

SD Common Core State Standards Disaggregated Math Template

Domain:	Operations and Algebraic Thinking	Cluster:	Use the four operations with whole numbers to solve problems.	Grade level:	4
----------------	-----------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.OA.1 Interpret products of whole numbers, e.g. interpret 5×7 as the total number of objects in 5 groups of 7 objects each.	4.OA.1 Interpret a multiplication equation as a comparison, e.g., interpret $35 = 5 \times 7$ as a statement that 35 is 5 times as many as 7 and 7 times as many as 5. Represent verbal statements of multiplicative comparisons as multiplication equations.	5.OA.2 Write simple expressions that record calculations with numbers, and interpret numerical expressions without evaluating them. For example, express the calculation “add 8 and 7, then multiply by 2” as $2 \times (8 + 7)$. Recognize that $3 \times (18932 + 921)$ is three times as large as $18932 + 921$, without having to calculate the indicated sum or product.

Student Friendly Language:
I can demonstrate commutative property.
I can write an equation more than one way.
I can identify an example of commutative property.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • commutative property of multiplication • factors • array • multiplication facts 	The order of factors in a multiplication equation does not change the product.	<p>Draw an array demonstrating a multiplication equation as a comparison.</p> <p>Model multiplication equations as a comparison using manipulatives, students acting etc.</p> <p>Recite multiplication facts.</p>

Key Vocabulary:
interpret comparison array commutative property of multiplication equation factors
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
To be able to apply the commutative property through brainstorming real life applications. Example: the order of events, arrays in a garden, arranging flowers in a flower shop (e.g. 4 pots of flowers on 5 shelves and vice versa) do not affect the outcome.

SD Common Core State Standards Disaggregated Math Template

Domain:	Operations and Algebraic Thinking	Cluster:	Use the four operations with whole numbers to solve problems.	Grade level:	4
----------------	-----------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.OA.3. Use multiplication and division within 100 to solve word problems in situations involving equal groups, arrays, and measurement quantities, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem.	4.OA.2 Multiply or divide to solve word problems involving multiplicative comparison, e.g., by using drawings and equations with a symbol for the unknown number to represent the problem, distinguishing multiplicative comparison from additive comparison.	5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem

Student Friendly Language:
I can solve word problems using multiplication to find an unknown number in an equation. I can solve word problems using division to find an unknown number in an equation. I can choose the best operation to solve a word problem.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • multiplication fact families (factors & multiples) • division fact families • context clues that identify operations (sum, difference, in all) 	<p>Multiplication and division can be used to solve more complex problems.</p> <p>Word problems can be solved using factors and multiples.</p>	<p>Solve word problems.</p> <p>Use symbols to solve equations.</p> <p>Choose the best operation to solve a word problem.</p> <p>Recognize clue words to choose which operation to use.</p>

Key Vocabulary:												
<table> <tr> <td>equal</td> <td>variables</td> <td>equation</td> <td>factors</td> <td>multiples</td> <td>multiply</td> </tr> <tr> <td>divide</td> <td>solve</td> <td>word problems</td> <td>product</td> <td>quotient</td> <td></td> </tr> </table>	equal	variables	equation	factors	multiples	multiply	divide	solve	word problems	product	quotient	
equal	variables	equation	factors	multiples	multiply							
divide	solve	word problems	product	quotient								

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
To use mental math to solve problems when unit pricing, such as grocery shopping, saving for a bike, purchasing movie tickets, and managing a paper route.
To choose the most efficient operation for problem solving, such as counting desks in a classroom individually or by multiplying rows.
Using drawings and equations with a symbol for the unknown number to represent the problem.

SD Common Core State Standards Disaggregated Math Template

Domain:	Operations and Algebraic Thinking	Cluster:	Use the four operations with whole numbers to solve problems.	Grade level:	4
----------------	-----------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.OA.8 Solve two-step word problems using the four operations. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	4.OA.3 Solve multi-step word problems posed with whole numbers and having whole-number answers using the four operations, including problems in which remainders must be interpreted. Represent these problems using equations with a letter standing for the unknown quantity. Assess the reasonableness of answers using mental computation and estimation strategies including rounding.	5.NF.6 Solve real world problems involving multiplication of fractions and mixed numbers, e.g., by using visual fraction models or equations to represent the problem.

Student Friendly Language:
<p>I can add multi-step word problems with missing digits. I can subtract multi-step word problems with missing digits. I can multiply multi-step word problems with missing digits. I can divide multi-step word problems with missing digits. I can review my work to see if it makes sense. I can explain the steps taken to solve a problem.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> ● addition facts ● subtraction facts ● multiplication facts ● division facts ● variables ● self-check process ● mental math strategies ● estimation strategies ● inverse operations 	<p>There are key phrases in word problems.</p> <p>Fact families help with the self-check process.</p> <p>Mental math helps with the self-check process.</p> <p>Estimation helps with the self-check process.</p> <p>Variables represent the unknown quantity.</p>	<p>Solve multi-step word problem.</p> <p>Solve for the variables in the problem.</p> <p>Check multi-step problem using mental math and estimation.</p>

Key Vocabulary:
<p>difference sum total twice remainder estimate round</p>
<p>Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?</p>
<p>How much of a pizza would be left after sharing.</p> <p>Decide if there is enough for others or find ways to split the remainder so everyone gets equal amounts.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	Operations and Algebraic Thinking	Cluster:	Gain familiarity with factors and multiples	Grade level:	4
----------------	-----------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.OA.7 Fluently multiply and divide within 100, using strategies such as the relationship between multiplication and division or properties of operations. By the end of Grade 3, know from all memory all products of two one-digit numbers.</p> <p>3.OA.9 Identify arithmetic patterns, and explain them using properties of operations.</p>	<p>4.OA.4 Find all factor pairs for a whole number in the range 1-100. Recognize that a whole number is a multiple of each of its factors. Determine whether a given whole number in the range 1-100 is a multiple of a given one-digit number. Determine whether a given whole number in the range 1-100 is prime or composite.</p>	None

Student Friendly Language:
<p>I can find factor pairs and multiples of all whole numbers from 1-100.</p> <p>I can decide if a number from 1-100 is prime (only divisible by one and itself) or composites (has more factors than one and itself).</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • prime and composite numbers • factors • multiples • whole numbers 	<p>Whole numbers are factors of their product.</p> <p>The difference between prime and composite numbers.</p> <p>Multiples are products of any two whole numbers.</p>	<p>Create a factorization model (eg. factor tree, factor line, etc.) of any given whole number up to 100.</p> <p>Complete a fact family.</p> <p>Compose a list of prime and composite numbers.</p>

Key Vocabulary:										
<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">factors</td> <td style="width: 20%;">multiples</td> <td style="width: 20%;">composite numbers</td> <td style="width: 20%;">prime numbers</td> <td style="width: 20%;">whole numbers</td> </tr> <tr> <td>patterns</td> <td>factor tree</td> <td>fact family</td> <td>divisible</td> <td>product</td> </tr> </table>	factors	multiples	composite numbers	prime numbers	whole numbers	patterns	factor tree	fact family	divisible	product
factors	multiples	composite numbers	prime numbers	whole numbers						
patterns	factor tree	fact family	divisible	product						
<p>Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?</p>										
<p>Determining dates of events (In the summer the ice cream truck comes every 4 days. It was there on June 4th and June 8th. When will it come next?)</p> <p>Scoring sports (basketball, multiples of 2 and 3 points; football, multiples of 6 points)</p> <p>Purchasing multiples of products</p>										

