structure.
74	Water is composed of hydrogen and oxygen...thus question technically has three correct answers.
75	it doesn't seem that 5P21 would include the specific fact that the attraction force of magnets depends on OPPOSITE poles attracting each other.

Table 8.5
Source-of-Challenge Issues by Reviewer
South Dakota Science 2008 Grade 8

Item Number	Comments by Reviewer
16	Atomic number is defined as the number of protons in the nucleus. Both "a" and "d" have 6 protons in the nucleus. The difference between "a" and "d" is the number of electrons.
16	Model of an atom? I'm not an expert but think it should be an ion.
22	If, as the question states, the "liquid was gone", the liquid must not have been a mixture -- which is the only reasonable answer. A reasonable decision for a smart student would be to decide that the liquid was water, a compound, and get the question marked wrong.
30	Does all of society really desire to explore space?
38	The answer to the variable question is in the question itself
42	Perhaps nitrogen ion?
51	In most text (Glencoe, Pearson, etc) the changed variable is termed the "manipulated variable" and all variables are "experimental" (going into the experiment). I believe students will still choose the correct answer based on the choices but please check the terms for correct definitions.
56	In addition to asteroids, there are planets smaller than the earth.
56	Since there are planets that are smaller than Earth; there may be two correct answers to this question-asteroids and planets.
56	The question asks which of the following is smaller than Earth and both planet and asteroid are options. There are planets smaller than Earth, of course the BEST answer is asteroid but perhaps italicizing IS would ensure that the right answer is picked by students who know the content.
56	I'm quite certain there are planets smaller than earth and I don't count out the possibility of a planet sized asteroid
76	The question wants the "fact" that ocean currents are "mostly affected by the movement of global winds" but it doesn't take salinity, density, etc into effect. The wording of the answer should be to the effect: "are affected by the movement of global winds" and choose another answer to A.

Table 8.7
Notes by Reviewer
South Dakota Science 2008 Grade 8

Item Number	Comments by Reviewer
3	Reading question.
4	2 standards chosen. Not sure the questions directly attacks both (infrared satellite images and hurricanes) but it does require both sets of knowledge.
5	Reading question.
6	A check mark standard.
10	To answer this question the student must interpret a graph. The student is not asked to define a fact.
10	This question asks students to use the graph to determine which item is a fact. The focus is on determining a fact not constructing a graph.
10	The question asks which of the answers is a "fact based on the graph" which when reading the answers requires the knowledge of the definition of a fact, it is not a mere interpretation of the graph (N.2.1)
10	Students are using the graph to interpret data.
10	Asking students to use the definition of a fact, not designing an investigation. The student did not create the graph only using the graph created by someone else to determine if question was a fact.
10	We discussed whether the graph provided needed information: I think the question can be answered correctly, without looking at the graph, if one knows the definition of a fact.
10	I did not think this question was about defining a fact, but about interpreting the graph to come up with a fact.
12	Reading question.
15	The diagram gives the answer so clearly that a student need not have studied this objective to get the correct answer.
17	A check mark standard.
23	The question directs students to identify the reason for using a pH meter (acidity) which fits best under the nature of science standard about lab equipment but it is highly possible that students are at this level unfamiliar with acidity and pH. In the standards they learn about chemical changes and acid rain but this does not directly imply acidity.
24	Most likely bring cool, moist air...while B is the correct answer, the wording of the stem allows for justification of B.
24	A check mark standard.
25	Reading question.
27	Images could be clearer. The darkness of the images might hamper the ability to determine. Removing the shading and keeping just the black outline might be a good idea
29	Should we include theory...question goes from hypotheses to law?
30	Weak distractors.
30	Reading question.
33	How can we be sure ..."yet harder than apatite?" I could not locate information to determine the hardness.

