South Dakota Early Learning Guidelines and Head Start Child Development and Early Learning Framework

MATHEMATICS

South Dakota Early Learning Guidelines	Head Start Child Development and Early Learning Framework
STANDARD 1 — Number Sense and Operations Through their explorations, play, and social interactions, children count with understanding and use numbers to tell how many, describe order, and compare.	**Domain: Mathematics Knowledge & Skills** **Domain Elements:** **Number Concepts & Quantities:** The understanding that numbers represent quantities and have ordinal properties (number words represent a rank order, particular size, or position in a list). **Number Relationships & Operations:** The use of numbers to describe relationships and solve problems.
Benchmarks	**Examples**
1. Count by ones to 10 and higher.	Recites numbers in the correct order and understands that numbers come "before" or "after" one another. *(Number Concepts & Quantities)*
2. Count the number of items in a group of up to 10 objects and know that the last number tells how many.	Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity. *(Number Concepts & Quantities)** Uses the number name of the last object counted to represent the number of objects in the set. *(Number Concepts & Quantities)*
3. Verbally count backward from 5.	
4. Look at a group of up to 4 objects and quickly see and say the number of objects.	Uses one-to-one counting and subitizing (identifying the number of objects without counting) to determine quantity. *(Number Concepts & Quantities)**

*H.S. Example is paired with more than one South Dakota Benchmark.

5. Recognize and name numerals 1 to 5.	Associates quantities and the names of numbers with written numerals. *(Number Concepts & Quantities)* Recognizes numbers and quantities in the everyday environment. *(Number Concepts & Quantities)**
6. Compare two groups (containing up to 5 objects each) and describe them using comparative words, such as more, less, fewer, or equal.	Uses a range of strategies, such as counting, subitizing, or matching, to compare quantity in two sets of objects and describes the comparison with terms, such as more, less, greater than, fewer, or equal to. *(Number Relationships & Operations)*
7. Use and understand the terms first, last, and first through fifth.	
8. Separate a collection of 10 items into 2 equal groups.	Recognizes that numbers (or sets of objects) can be combined or separated to make another number through the grouping of objects. *(Number Relationships & Operations)*
9. Give up to 5 items when requested.	Recognizes numbers and quantities in the everyday environment. *(Number Concepts & Quantities)**
	Identifies the new number created when numbers are combined or separated. *(Number Relationships & Operations)*
STANDARD 2 — Shapes/Geometry Through their explorations, play, and social interactions, children identify and describe simple geometric shapes (circle, triangle, rectangle) and show an awareness of their positions in relation to other objects.	**Domain: Mathematics Knowledge & Skills** **Domain Element:** **Geometry & Spatial Sense:** The understanding of shapes, their properties, and how objects are related to one another.
Benchmarks	**Examples**
1. Recognize and name circle, triangle and rectangle (which includes square).	Recognizes and names common shapes, their parts, and attributes. *(Geometry & Spatial Sense)*
2. Build and describe two-dimensional shapes, such as making circles and triangles with blocks and play dough.	
3. Recognize that a shape remains the same shape when it changes position.	

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4. Sort and match objects with the same shape and size, and lay an object of the same shape and size on top of another to show they are the same.	Compares objects in size and shape. *(Geometry & Spatial Sense)*
5. Make a picture by combining shapes.	Combines and separates shapes to make other shapes. *(Geometry & Spatial Sense)**
6. Take a shape apart (decompose) to make new shapes, such as finding two triangles in a square.	Combines and separates shapes to make other shapes. *(Geometry & Spatial Sense)**
7. Demonstrate and begin to use the language of the relative position of objects in the environment and play situations, such as up, down, over, under, top, bottom, inside, outside, in front, behind, between, next to.	Understands directionality, order, and position of objects, such as up, down, in front, behind. *(Geometry & Spatial Sense)*
8. Create two-dimensional shapes and three-dimensional structures that have symmetry	
STANDARD 3 — Measurement Through their explorations, play, and social interactions, children identify and compare the attributes of length, volume, weight, time, and temperature and use the tools needed to measure them.	**Domain: Mathematics Knowledge & Skills** **Domain Element:** **Measurement & Comparison:** The understanding of attributes and relative properties of objects as related to size, capacity, and area.
Benchmarks	**Examples**
1. Compare length and other attributes of objects, using the terms bigger, longer, and taller.	Compares objects using attributes of length, weight and size (bigger, longer, taller, heavier). *(Measurement & Comparison)**
2. Compare two objects by placing one on top of another and indicate which object takes up more space.	Compares objects using attributes of length, weight and size (bigger, longer, taller, heavier). *(Measurement & Comparison)**
3. Arrange objects in order according to characteristics or attributes, such as height.	Orders objects by size or length. *(Measurement & Comparison)*
4. Identify and use measurement tools, such as ruler, scales, measuring cups, thermometer, clock, and calendar.	Uses nonstandard and standard techniques and tools to measure and compare. *(Measurement & Comparison)*