SD Common Core State Standards Disaggregated Math Template

Domain:	Operations and Algebraic Thinking	Cluster:	Generate and analyze patterns	Grade level:	4
----------------	-----------------------------------	-----------------	-------------------------------	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.OA.9 Identify arithmetic patterns (including patterns in the addition table or multiplication table), and explain them using properties of operations.</p>	<p>4.OA.5 Generate a number or shape pattern that follows a given rule. Identify apparent features of the pattern that were not explicit in the rule itself. For example, given the rule “Add 3” and the starting number 1, generate terms in the resulting sequence and observe that the terms appear to alternate between odd and even numbers. Explain informally why the numbers will continue to alternate in this way.</p>	<p>5.OA.3 Generate two numerical patterns using two given rules. Identify apparent relationships between corresponding terms. Form ordered pairs consisting of corresponding terms from the two patterns, and graph the ordered pairs on a coordinate plane. For example, given the rule “Add 3” and the starting number 0, and given the rule “Add 6” and the starting number 0, generate terms in the resulting sequences, and observe that the terms in one sequence are twice the corresponding terms in the other sequence. Explain informally why this is so.</p>

Student Friendly Language:
<p>I can identify the rule for any number or shape pattern. I can apply (use) the rule for any number or shape pattern. I can explain the rule for any number or shape pattern.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • odd and even numbers • multiplication facts • four math operations 	<p>Patterning can alternate between odd and even numbers.</p> <p>Patterning can be numbers or shapes.</p> <p>Different patterns can have different rules.</p>	<p>Identify number and shape patterns that follow a given rule.</p> <p>Apply a given rule to continue a number or shape pattern.</p> <p>Explain what the rule is for a number or shape pattern. Generate a number or shape pattern.</p>

Key Vocabulary:					
<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">sequence patterns</td> <td style="width: 20%;">multiples rule</td> <td style="width: 20%;">alternate apply</td> <td style="width: 20%;">identify generate</td> <td style="width: 20%;">generate</td> </tr> </table>	sequence patterns	multiples rule	alternate apply	identify generate	generate
sequence patterns	multiples rule	alternate apply	identify generate	generate	
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?					
<p>Trying to predict the amount of time it will take to finish farm/ranch work.</p> <p>If you are playing a game and you are behind, how many baskets/points you need to win.</p> <p>If you are making jewelry, what type of pattern will you use.</p>					

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster:	Generalize place value understanding for multi-digit whole numbers	Grade level:	4
----------------	-----------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
	4.NBT.1 Recognize that in a multi-digit whole number, a digit in one place represents ten times what it represents in the place to its right. For example recognize that $700/70=10$ by applying concepts of place value and division.	5.NBT.1 Recognize that in a multi-digit number, a digit in one place represent 10 times as much as it represents in the place to its right and $1/10$ of what it represents in the place to its left.

Student Friendly Language:

I can identify the value of each digit in a multi-digit whole number up to one million.

I can describe the structure of the base ten number system.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • whole numbers zero to one million • place value up to one million 	Each digit in a multi-digit number has ten times the value of the digit directly on the right.	Recognize that each digit's value is multiplied by ten as you move to the left. Identify the value of a whole number in a given place.

Key Vocabulary:

Multi-digit
whole number
Place value

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?

Understand the value of money to make good purchasing/financial decisions.

Determine the amount necessary to complete various tasks.

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster: Understand Place Value	Generalize place value understanding for multi-digit whole numbers	Grade level:	4
----------------	-----------------------------------	--	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
	<p>4.NBT.2 Read and write multi-digit whole numbers using base-ten numerals, number names, and expanded form. Compare two multi-digit numbers based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000.)</p>	<p>5.NBT.3 Read, write and compare decimals to thousandths.</p> <p>a. Read and write decimals to thousandths using base-ten materials.</p> <p>b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, $<$ symbols to record the results of comparisons.</p>

Student Friendly Language:
<p>I can read, write, and compare multi-digit whole numbers using $>$, $=$, $<$ symbols.</p> <p>I can write and explain the expanded form of multi-digit numbers.</p> <p>I can write and explain the word form of multi-digit numbers.</p> <p>I can write and explain the standard form of multi-digit numbers.</p> <p>I can represent the base-ten form of multi-digit numbers.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • $>$, $=$, $<$ symbols • Whole numbers $\leq 1,000,000$ • Number words $\leq 1,000,000$ • Comparisons • Expanded Form • Word Form • Base-Ten Form • Standard Form 	<p>Numbers can be written in expanded form, standard form, and word form.</p> <p>There are a variety of ways to compare numbers.</p> <p>The base-ten number system has a place-value structure..</p>	<p>Construct multi-digit numbers using expanded form, base-ten, and word form up to 1,000,000.</p> <p>Read and compare numbers $\leq 1,000,000$ using the $>$, $=$, $<$ symbols.</p> <p>Represent and recognize equivalent representations for the same number.</p>

Key Vocabulary:												
<table style="width: 100%; border: none;"> <tr> <td style="width: 16.6%;">multi-digit numbers</td> <td style="width: 16.6%;">compare</td> <td style="width: 16.6%;">whole number</td> <td style="width: 16.6%;">base-ten</td> <td style="width: 16.6%;">expanded form</td> <td style="width: 16.6%;">standard form</td> </tr> <tr> <td>word form</td> <td>equivalent</td> <td>greater than</td> <td>less than</td> <td>equal to</td> <td></td> </tr> </table>	multi-digit numbers	compare	whole number	base-ten	expanded form	standard form	word form	equivalent	greater than	less than	equal to	
multi-digit numbers	compare	whole number	base-ten	expanded form	standard form							
word form	equivalent	greater than	less than	equal to								
<p>Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?</p>												
<p>Students are able to compare statistics in sporting events.</p> <p>Students are able to analyze statistics within other subject areas such as, science and social studies.</p> <p>Students are able to compare prices while making purchases.</p> <p>Students are able to manage and reflect on finances.</p>												

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster:	Generalize place value understanding for multi-digit whole numbers	Grade level:	4
----------------	-----------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NBT.1 Use place value understanding to round whole numbers to the nearest 10 or 100.	4.NBT.3 Use place value understanding to round multi-digit whole numbers to any place (Grade 4 expectations in the domain are limited to whole numbers less than or equal to 1,000,000)	5.NBT.4 Use place value understanding to round decimals to any place.

Student Friendly Language:
I can round multi-digit whole numbers to any place value up to 1,000,000 (one million).