Table 8.7
Notes by Reviewer
South Dakota Science 2008 Grade 8

Item Number	Comments by Reviewer
34	When students have to evaluate the "most" they are at a higher DOK than merely recall.
34	Not commonly taught in SD schools makes it a two. If it was commonly taught, would make it a DOK 1.
34	I thought the answer to this question was common knowledge.
36	Reading question.
38	Only one answer choice mentions time.
38	There was discussion about whether this item is at DOK 1 or 2. I give it a 1 because the answer is clearly given in the stem: I knew the answer before even looking at the distractors.
44	Only one answer choice is credible
44	A reading question.
49	Earth and moon should be half shaded.
55	This is almost precisely the same question as number 43.
57	Answer choices direct student to only one choice. Distractors should be changed.
58	Only one credible answer choice.
58	Reading question.
60	Answer choices are not labels but descriptions of data to place in chart. Either change stem to reflect this or change answer choices to reflect labels.
66	Reading question.
68	The aquifer question relates most closely to the water cycle- not addressed specifically in the standards, but by the indicator.
68	Reading question.
70	A check mark standard.
71	Students would have to know both density and the purpose of the objects pictured. Density is mass/volume. In the Earth standards students are directed to know specific gravity of rocks/minerals and density as it compares to ocean water but it seems they would have to have a higher level of knowledge to answer the question (8.E.1.1 and 8.E.1.5 may be possible standard matches as well). A better question for this grade would be asking students about measuring mass and showing the same images.
73	The standard speaks to erosion caused by humans, which is not covered by this standard.
73	The question targets weathering and erosion and asks for the most efficient and economical way to prevent it. Students would have to have knowledge of both erosion and the ability to solve societal issues.
73	This item could have been coded to 8S21, but that objective allows only for "problems created by human activity". Beach erosion is a natural event.
76	A check mark standard.
77	This item is about cloud formation, which is a checked indicator.

Table 8.7
Notes by Reviewer
South Dakota Science 2008 Grade 8

Item Number	Comments by Reviewer
77	This is asking students to use the definition of a fact, not designing an investigation. The student did not create the graph only using the graph created by someone else to determine if question was a fact.
77	A check mark standard.

Table 11.5
Source-of-Challenge Issues by Reviewer
South Dakota Science 2008 Grade 11

Item Number	Comments by Reviewer
20	The diagram is confusing. There is not enough of difference between what is land and what is water.
20	Diagram for water cycle is not clear what it represents...could be grass or water, beach or road
42	food is considered a commodity and is traded as such on the open markets
44	There seems to be an issue with this question. I was led to the correct answer of natural selection but it seems that the situation is describing competition (2 species - 1 native - 1 introduced) and not natural selection.
44	This is not an example of natural selection. It is an example of an invasive species in competition with native species. Nature is not selecting beneficial genes. There are no mutations. No beneficial adaptation has emerged through time.
46	some may also argue gloves as necessary for lab safety
71	multiple distractors could be considered true for alternative fuels
73	multiple distractors could be argued for resistance to cloning
74	question implies multiple answers "under which circumstances...."
91	Both communicating the results of research to others and abiding by applicable laws are ethical responsibilities of scientists.

Table 11.7
Notes by Reviewer
South Dakota Science 2008 Grade 11

Item Number	Comments by Reviewer
1	Only one distractor deals with safety.
2	Reading question.
12	Reading question.
14	Life on Mars and using a telescope to determine it would be N.1.1 question. However here it is asking students to understand the origin of scientific knowledge not evaluate it or determine how beliefs influence it.
17	This is a DOK of 2 because the student had to manipulate the formula, rather than plug numbers into a formula, to get the correct response.
17	Students have to manipulate an equation to answer the question, not simply plug and chug.
17	Must insert numbers and solve problem.
17	This is a "plug and chug" question, DOK 1, if this is commonly taught in SD.
20	The diagram in this item is not clear. It could be a body of water on the left, next to a shoreline, next to land, or it could be all land with a road going down the middle.
20	Diagram difficult to see arrows are moving from trees and is arrow 3 coming from a lake, meadow or ocean (road or beach?)
20	The diagram is quite confusing. My first answer was wrong because I misinterpreted the diagram. Is arrow 3 above a grassland or an ocean? Is that a river or a road winding through the middle? Why should the trees be involved in transpiration but not the grass on the right?
20	Is that water on the right-hand side of the picture?
21	DOK 2 because you need to analyze the picture in order to answer the question.
21	Distractors could use improvement.
22	This item is coded to a life science indicator because the outbreak of a disease will affect the stability of a population and easy global transportation is a human impact on this population.
22	The outbreak of disease and transportation does analyze implications of scientific advancement but it is not specific enough to put it in the "impact of scientific discoveries" category of S.1.2.
22	It's not at all clear where to code this item. I put it at the first one I thought fit, but how to decide between S12 and S21?
22	I thought this was more a human activity question than a science/society question. It could be aligned at S.1.2, if it is considered a science/society question.
23	Would the question better match stem with 1:4 ratio instead of fraction? Or, change word “ratio” to “probability.”
30	Unsure whether to categorize as S.1.1 or E.1.3. It does seem to be ethically related but is also human activity affecting land and atmosphere.
30	Reading question.