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STANDARD 4 — Making Sense of Data Through their explorations, play, and social interactions, children classify, organize, represent, and use information to ask and answer questions.	**Domain: Mathematics Knowledge & Skills** **Domain Elements:**
Benchmarks	**Examples**
1. Sort objects onto a large graph according to one attribute, such as size, shape or color.	
2. Name the category that has the most, least, or the same on a large graph.	
3. Gather information to answer questions of interest.	
STANDARD 5 — Patterns/Algebra Through their explorations, play, and social interactions, children identify, repeat, and describe simple patterns using concrete objects.	**Domain: Mathematics Knowledge & Skills** **Domain Element:** **Patterns:** The recognition of patterns, sequencing, and critical thinking skills necessary to predict and classify objects in a pattern.
Benchmarks	**Examples**
1. Sort, classify, and order objects by size and other properties.	Sorts, classifies, and serializes (puts in a pattern) objects using attributes, such as color, shape, or size. *(Patterns)*
2. Identify simple patterns in the context of play or daily activities (such as "block, car, block, car") and use patterns to describe relationships between objects ("car follows block").	Recognizes, duplicates, and extends simple patterns. *(Patterns)**
3. Predict, repeat, and extend a simple pattern in the context of play or daily activities ("dish, spoon, dish, spoon").	Recognizes, duplicates, and extends simple patterns. *(Patterns)** Creates patterns through the repetition of a unit. *(Patterns)*

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South Dakota Early Learning Guidelines and Kindergarten Common Core State Standards for Mathematics MATHEMATICS	
South Dakota Early Learning Guidelines	**Kindergarten Common Core State Standards for Mathematics**
STANDARD 1 — Number Sense and Operations Through their explorations, play, and social interactions, children count with understanding and use numbers to tell how many, describe order, and compare.	**Standards Area: Counting and Cardinality**
Benchmarks	**Grade-Specific Standards**
1. Count by ones to 10 and higher.	1. Count to 100 by ones and by tens. *(Counting and Cardinality)* 2. Count forward beginning from a given number within the known sequence (instead of having to begin at 1). *(Counting and Cardinality)*
2. Count the number of items in a group of up to 10 objects and know that the last number tells how many.	4.a. When counting objects, say the number names in the standard order, pairing each object with one and only one number name and each number name with one and only one object. *(Counting and Cardinality)* 4.b. Understand that the last number name said tells the number of objects counted. The number of objects is the same regardless of their arrangement or the order in which they were counted. *(Counting and Cardinality)* 5. Count to answer "how many?" questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or as many as 10 things in a scattered configuration; given a number from 1-20, count out that many objects. *(Counting and Cardinality)*

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3. Verbally count backward from 5.	
4. Look at a group of up to 4 objects and quickly see and say the number of objects.	
5. Recognize and name numerals 1 to 5.	3. Write numbers from 0 to 20. Represent a number of objects with a written numeral 0-20 (with 0 representing a count of no objects). *(Counting and Cardinality)* 7. Compare two numbers between 1 and 10 presented as written numerals. *(Counting and Cardinality)*
6. Compare two groups (containing up to 5 objects each) and describe them using comparative words, such as more, less, fewer, or equal.	6. Identify whether the number of objects in one group is greater than, less than, or equal to the number of objects in another group, e.g., by using matching and counting strategies (Include groups with up to ten objects). *(Counting and Cardinality)*
7. Use and understand the terms first, last, and first through fifth.	
8. Separate a collection of 10 items into 2 equal groups.	
9. Give up to 5 items when requested.	
	4.c. Understand that each successive number name refers to a quantity that is one larger. *(Counting and Cardinality)*
	1. Represent addition and subtraction with objects, fingers, mental images, drawings, sounds (e.g., claps), acting out situations, verbal explanations, expressions, or equations. (Drawings need not show details, but should show the mathematics in the problem.) *(Operations and Algebraic Thinking)*
	2. Solve addition and subtraction word problems, and add and subtract within 10, e.g., by using objects or drawings to represent the problem. *(Operations and Algebraic Thinking)*