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> whole numbers 0-1,000,000 place value up to 1,000,000 rounding strategies multi-digit numbers 	<p>Rounding helps to understand if the actual answer is reasonable.</p> <p>The value of a digit in our number system is determined by its place value position.</p> <p>Rounding to an appropriate place value allows for reasonable estimates.</p>	<p>Identify which place value needs to be rounded.</p> <p>Use rounding strategies to re-write the number to the nearest place value.</p> <p>Create real world problems to apply their understanding of rounding up to 1,000,000.</p>

Key Vocabulary:
<p>whole numbers place value (ones to one million) estimate round multi-digit strategies</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
Rounding to a reasonable number allows you to estimate the amount of treats for a class, buses for a field trip, kids in a school, or the number of people living in a state.

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster:	Use place value understanding and properties of operations to perform multi-digit arithmetic	Grade level:	4
----------------	-----------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3. NBT.2; Fluently add and subtract within 1000 using strategies and algorithms based on place value, properties of operations, and/or the relationship between addition and subtraction.	4.NBT.4 Fluently add and subtract multi-digit whole numbers using the standard algorithm. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)	5.NBT.7; Add, subtract, multiply and divide decimals to hundredths, using concrete models or drawings and strategies based on place value, properties of operations, and/or the relationship between addition and subtraction; relate the strategy to a written method and explain the reasoning used.

Student Friendly Language:
<p>I can add numbers up to one million using an efficient method.</p> <p>I can subtract numbers up to one million using an efficient method.</p> <p>I can check my answers using the inverse operation.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> Numbers can be broken apart by place value Addition and subtraction are inverse operations 	<p>There are a variety of strategies used to add numbers.</p> <p>Place value determines the value of a digit.</p> <p>The Commutative and Associative Properties of Addition can be used to solve problems.</p>	<p>Calculate the sums of multi-digit numbers using the standard algorithm up to 1 million.</p> <p>Calculate the differences of multi-digit numbers up to 1 million using the standard algorithm.</p>

Key Vocabulary:
<p>addends sum difference regrouping subtrahend minuend</p> <p>Associative Property Commutative Property algorithm inverse operation</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
<p>Add purchases while shopping.</p> <p>Add monthly expenses and income to create a budget.</p> <p>Determine perimeter of a garden to buy fencing.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster:	Use place value understanding and properties of operations to perform multi-digit arithmetic	Grade level:	4
----------------	-----------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NBT.3 Multiply one-digit whole numbers by multiples of 10 in the range 10-90 (e.g. 9×80 , 5×60) using strategies based on place value and properties of operations.	4.NBT.5 Multiply a whole number of up to four digits by a one-digit whole number, and multiply two two-digit numbers, using strategies based on place value and the properties of operations. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)	5.NBT.5 Fluently multiply multi-digit whole numbers using the standard algorithm.

Student Friendly Language:
<p>I can multiply a number up to four digits by a one-digit number and explain how I did it.</p> <p>I can multiply a two digit number by a two digit number and explain how I did it.</p> <p>I can solve a multiplication problem in more than one way.</p> <p>I can construct a model of a multiplication problem by using equations, rectangular arrays, and/or area models.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Properties of operations can be used to multiply. • Place value strategies can be used to multiply. 	<p>Multiplication is another way to do addition.</p> <p>There are a variety of strategies used to multiply numbers.</p> <p>Models can represent multiplication sentences.</p> <p>There is a relationship between the process of multiplying single-digit numbers and multi-digit numbers.</p> <p>Estimation can be used to see if an answer is reasonable.</p>	<p>Display a model from a multiplication problem.</p> <p>Show more than one way to solve a multiplication problem.</p> <p>Illustrate and explain the models and calculations of multiplication.</p> <p>Explain how to use place value, rectangular arrays, and area models to solve multiplication problems.</p> <p>Make estimation of problems.</p>

Key Vocabulary:												
<table style="width: 100%; border: none;"> <tr> <td style="width: 15%;">Place value</td> <td style="width: 15%;">repeated addition</td> <td style="width: 15%;">distributive property</td> <td style="width: 15%;">digit</td> <td style="width: 15%;">product</td> <td style="width: 15%;">factor/factors</td> </tr> <tr> <td>strategy</td> <td>array</td> <td>equation</td> <td>area</td> <td>whole number</td> <td></td> </tr> </table>	Place value	repeated addition	distributive property	digit	product	factor/factors	strategy	array	equation	area	whole number	
Place value	repeated addition	distributive property	digit	product	factor/factors							
strategy	array	equation	area	whole number								

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?

- Multiply to determine area for painting or carpeting.
- Multiply livestock and feed per animal to determine amount of feed needed.
- Use unit price and quantity needed to determine total cost (e.g., If there are 20 students in a class and each student needs 4 folders that cost \$0.10, how much will it cost the class to buy their folders?)

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations in Base Ten	Cluster:	Use place value understanding and properties of operations to perform multi-digit arithmetic	Grade level:	4
----------------	-----------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NBT.3. Multiply one-digit whole numbers by multiples of 10 in the range 10–90 (e.g., 9×80 , 5×60) using strategies based on place value and properties of operations.	4.NBT.6 Find whole-number quotients and remainders with up to four-digit dividends and one-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models. (Grade 4 expectations in this domain are limited to whole numbers less than or equal to 1,000,000. A range of algorithms may be used.)	5.NBT.6. Find whole-number quotients of whole numbers with up to four-digit dividends and two-digit divisors, using strategies based on place value, the properties of operations, and/or the relationship between multiplication and division. Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.

Student Friendly Language:
I can solve division problems with up to four-digit dividends and one-digit divisors. I can use equations, arrays, and/or area models to explain my calculations.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Strategies can be used to divide. • Multiplication and division are inverse operations. • Quotients can have remainders. 	<p>Explaining your work leads to deeper understanding.</p> <p>Multiplication and division can be used to solve each other.</p> <p>There is a relationship between the properties of operations and solutions of division problems.</p> <p>Equations, rectangular arrays, and area models can be used to find whole number quotients.</p>	<p>Apply strategies based on place value to solve division problems.</p> <p>Apply properties of operations, such as multiplication, to solve division problems.</p> <p>Illustrate and explain the calculation by using equations, rectangular arrays, and/or area models.</p>

Key Vocabulary:								
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">quotient</td> <td style="width: 25%;">remainder</td> <td style="width: 25%;">dividend</td> <td style="width: 25%;">divisor</td> </tr> <tr> <td>equation</td> <td>array</td> <td>area model</td> <td></td> </tr> </table>	quotient	remainder	dividend	divisor	equation	array	area model	
quotient	remainder	dividend	divisor					
equation	array	area model						
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?								
Making equal groups, figuring amount of busses needed for a trip, how many servings can come from a product, how many tables would be needed to seat guests								