Table 11.7
Notes by Reviewer
South Dakota Science 2008 Grade 11

Item Number	Comments by Reviewer
33	Reading question.
35	Answer is very obvious.
35	Reading question.
36	Reading question.
38	Reading question.
40	This is the same question as #88, in 40 they ask for the activity that increases oxygen in the atmosphere and in 88 it is asking for the activity that decreases carbon dioxide - photosynthesis/planting grass. Redundancies that may lead to repeated student error.
42	Most kids will think of GE as General Electric, not genetically engineered.
43	Did not see any standards that directly reference to law of gravitation.
45	Should weight be mass in B?
53	No standard for universal gravitation.
55	The question asks students to use stoichiometry (part of the p.1.4 standard), but asks them to take the balancing of the atoms in the equation to a level past the standard (limiting reagents and mass) which seems to be above the level of 9-12 required objectives.
56	The diagram of the pinwheel is not necessary or helpful.
57	This item is about effects of size and distance on gravitational attraction between two objects. There is no indicator for this concept.
57	There is not an individual standard that addresses gravitational force.
57	There is no formula or indicator/standard for gravitational force calculations.
57	This item clearly has to do with forces, but there is no mention of the gravitational inverse-square law, nor is the appropriate equation given on the formula sheet.
58	Do not use information on chart to answer question.
59	Reading question.
60	Using observations students are asked to describe their role in the modification of hypotheses as done here with Galileo and the telescope.
60	This should be a common knowledge answer. The Venus example is classic.
61	Transportation, environmental impact, electricity, and the scientific method are used leading to standards: S.2.1, S.2.2, and N.2.1.
64	This item is about structures of an organism which helps it adapt to its environment. There is no indicator for this concept.
76	Reading question.
	No standard for evaluating a scientist's current work.
84	Diagram not to scale.
84	Scaling

Table 11.7
Notes by Reviewer
South Dakota Science 2008 Grade 11

Item Number	Comments by Reviewer
88	This is the same question as #40, in 40 they ask for the activity that increases oxygen in the atmosphere and in 88 it is asking for the activity that decreases carbon dioxide - photosynthesis/planting grass. Redundancies that may lead to repeated student error.

Appendix D

Debrief Summary Notes

South Dakota
Grades 5, 8, and 11
Science
2008

Table 5.15
Debriefing Summary
South Dakota Science 2008 Grade 5

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· yes
· I would have liked to see some questions about elements and molecules. I didn't see any questions about these concepts (5.P.1.1). Also the standard 5.S.2.1 could have included some questions on human population pushing out native populations.
· I feel that each standard was covered during the assessment. Was a bit weak assessing the sun's ability to produce energy (light/het)
· Items for each indicator were located. I felt the assessment addressed the indicators. However I did not see items reflecting how simple machines reduce workload.
· Yes, a very good distribution.
· 5.P.3.1 and 5.P.3.2 were not given as many questions as other standards. Also, 5.L.2.1 and 5.E.1.1. The technology standards were addressed sparingly.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes
· I was unable to locate many level 3 questions.
· Seemed to match well.
· I was expecting a few more level three questions.
· I did not locate any DOK 3
· Yes, a good balance of DOK levels 1 and 2.
· Acceptable.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· The way the standards are written in 5.1.2.1 (use investigations...to accumulate knowledge) creates confusion when trying to understand what the teacher is to teach and what will be assessed. That happens in other areas of the standards where checkmarks are used to indicate indicators which will be assessed at a higher grade level.
· Generally speaking, yes.
· Seemed to match well. A lot of things going on, it would be difficult to develop a fluid curriculum to incorporate all of these very different concepts.
· Acceptable for grade 5.
· Yes
· Yes
· Acceptable.

Table 5.15
Debriefing Summary
South Dakota Science 2008 Grade 5

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (2) : 29%
iii. Needs slight improvement (5) : 71%

E. Comments

· Some of the questions directly tested the chekmarked descriptions under the standard. We were directed that these checkmarks are information for future years and not this year and should not be assessed on this exam.
· Scaling issues in Earth Science and simple machine work reduction items in physical science,
· I am concerned about the reading levels of some items, largely because I found some items that had unnecessary sentences which would take time to read and study for important information even though no such information is included. A few items could not be connected to a specific objective.
· By reading inference questions, I mean that, even though there is a science standard match, the question could just as easily be on a reading test. No specific science knowledge is needed.