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	3. Decompose numbers less than or equal to 10 into pairs in more than one way, e.g.. by using objects or drawings, and record each decomposition by a drawing or equation (e.g., 5 = 2 + 3 and 5 = 4 + 1). *(Operations and Algebraic Thinking)*
	4. For any number from 1 to 9, find the number that makes 10 when added to the given number, e.g., by using objects or drawings, and record the answer with a drawing or equation. *(Operations and Algebraic Thinking)*
	5. Fluently add and subtract within 5. *(Operations and Algebraic Thinking)*
	1. Compose and decompose numbers from 11 to 19 into ten ones and some further ones, e.g., by using objects or drawings, and record each composition or decomposition by a drawing or equation (e.g., 18 = 10 + 8); understand that these numbers are composed of ten ones and one, two, three, four, five, six, seven, eight, or nine ones. *(Number and Operations in Base Ten)*
STANDARD 2 — Shapes/Geometry Through their explorations, play, and social interactions, children identify and describe simple geometric shapes (circle, triangle, rectangle) and show an awareness of their positions in relation to other objects.	**Standards Area: Geometry**
Benchmarks	**Grade-Specific Standards**
1. Recognize and name circle, triangle and rectangle (which includes square).	1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. *(Geometry)**
2. Build and describe two-dimensional shapes, such as making circles and triangles with blocks and play dough.	5. Model shapes in the world by building shapes from components (e.g., sticks and clay balls) and drawing shapes. *(Geometry)*
3. Recognize that a shape remains the same shape when it changes position.	2. Correctly name shapes regardless of their orientations or overall size. *(Geometry)*

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4. Sort and match objects with the same shape and size, and lay an object of the same shape and size on top of another to show they are the same.	4. Analyze and compare two- and three-dimensional shapes, in different sizes and orientations, using informal language to describe their similarities, differences, part (e.g., number of sides and vertices/"corners") and other attributes (e.g., having sides of equal length). *(Geometry)*
5. Make a picture by combining shapes.	6. Compose simple shapes to form larger shapes. For example, "Can you join these two triangles with full sides touching to make a rectangle?" *(Geometry)*
6. Take a shape apart (decompose) to make new shapes, such as finding two triangles in a square.	
7. Demonstrate and begin to use the language of the relative position of objects in the environment and play situations, such as up, down, over, under, top, bottom, inside, outside, in front, behind, between, next to.	1. Describe objects in the environment using names of shapes, and describe the relative positions of these objects using terms such as above, below, beside, in front of, behind, and next to. *(Geometry)**
8. Create two-dimensional shapes and three-dimensional structures that have symmetry	3. Identify shapes as two-dimensional (lying in a plane, "flat") or three-dimensional ("solid"). *(Geometry)*
STANDARD 3 — Measurement Through their explorations, play, and social interactions, children identify and compare the attributes of length, volume, weight, time, and temperature and use the tools needed to measure them.	**Standards Area: Standards Area: Measurement and Data**
Benchmarks	**Grade-Specific Standards**
1. Compare length and other attributes of objects, using the terms bigger, longer, and taller.	1. Describe measurable attributes of objects, such as length or weight. Describe several measurable attributes of a single object. *(Measurement and Data)* 2. Directly compare two objects with a measurable attribute in common, to see which object has "more of" / " less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. *(Measurements and Data)* *

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2. Compare two objects by placing one on top of another and indicate which object takes up more space.	2. Directly compare two objects with a measurable attribute in common, to see which object has "more of" / " less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. *(Measurements and Data)**
3. Arrange objects in order according to characteristics or attributes, such as height.	2. Directly compare two objects with a measurable attribute in common, to see which object has "more of" / " less of" the attribute, and describe the difference. For example, directly compare the heights of two children and describe one child as taller/shorter. *(Measurements and Data)**
4. Identify and use measurement tools, such as ruler, scales, measuring cups, thermometer, clock, and calendar.	
STANDARD 4 — Making Sense of Data Through their explorations, play, and social interactions, children classify, organize, represent, and use information to ask and answer questions.	**Standards Area: Standards Area: Measurement and Data**
Benchmarks	**Grade-Specific Standard**
1. Sort objects onto a large graph according to one attribute, such as size, shape or color.	3. Classify objects into given categories; count the numbers of objects in each category and sort the categories by count (Limit category counts to be less than or equal to 10). *(Measurement and Data)*
2. Name the category that has the most, least, or the same on a large graph.	
3. Gather information to answer questions of interest.	

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STANDARD 5 — Patterns/Algebra Through their explorations, play, and social interactions, children identify, repeat, and describe simple patterns using concrete objects.	**Standards Area: Operations and Algebraic Thinking** **Standards Area: Number and Operations in Base Ten**
Benchmarks	**Grade-Specific Standards**
1. Sort, classify, and order objects by size and other properties.	
2. Identify simple patterns in the context of play or daily activities (such as “block, car, block, car”) and use patterns to describe relationships between objects (“car follows block”).	
3. Predict, repeat, and extend a simple pattern in the context of play or daily activities (“dish, spoon, dish, spoon”).	

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