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations-Fractions	Cluster:	Extend understanding of fraction equivalence and ordering.	Grade level:	4
----------------	---------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.NF.3.a. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. A.) Understand two fractions as equivalent (equal) if they are the same size, or the same point on a number line.</p> <p>3.NF.3.b Recognize and generate simple equivalent fractions (e.g., $1/2=2/4$, $4/6=2/3$). Explain why the fractions are equivalent, (e.g., by using visual fraction model).</p>	<p>4.NF.1 Explain why a fraction a/b is equivalent to a fraction $(n \times a)/(n \times b)$ by using visual fraction models, with attention to how the number and the size of the parts differ even though the two fractions themselves are the same size. Use this principle to recognize and generate equivalent fractions.</p>	<p>5.NF.1 Add and subtract fractions with unlike denominators by replacing given fractions with equivalent fractions. 5.NF.4.a. Interpret the product as parts of a partition into equal parts: equivalently, as result of a sequence of operations.</p>

Student Friendly Language:
<p>I can explain that a fraction is equal to another fraction by using hands on tools (manipulatives) even though the numbers are different.</p> <p>I can create a number sentence to make equivalent fractions.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> ● fraction; part of a whole <ul style="list-style-type: none"> ○ numerator ○ denominator ● equivalent fractions ● equivalent numbers ● equivalent means same as equal ● multiplication facts and multiples 	<p>Fractions can be equivalent even though numerators and denominators aren't the same.</p> <p>You can create visual fractions to see the parts of a fraction.</p>	<p>Manipulate fraction tools to make equals.</p> <p>Explain how two fractions are equal.</p> <p>Draw pictures to represent equivalent fractions.</p> <p>Create a number sentence using equivalent fractions.</p>

Key Vocabulary:												
<table> <tr> <td>numerator</td> <td>denominator</td> <td>fraction</td> <td>manipulate</td> <td>equivalent</td> <td>multiply</td> </tr> <tr> <td>divide</td> <td>compare</td> <td>greater than</td> <td>less than</td> <td>fraction bar</td> <td></td> </tr> </table>	numerator	denominator	fraction	manipulate	equivalent	multiply	divide	compare	greater than	less than	fraction bar	
numerator	denominator	fraction	manipulate	equivalent	multiply							
divide	compare	greater than	less than	fraction bar								
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?												
<p>Sharing portions of pizza, how can we divide this pizza into fractions that are equivalent? Balancing items on the scale, how can different numbers of items, still weigh the same? If we are using a recipe, what size of measuring cup could we use instead of two $\frac{1}{4}$ cups?</p> <p>Career related fields: wood work, engineers, mechanics, architect, carpenters, plumbers.</p>												

SD Common Core State Standards Disaggregated Math Template

Domain:	Number & Operations-Fractions	Cluster:	Extend understanding of fraction equivalence and ordering.	Grade level:	4
----------------	-------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NF.3 Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size. (d.) Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole.	4.NF.2 Compare two fractions with different numerators and different denominators, e.g., by creating common denominators or numerators, or by comparing to a benchmark fraction such as $\frac{1}{2}$. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with symbols, $>$, $<$, $=$ and justify the conclusions, e.g., by using a visual fraction model.	5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.

Student Friendly Language:
I can determine if a fraction is greater than, less than, or equal to a well known fraction such as $\frac{1}{2}$. I can create common denominators to compare two fractions. I can use $>$, $<$, $=$ symbols to compare two fractions. I can make a model to show I understand comparisons of fractions.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Numerator • Denominator • Visual fraction models • $<$, $>$, $=$ • Multiplication • Division • Common denominator 	<p>The denominator is how many equal parts that make the whole and the numerator is the number of parts chosen or not chosen.</p> <p>Comparisons are valid only when the two fractions refer to the same whole.</p> <p>Other fractions can be used as a benchmark when making comparisons.</p>	<p>Construct a visual model of 2 fractions being compared.</p> <p>Use the correct symbol to compare fractions ($<$, $>$, $=$).</p> <p>Apply multiplication and division skills to change denominators in order to compare fractions.</p> <p>Use a variety of strategies to compare fractions.</p>

Key Vocabulary:										
<table style="width: 100%; border: none;"> <tr> <td style="width: 20%;">numerator</td> <td style="width: 20%;">denominator</td> <td style="width: 20%;">common denominator</td> <td style="width: 20%;">benchmark fraction</td> <td style="width: 20%;">greater than</td> </tr> <tr> <td>less than</td> <td>equal to</td> <td>visual fraction models</td> <td>justify</td> <td></td> </tr> </table>	numerator	denominator	common denominator	benchmark fraction	greater than	less than	equal to	visual fraction models	justify	
numerator	denominator	common denominator	benchmark fraction	greater than						
less than	equal to	visual fraction models	justify							

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
<p>Comparing quantities and dividing portions equally. Example: We ordered two equal sized pizzas. My pizza is cut into eighths. Your pizza is cut into sixths. We each eat two slices. Who ate more?</p> <p>Using a ruler to cut, build, or construct. Example: Sally measures her button and it is $\frac{2}{8}$ inches wide. Billy measures his button at $\frac{1}{4}$ inches wide. Who has the widest button?</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	(NF) Number and Operations – Fractions	Cluster:	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	Grade level:	4
----------------	--	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.NF.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$.</p>	<p>4.NF.3 Understand a fraction a/b with $a > 1$ as a sum of fractions $1/b$.</p> <p>a. Understand addition and subtraction of fractions as joining and separating parts referring to the same whole.</p> <p>b. Decompose a fraction into a sum of fractions with the same denominator in more than one way, recording each decomposition by an equation. Justify decompositions, e.g., by using a visual fraction model. Examples: $3/8 = 1/8 + 1/8 + 1/8$; $3/8 = 1/8 + 2/8$; $2\ 1/8 = 1 + 1 + 1/8 = 8/8 + 8/8 + 1/8$.</p> <p>c. Add and subtract mixed numbers with like denominators, e.g., by replacing each mixed number with an equivalent fraction, and/or by using properties of operations and the relationship between addition and subtraction.</p> <p>d. Solve word problems involving addition and subtraction of fractions referring to the same whole and having like denominators, e.g., by using visual fraction models and equations to represent the problem.</p>	<p>5.NF.1 Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators.</p> <p>5.NF.2 Solve word problems involving addition and subtraction of fractions referring to the same whole, including cases of unlike denominators.</p>

Student Friendly Language:
<p>I can show and explain that fractions are parts of a whole that can be added or subtracted.</p> <p>I can break fractions and mixed numbers apart and explain that those parts add back up to the original fraction or mixed number. Ex. $3/8 = 1/8 + 1/8 + 1/8$ or $5/8 = 2/8 + 3/8$</p> <p>I can add and subtract fractions and mixed numbers that have the same denominator.</p> <p>I can use what I know about adding and subtracting fractions and mixed numbers to solve word problems through equations, pictures, or manipulates.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Fraction as part of a whole • Fractions with like denominators can be added or subtracted • Improper fractions are greater than a whole • Improper fractions and mixed numbers are interchangeable. 	<p>A fraction is made up of smaller fractions with the same denominator that added together will equal that original fraction.</p> <p>When adding or subtracting fractions with like denominators, only the numerator is added or subtracted.</p> <p>A fraction can be broken apart and put back together in more than one way using the same denominator.</p> <p>There is a relationship between mixed numbers and their equivalent fractions.</p>	<p>Decompose a fraction into a sum of fractions with the same denominator in more than one way. Justify the decomposition and composition of fractions with a visual fraction model.</p> <p>Add and subtract fractions and mixed numbers with like denominators.</p> <p>Solve word problems involving addition and subtraction of fractions and mixed numbers with like denominators.</p> <p>Convert an improper fraction to a mixed fraction and a mixed fraction to an improper fraction.</p>