Table 8.15
Debriefing Summary
South Dakota Science 2008 Grade 8

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes.
· I didn't see any questions about convection currents in the mantle or changes over time (8.E.1.2). Also questions focusing on the rock cycle seemed to be missing. There were a lot of ocean based questions. Also, questions 55 and question 43 are nearly the exact same question, seems unfair to test it twice.
· I did not feel the influences of earth, moon and sun were well covered.
· The test nicely covered the indicators for grade 8.
· Yes, I thought there was a nice balance.
· A good distribution.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· Yes.
· Generally a good balance between 1, 2, and 3
· Seemed to match DOK levels fairly closely. Some level 1 areas were heavy on vocabulary and yet the standards seemed at a level 1 but were listed at level 2.
· acceptable
· Yes
· Yes, I found about one-third of the items were at level 2. There were none at level 3, not too surprising for grade 8.
· Mostly ones.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes
· In some cases the standard did not go into the depth required by some questions (ex. density is in the standards but knowing the formula is not, acidity is in the standards but pH is not, and eclipses are in the standards but partial and full eclipses are not).
· Acceptable
· Yes
· Yes.
· Reading level acceptable.

D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (5) : 71%
iii. Needs slight improvement (2) : 29%

Table 8.15
Debriefing Summary
South Dakota Science 2008 Grade 8

E. Comments

· I think a lot of the items use distractors that don't adequately seek out common misconceptions; they seem to be worded very closely to the terminology of the objectives.
· See grade 5 reading remarks. These kinds of questions appear in the 8.S section. I believe that many of the answers to these questions are common knowledge. In standard 8.N.1.1, it is incorrect to state that theory becomes law. Theories are replaced by new theories. A science law is a separate concept. Such statements result from the misconception that theories are tentative. They are not; they have great summary and predictive value.

Table 11.15
Debriefing Summary
South Dakota Science 2008 Grade 11

A. For each standard, did the items cover the most important topics you expected by the standard? If not, what topics were not assessed that should have been?

· Yes.
· There seemed to be many science and technology standards addressed and some of the other standards were met with few to no questions based on the indicated performances under each standard. I do not recall any questions that matched the taxonomy standard (L.1.2)
· Yes.
· No. In the group relating to force (9-12.P.2) There was only one item for P.2.1 but nine items for P.2.2 -- and most of them were about orbits, which is a special case not mentioned in the objectives.
· Not much for N.1.1 or N.1.2. Nothing for P.1.1. Little for p.1.5, or P.2.1, but lots of examples with the standard. Nothing for L.1.1, but lots of examples with the standard. Nothing for S.1.1 and S.2.1. There are enough "hits" on other indicators within each standard to spread out some questions to these lightly hit areas.

B. For each standard, did the items cover the most important performance (DOK levels) you expected by the standard? If not, what performance was not assessed?

· It was very difficult to determine a DOK (between 2 and 1) for many of the items which were aligned to science and society indicators. The difficulty lies in determining if the student has enough information from the stem to use reasoning to arrive at the correct response, or does the student have to know the correct answer because they are not able to use the information to get at the correct response.
· Seemed as if the design and analysis portions of DOK were missing in many of the questions. Hard to label questions above a 2, which was different from prior grade tests.
· Yes.
· No. I expected to see at least a couple at level 3.

C. Were the standards written at an appropriate level of specificity and directed towards expectations appropriate for the grade level?

· Yes.
· Many of the standards were repetitive and unclear in their specificity. The examples used were similar/same for several standard options.
· Yes.
· No. There are many items that cannot be reliably identified as matching only one of N1.1, N.1.2, S.1.2, S.21.
· At this point, reflecting on all three exams, I think there was a great deal of reading for kids to do.

Table 11.15
Debriefing Summary
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D. What is your general opinion of the alignment between the standards and assessment:

ii. Acceptable Alignment (3) : 43%
iii. Needs slight improvement (4) : 57%

E. Comments

· Overall I have the impression that there was an imbalance of indicators represented by questions on the 12th grade test. There seems to be more emphasis on applying questions to societal issues rather than the areas of physical, life, and earth science.
· See earlier reading comments. Some of these questions, at all levels, could be eliminated and more substantial science content questions asked. It was extremely difficult for us to decide between nature of science and science and technology standards. They are not clearly different.