Key Vocabulary:					
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">numerator composition</td> <td style="width: 25%;">denominator fraction</td> <td style="width: 25%;">improper fraction equivalent</td> <td style="width: 25%;">mixed number visual fraction model</td> <td style="width: 20%;">decomposition</td> </tr> </table>	numerator composition	denominator fraction	improper fraction equivalent	mixed number visual fraction model	decomposition
numerator composition	denominator fraction	improper fraction equivalent	mixed number visual fraction model	decomposition	
<p>Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?</p>					
<p>Knowing quantities when ordering food – ordering pizza, a birthday cake, pie</p> <p>Altering recipe measurements</p> <p>Measurement in building, sewing,</p> <p>Splitting something fairly</p> <p>Fractional time frames – sporting events, computer lab times, calendar, school year (1st quarter, 2nd period, etc.)</p>					

SD Common Core State Standards Disaggregated Math Template

Domain:	Number & Operations-Fractions	Cluster:	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	Grade level:	4
----------------	-------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.NF.1 Understand a fraction $1/b$ as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. b as the quantity formed by 1 part when a whole is partitioned into b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. b equal parts; understand a fraction a/b as the quantity formed by a parts of size $1/b$. a parts of size $1/b$.</p> <p>3.NF.3. Explain equivalence of fractions in special cases, and compare fractions by reasoning about their size.</p> <p>c. Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i></p> <p>Express whole numbers as fractions, and recognize fractions that are equivalent to whole numbers. <i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i></p> <p><i>Examples: Express 3 in the form $3 = 3/1$; recognize that $6/1 = 6$; locate $4/4$ and 1 at the same point of a number line diagram.</i></p>	<p>4.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction by a whole number.</p> <p>a. Understand a fraction a/b as a multiple of $1/b$. <i>For example, use a visual fraction model to represent $5/4$ as the product $5 \times (1/4)$, recording the conclusion by the equation $5/4 = 5 \times (1/4)$.</i></p> <p>b. Understand a multiple of a/b as a multiple of $1/b$, and use this understanding to multiply a fraction by a whole number. <i>For example, use a visual fraction model to express $3 \times (2/5)$ as $6 \times (1/5)$, recognizing this product as $6/5$. (In general, $n \times (a/b) = (n \times a)/b$.)</i></p> <p>c. Solve word problems involving multiplication of a fraction by a whole number, e.g., by using visual fraction models and equations to represent the problem. <i>For example, if each person at a party will eat $3/8$ of a pound of roast beef, and there will be 5 people at the party, how many pounds of roast beef will be needed? Between what two whole numbers does your answer lie?</i></p>	<p>5.NF.4. Apply and extend previous understandings of multiplication to multiply a fraction or whole number by a fraction.</p> <p>a. Interpret the product $(a/b) \times q$ as a parts of a partition of q into b equal parts; equivalently, as the result of a sequence of operations $a \times q \div b$. <i>For example, use a visual fraction model to show $(2/3) \times 4 = 8/3$, and create a story context for this equation. Do the same with $(2/3) \times (4/5) = 8/15$. (In general, $(a/b) \times (c/d) = ac/bd$.)</i></p>

Student Friendly Language:

I can show multiplication through repeated addition of a fraction to make a whole number.
 I can multiply a fraction by a whole number.
 I can use fraction models and equations to represent a problem.
 I can solve word problems that include fractions and whole numbers.
 I can explain the difference between a whole number and a fraction.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • multiplication is repeated addition • a fraction is a part of a whole. • Commutative Property of multiplication • Associative Property of multiplication • when a whole number is divided into fractions each fraction is an equal piece • there is a difference between a numerator and a denominator • whole numbers can be written as fractions 	<p>Using number lines and fraction models can help them multiply a fraction and a whole number.</p> <p>Decompositions with multiples can be compressed by multiplying by a whole number.</p>	<p>Multiply a whole number and a fraction.</p> <p>Use a visual fraction model and equation(s) to represent a problem.</p> <p>Solve a word problem involving a fraction and a whole number.</p>

Key Vocabulary:

numerator	denominator	multiple	equation	equivalent	factor
whole number	fraction	product	commutative property	associative property	

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?

construction projects (measuring the length)
 recipes (doubling a recipe)
 party planning for large groups (how much to buy, etc)
 sewing (figuring how many yards of fabric needed for a project)
 sports stats (long jump, high jump, pole vault)
 wages (babysit for 4 1/2 hour at \$4/hour)
 measurement-using a ruler
 time- 1/4 hour, 1/2 hour

SD Common Core State Standards Disaggregated Math Template

Domain:	Number Operations, Fractions	Cluster:	Understand decimal notation for fractions, and compare decimal fractions	Grade level:	4
----------------	------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NF.3a- Understand two fractions as equivalent if they are the same size, or the same point on a number line.	4.NF.5 - Express a fraction with denominator 10 as an equivalent denominator 100, and use this technique to add two fractions with respective denominators 10 and 100. For example $3/10$ as $30/100$ and add $3/10 + 4/100 = 34/100$	5.NF.1 - Add and subtract fractions with unlike denominators (including mixed numbers) by replacing given fractions with equivalent fractions in such a way as to produce an equivalent sum or difference of fractions with like denominators. For example, $2/3 + 5/4 = 8/12 + 15/12 = 23/12$. (In general, $a/b + c/d = (ad + bc)/bd$.)

Student Friendly Language:
I can change a fraction with a denominator of 10 to an equivalent fraction with a denominator of 100. I can then add those two fractions.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> Not all fractions have the same denominator place value fractions equivalency When adding fractions with like denominators, you only add the numerator multiples of 10 	<p>When creating equivalent fractions, you multiply the numerator and denominator by the same number.</p> <p>There is a relationship between fractions with denominators in powers of ten. (tenths and hundredths)</p>	<p>Change a fraction with a denominator of 10 to an equivalent fraction with a denominator of 100.</p> <p>Add two fractions with respective denominators of 10 and 100.</p>

Key Vocabulary:
fractions denominator equivalency numerator multiples place value
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
To have an understanding of the difference between money (0.10 to 0.05) and time. Find the percentage grade of a ten point assignment

SD Common Core State Standards Disaggregated Math Template

Domain:	Number and Operations--Fractions	Cluster:	Build fractions from unit fractions by applying and extending previous understandings of operations on whole numbers.	Grade level:	4
----------------	----------------------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.NF.2a Represent a fraction $1/b$ on a number line diagram by defining the interval from 0 to 1 as the whole and partitioning it into b equal parts. Recognize that each part has size $1/b$ and that the endpoint of the part based at 0 locates the number $1/b$ on the number line.	4.NF.6 Use decimal notation for fractions with denominators 10 or 100. For example, rewrite 0.62 as $62/100$; describe a length as 0.62 meters; locate 0.62 meters; locate 0.62 on a number line diagram.	5.NBT.3 Read, write, and compare decimals to thousandths.

Student Friendly Language:
I can write a fraction with a denominator of 10 or 100 as a decimal.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> Decimal notation to hundredths Numerator indicates the number of parts of a whole Denominator determines decimal notation Place Value 	<p>Fractions and decimals represent parts of a whole.</p> <p>Fractions can be written as an equivalent decimal.</p> <p>There is a relationship between the denominator of a fraction and the place value of a decimal number.</p> <p>The position of a number in relation to the decimal point determines its value.</p>	<p>Rewrite fractions as decimals to the hundredths place.</p> <p>Identify the decimal that is equivalent to a fraction.</p>

Key Vocabulary:				
fraction	decimal	decimal notation	numerator	denominator
tenths	hundredths	equivalent	decimal point	

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?
<p>The winner of a race ran it in 12 seconds. The second place runner took $6/10$ of a second more to complete the race. He ran the race in 12.6 seconds.</p> <p>Gymnasts will lose $5/10$ of a point for falling off the balance beam in competition. This will translate to a 0.5 point deduction off their total score.</p> <p>A patient needs 0.4 cc of medicine. The patient will need to measure out $4/10$ cc of the medicine.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	Numbers & Operations Fractions	Cluster:	Understanding decimal notation for fractions and compare decimal fractions	Grade level:	4
----------------	--------------------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.NF.3.d. Compare two fractions with the same numerator or the same denominator by reasoning about their size. Recognize that comparisons are valid only when the two fractions refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual fraction model.</p>	<p>4.NF.7 Compare two decimals to hundredths by reasoning about their size. Recognize that comparisons are valid only when the two decimals refer to the same whole. Record the results of comparisons with the symbols $>$, $=$, or $<$, and justify the conclusions, e.g., by using a visual model.</p>	<p>5.NBT.3.b. Compare two decimals to thousandths based on meanings of the digits in each place, using $>$, $=$, and $<$ symbols to record the results of comparisons.</p>

Student Friendly Language:
<p>I can compare two decimals to the hundredths place by using symbols like $>$, $=$, or $<$, and be able to show how I got my answer.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Decimals to the hundredths • Comparison symbols 	<p>Decimals are part of a whole.</p> <p>The value of a digit in our number system is determined by its place value position.</p> <p>When comparing decimals they can use symbols such as $>$, $=$, or $<$.</p> <p>Comparisons are valid only when the two decimals refer to the same whole.</p>	<p>Interpret place value in decimals to hundredths.</p> <p>Explain the relationship of decimals to the whole.</p> <p>Record results when using comparison symbols such as $>$, $=$, or $<$.</p>

Key Vocabulary:
<p>Decimal point, equivalent, hundredth(s), tenth(s), compare, whole number, decimal</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>To be able to compare amounts of money</p> <p>To understand the metric system in relationship to a science experiment or traveling to another country.</p> <p>Comparing sports statistics (track times, race times)</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit	Grade level:	4
----------------	----------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.MD.2 Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg), and liters (l). Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units, e.g., by using drawings (such as a beaker with a measurement scale) to represent the problem.</p> <p>3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</p>	<p>4.MD.1 Know relative sizes of measurement units within one system of units including km, m, cm; kg, g; lb, oz.; l, ml; hr, min, sec. Within a single system of measurement, express measurements in a larger unit in terms of a smaller unit. Record measurement equivalents in a two column table. For example, know that 1 ft is 12 times as long as 1 in. Express the length of a 4 ft snake as 48 in. Generate a conversion table for feet and inches listing the number pairs (1, 12), (2, 24), (3, 36), ...</p>	<p>5.MD.1. Convert among different-sized standard measurement units within a given measurement system (e.g., convert 5 cm to 0.05 m), and use these conversions in solving multi-step, real world problems.</p>

Student Friendly Language:
<p>I can solve problems involving measurement. I can convert measurements from one unit to another.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Different units of measure are used for different types of measurement (e.g., liters for volume, inches for length). • Measurements can be converted using different units. 	<p>Measurements can be converted within a measurement system (e.g., 1 foot = 12 inches). Some measurement units are more appropriate to use than others in a specific context. There is a relationship between units of measure within a system (e.g., seconds, minutes, hours).</p>	<p>Record measurements in a table. Express the measurements in terms of smaller or larger units that are equivalent. Convert seconds, minutes, and hours, to properly express time.</p>

Key Vocabulary:
<p>meters, centimeters, kilograms, grams, pound, ounce, milliliter, liter, second, minute, hour, inch, foot, equivalent</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Given a total length of lumber, determine the number of shorter lengths that can be made (e.g., 5 yards=15 ft.) Double or half amounts in a recipe. While grocery shopping, determine the better deal on price per ounce, pound, etc.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit	Grade level:	4
----------------	----------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.MD.1 Tell and write time to the nearest minute and measure time intervals in minutes. Solve word problems involving addition and subtraction of time intervals in minutes, e.g., by representing the problem on a number line diagram.</p> <p>3.MD.2 - Measure and estimate liquid volumes and masses of objects using standard units of grams (g), kilograms (kg) and liters (l) Add, subtract, multiply, or divide to solve one-step word problems involving masses or volumes that are given in the same units. e.g. by using drawings (such as a beaker with a measurement scale) to represent the problem.</p>	<p>4.MD.2 Use the four operations to solve word problems involving distances, intervals of time, liquid volumes, masses of objects, and money, including problems involving simple fractions or decimals, and problems that require expressing measurements given in a larger unit in terms of a smaller unit. Represent measurement quantities using diagrams such as number line diagrams that feature a measurement scale.</p>	<p>5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p> <p>a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.</p> <p>b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units</p>

Student Friendly Language:
<p>I can use a diagram such as a number line to show measurement.</p> <p>I can use any of the four operations (+, -, x, ÷) to solve word problems.</p> <p>I can convert units of measurement.</p> <p>I can use fractions and decimals in word problems.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Any of the four operations can be used to solve word problems. • Solutions and strategies can be shown in in different types of diagrams. 	<p>In order to solve word problems, you might have to choose one or more operations.</p>	<p>Interpret and solve problems about the distance between two locations.</p>

Key Vocabulary:
operations, word problems, distance, interval, time, volume, mass, simple fractions, decimals, measurement, unit, quantities, diagrams, number line, measurement scale
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Figure out how long a movie will last or how long it will take to drive somewhere.</p> <p>Measure the amount of liquid you need for a recipe.</p> <p>Measure the amount of pool or hot tub chemicals to use.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Solve problems involving measurement and conversion of measurements from a larger unit to a smaller unit	Grade level:	4
----------------	----------------------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.MD.5 Recognize area as an attribute of plane figures and understand concepts of area measurement.</p> <p>a. A square with side length 1 unit, called “a unit square,” is said to have “one square unit” of area, and can be used to measure area.</p> <p>b. A plane figure which can be covered without gaps or overlaps by n unit squares is said to have an area of n square units.</p> <p>3.MD.6 Measure areas by counting unit squares (square cm, square m, square in, square ft., and improvised units).</p> <p>3.MD.7 Relate area to the operations of multiplication and addition.</p> <p>a. Find the area of a rectangle with whole-number side lengths by tiling it, and show that the area is the same as would be found by multiplying the side lengths.</p> <p>b. Multiply side lengths to find areas of rectangles whole-number side lengths in the context of solving real world and mathematical problems, and represent whole-number products as rectangular areas in mathematical reasoning.</p> <p>c. Use tiling to show in a concrete case that the area of a rectangle with whole-number side lengths a and $b + c$ is the sum of $a \times b$ and $a \times c$. Use area models to represent the distributive property in mathematical reasoning.</p> <p>d. Recognize area as additive. Find areas of rectilinear figures by decomposing them into non-overlapping rectangles and adding the areas of the non-overlapping parts, applying this technique to solve real world problems.</p> <p>3.MD.8 Solve real world and mathematical problems involving perimeters of polygons, including finding the perimeter given the side lengths, finding an unknown side length, and exhibiting rectangles with the same perimeter and different areas or with the same area and different perimeters.</p>	<p>4.MD.3 Apply the area and perimeter formulas for rectangles in real world and mathematical problems. For example, find the width of a rectangular room given the area of the flooring and the length, by viewing the area formula as a multiplication equation with an unknown factor.</p>	<p>5.MD.3 Recognize volume as an attribute of solid figures and understand concepts of volume measurement.</p> <p>a. A cube with side length 1 unit, called a “unit cube,” is said to have “one cubic unit” of volume, and can be used to measure volume.</p> <p>b. A solid figure which can be packed without gaps or overlaps using n unit cubes is said to have a volume of n cubic units.</p>

Student Friendly Language:

I can find the area and perimeter of rectangles by using a formula.
 I can find the missing length or width of a rectangle using the area formula.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • The formula for calculating area is $A = l \times w$. • Perimeter can be calculated by adding the length of each side. 	<p>A formula can be used to find the perimeter and area of rectangles.</p> <p>Multiplication or division can be used to find the area if one factor is unknown.</p>	<p>Use pictures, models or words to explain the relationship between area and perimeter.</p> <p>Apply the formulas of perimeter and area for rectangles.</p>

Key Vocabulary:

rectangle area perimeter formula dimension square units length width

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?

Area: measuring a room for flooring, planting grass seed, covering a bulletin board, wrapping a present, painting a wall
 Perimeter: putting in a fence, borders on a bulletin board, putting trim around a room

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Represent and interpret data.	Grade level:	4
----------------	----------------------	-----------------	-------------------------------	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.MD.3 Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories. Solve one- and two-step “how many more” and “how many less” problems using information presented in scaled bar graphs. For example, draw a bar graph in which each square in the bar graph might represent 5 pets.</p> <p>3.MD.4 Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units—whole numbers, halves, or quarters.</p>	<p>4.MD.4 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Solve problems involving addition and subtraction of fractions by using information presented in line plots. For example, from a line plot find and interpret the difference in length between the longest and shortest specimens in an insect collection.</p>	<p>5.MD.2 Make a line plot to display a data set of measurements in fractions of a unit ($\frac{1}{2}$, $\frac{1}{4}$, $\frac{1}{8}$). Use operations on fractions for this grade to solve problems involving information presented in line plots. <i>For example, given different measurements of liquid in identical beakers, find the amount of liquid each beaker would contain if the total amount in all the beakers were redistributed equally.</i></p>

Student Friendly Language:
<p>I can make a line plot using fractions. I can solve problems by using information on a line plot.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • A line plot begins with the lowest value of the data and ends with the highest value. • A line plot has a mark for every piece of data. 	<p>A line plot can be used for organizing data.</p> <p>A line plot can be used to help compare and interpret data.</p>	<p>Create a line plot using a data set of measurements in fractions.</p> <p>Collect data by measuring objects to $\frac{1}{8}$ of an inch and display the data on a line plot. (e.g., measure students’ height and create a line plot)</p> <p>Solve a problem by using the data in a line plot.</p>

Key Vocabulary:
line plot, fraction, range, difference
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Students can measure and record the size variation among specimens of a certain type of plant or animal.</p> <p>A doctor measures the height and weight of children the same age and creates line plots of the data. The line plots are used to represent and communicate the variation in size among children the same age.</p> <p>An automotive engineer performs a number of trials to measure the distance a vehicle travels under certain conditions. A line plot of the data is created and analyzed to determine the optimum conditions of the vehicle.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Geometric measurement: understand concepts of angle and measure angles.	Grade level:	4
----------------	----------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
none	<p>4.MD.5 Recognize angles as geometric shapes that are formed wherever two rays share a common endpoint, and understand concepts of angle measurement:</p> <p>a. An angle is measured with reference to a circle with its center at the common endpoint of the rays, by considering the fraction of the circular arc between the points where the two rays intersect the circle. An angle that turns through $1/360$ of a circle is called a "one-degree angle," and can be used to measure angles.</p> <p>b. An angle that turns through n one-degree angles is said to have an angle measure of n degrees.</p>	none

Student Friendly Language:

I can identify angles as two rays that share a point.

I can measure an angle in units called degrees.

I can use fractions of a circle to measure an angle.

I can count the number of one degree turns to measure an angle.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> rays can share common endpoints a circle has 360 degrees a degree represents a fraction of a circle 	<p>An angle is made up of two rays with a common endpoint.</p> <p>An angle can be measured with reference to a circle.</p> <p>The number of one-degree turns determines the measurement of the angle.</p>	<p>Identify an angle.</p> <p>Measure an angle with reference to a circle in degrees.</p>

Key Vocabulary:

angle ray degrees circle arc endpoint

Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question "why do I have to learn this"?

To measure and cut wood or steel for projects such as putting corners together to make a picture frame.
To work with athletic stunts, diving/skating/snowboarding- "doing a 360"

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Geometric measurement: understand concepts of angle and measure angles.	Grade level:	4
----------------	----------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
????	4.MD.6 Measure angles in whole-number degrees using a protractor. Sketch angles of specified measure.	????

Student Friendly Language:
I can use a protractor to measure and draw angles.

Know (Factual)	Understand (Conceptual) I want students to understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> a protractor is a tool used to measure angles use of a protractor (how to read it, position it) degrees 	<p>A protractor measures angles to whole number degrees.</p> <p>A protractor can be used to construct angles to a given whole-number degrees.</p>	<p>Use a protractor to measure angles to the nearest degrees.</p> <p>Use a protractor to draw angles to the degrees given.</p>

Key Vocabulary:
protractor whole number angle degree
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Draw plans for building or constructing an item</p> <p>sports (reflection angles in billiards or basketball, the angle needed to position yourself and golf club to hit the ball in the hole, and the best angle to throw a shot put or discus)</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	MEASUREMENT AND DATA	Cluster:	Geometric measurement: understand concepts of angle and measure angles.	Grade level:	4
----------------	----------------------	-----------------	---	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
none	4.MD.7 Recognize angle measure as additive. When an angle is decomposed into non-overlapping parts, the angle measure of the whole is the sum of the angle measures of the parts. Solve addition and subtraction problems to find unknown angles on a diagram in real world and mathematical problems, e.g., by using an equation with a symbol for the unknown angle measure.	none

Student Friendly Language:
<p>I can measure an angle.</p> <p>I can measure pieces of an angle to find the total degrees.</p> <p>I can find unknown angles using an equation (math sentence).</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • non-overlapping parts are fractions of an angle • Angles can be decomposed into non-overlapping parts. • A circle has a total of 360 degrees and can be split into smaller parts. 	<p>An angle can be measured finding the sum of each non-overlapping part of an angle.</p> <p>Unknown angles can be found using equations with a symbol for the unknown angle.</p>	<p>Decompose an angle into non-overlapping parts.</p> <p>Find the angle measure of the whole by adding together the degrees in each decomposed part.</p> <p>Write an equation, with a symbol for an unknown angle measure.</p> <p>Use an equation, by adding or subtracting to find the amount of an unknown angle.</p>

Key Vocabulary:
<p>degree angle measure decomposed non-overlapping equation</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>I can use a compass to find a precise location.</p> <p>I can create a flight plan and follow it using a compass.</p> <p>I can set softball or baseball bases at the correct angle.</p> <p>I can hold my pool cue at the correct angle to get the ball into the pocket.</p> <p>I can cut tile, stained glass or quilt pieces at the correct angle to make them fit.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	Geometry	Cluster:	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Grade level:	4
----------------	----------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
3.G.1 Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.	4.G.1 Draw points, lines, line segments, rays, angles (right, acute, obtuse), and perpendicular and parallel lines. Identify these in two-dimensional figures.	5.G.4 Classify two-dimensional figures in a hierarchy based on properties

Student Friendly Language:
I can draw and identify points, lines, line segments, and rays in two dimensional figures.
I can draw and identify angles (acute, obtuse, right) in two dimensional figures.
I can draw and identify parallel and perpendicular line segments in two-dimensional figures.

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> Parts of two-dimensional figures There are different types of angles 	<p>Lines, line segments, and rays can be identified by their different characteristics.</p> <p>Angles can be classified according to their measures.</p> <p>Two-dimensional figures can be used to find points, lines, line segments, rays, acute angles, right angles, obtuse angles, parallel and perpendicular lines.</p>	<p>Label points, lines, line segments, rays, angles, parallel and perpendicular lines to two-dimensional figures.</p> <p>Draw examples of lines, lines segments, rays, angles (right, acute, and obtuse), parallel and perpendicular lines</p>

Key Vocabulary:								
<table style="width: 100%; border: none;"> <tr> <td style="width: 25%;">points</td> <td style="width: 25%;">lines</td> <td style="width: 25%;">line segments</td> <td style="width: 25%;">rays</td> </tr> <tr> <td>angles</td> <td>parallel and perpendicular line segments</td> <td>two-dimensional figures</td> <td></td> </tr> </table>	points	lines	line segments	rays	angles	parallel and perpendicular line segments	two-dimensional figures	
points	lines	line segments	rays					
angles	parallel and perpendicular line segments	two-dimensional figures						
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?								
Use line segments and angles to sketch plans for constructing and building.								
Drawing a map and/or giving directions.								

SD Common Core State Standards Disaggregated Math Template

Domain:	Geometry	Cluster:	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Grade level:	4
----------------	----------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
<p>3.G.1. Understand that shapes in different categories (e.g., rhombuses, rectangles, and others) may share attributes (e.g., having four sides), and that the shared attributes can define a larger category (e.g., quadrilaterals). Recognize rhombuses, rectangles, and squares as examples of quadrilaterals, and draw examples of quadrilaterals that do not belong to any of these subcategories.</p>	<p>4.G.2 Classify two-dimensional figures based on the presence or absence of parallel or perpendicular lines, or the presence or absence of angles of a specified size. Recognize right triangles as a category, and identify right triangles.</p>	<p>5.G.3 Understand that attributes belonging to a category of two dimensional figures also belong to all subcategories of that category. <i>For example, all rectangles have four right angles and squares are rectangles, so all squares have four right angles.</i></p>

Student Friendly Language:
<p>I can group shapes based on the types of lines they have. I can group shapes based on the types of angles they have. I can tell the difference between right triangles and other triangles.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • Lines can be classified by their relationship to each other. • Angles can be classified and named by their measurement/size 	<p>Two-dimensional figures may be classified using different characteristics, such as parallel or perpendicular lines or by angle measurements.</p> <p>Benchmark angles (90°, 180° and 360°) can be used to approximate the measurements of angles.</p>	<p>Use line models to determine if lines are parallel.</p> <p>Use geometry software to create and measure different sized angles.</p> <p>Create artwork using parallel and perpendicular lines.</p> <p>Sort polygons based on line and angle types and justify sorting rules.</p> <p>Draw and name figures with specific types of lines and/or angles.</p>

Key Vocabulary:
lines, parallel, perpendicular, angles, acute angle, obtuse angle, right angle, right triangles
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Apply angles to the building of things like computers, cars, buildings, or simple machines that make our lives easier. Use angles to enhance artwork. Use different types of lines (parallel, intersecting, perpendicular) to plan and map community roads and traffic flow.</p>

SD Common Core State Standards Disaggregated Math Template

Domain:	Geometry	Cluster:	Draw and identify lines and angles, and classify shapes by properties of their lines and angles.	Grade level:	4
----------------	----------	-----------------	--	---------------------	---

Correlating Standard in Previous Year	Number Sequence & Standard	Correlating Standard in Following Year
	4.G.3 Recognize a line of symmetry for a two-dimensional figure as a line across the figure such that the figure can be folded along the line into matching parts. Identify line-symmetric figures and draw lines of symmetry.	

Student Friendly Language:
<p>I can identify a line of symmetry in a variety of figures.</p> <p>I can draw a line(s) of symmetry.</p>

Know (Factual)	Understand (Conceptual) The students will understand that:	Do (Procedural, Application, Extended Thinking)
<ul style="list-style-type: none"> • two-dimensional figures • line- symmetric figures 	<p>Lines of symmetry divide an object in half.</p> <p>Figures may have zero lines of symmetry.</p> <p>Figures may have more than one line of symmetry.</p>	<p>identify lines of symmetry in figures</p> <p>fold various shapes along a line of symmetry to make matching parts</p> <p>construct figures with geoboards or dot paper to show lines of symmetry</p> <p>draw a line(s) of symmetry on a variety of figures</p>

Key Vocabulary:
<p>symmetry, identical, two dimensional, congruent, line-symmetric figures</p>
Relevance and Applications: How might the grade level expectation be applied at home, on the job or in a real-world, relevant context? Include at least one example stem for the conversation with students to answer the question “why do I have to learn this”?
<p>Complete an art project that requires symmetry.</p> <p>Design, cut and sew a quilt with symmetrical figures.</p> <p>Use symmetry in interior design, landscaping or building projects.</p>