Unpacked South Dakota State Mathematics Standards

Purpose: In order for students to have the best chance of success, standards, assessment, curriculum resources, and instruction must be aligned in focus, coherence, and rigor. Unpacked standards documents are intended to help align instruction to the focus, coherence, and rigor of the South Dakota State Mathematics Standards. The standards have been organized in clusters as they are not so much built from topics, but rather woven out of progressions. Not all content in a given grade is emphasized equally in the mathematics standards. Some clusters require greater emphasis than others based on the depth of the ideas, the time that they take to master, and/or their importance to future mathematics or the demands of college and career readiness. To say that some things have greater emphasis is not to say that anything in the standards can safely be neglected in instruction. Neglecting standards will leave gaps in student skill and understanding and may leave students unprepared for the challenges of a later grade.

Domain: Counting and Cardinality	Grade Level: Kindergarten

K.CC.B Cluster: Count to tell the number of objects.

Students move from rote counting to finding the number of objects in a set. Cardinality refers to the actual count or number of items in a set. As students show proficiency with rote counting within a range of numbers, they can begin to find the number of objects in a set within that range.

**This is a MAJOR cluster. *Students should spend the large majority of their time (65-85%) on the major work of the grade. Supporting work and, where appropriate, additional work should be connected to and engage students in the major work of the grade.*

K.CC.4 Understand the relationship between numbers and quantities; connect counting to cardinality.
   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. (one-to-one correspondence)
   b. Understand that the last number name said tells the number of objects counted. (cardinality) The number of objects is the same regardless of their arrangement or the order in which they were counted.
   c. Understand that each successive number name refers to a quantity that is one larger.

K.CC.5 Count to answer "how many?"
   a. When counting, answer questions about as many as 20 things arranged in a line, a rectangular array, or a circle, or and as many as 10 things in a scattered configuration.
   b. Given a number(s) from 1–20, count out that many objects.

Aspects of Rigor for Student Learning: (Conceptual, Procedural, and/or Application)

Conceptual Understanding	*Procedural Fluency*	*Application*
Attend to one-to-one correspondence while keeping track of objects that have and have not been counted **(K.CC.4a)** Understand that the last number said represents the total number of objects in the group **(K.CC.4b)** Understand that the number of objects in a group does not change when objects are moved or rearranged. **(K.CC.4b)** Understand that each number said, in sequence, represents a quantity that is one more than the previous number **(K.CC.4c)**		

Teacher Note: Students should begin with counting physical objects, progress to pictures, and then connect the physical representations to the numeral.		
	Count objects from 1-20 in various arrangements and recall the number when asked "how many"**(K.CC.5a)** Count out a set of objects when given a number from 1-20 (without exceeding the given number) **(K.CC.5b)** **Teacher Note:** In this cluster, students practice counting. Subitizing is different than counting. Over time, students will learn to subitize the number of dots on regular dot patterns and arrangements. (See definition of subitizing below)	

Enacting the Mathematical Practices - Evidence of Students Engaging in the Practices

1. **Make sense of problems and persevere in solving them.**
   - Learners persevere to count to higher numbers
   - Learners maintain one-to-one counting
2. **Reason abstractly and quantitatively.**
   - Represent sets of objects with the number of counts
3. **Construct viable arguments and critique the reasoning of others.**
4. **Model with mathematics.**
   - Count objects to tell the number items in a set
   - Count out a number of items of a given count
5. **Use appropriate tools strategically.**
   - Use hundreds charts, number lines, and other supports to learn the forward and backward number word sequence
6. **Attend to precision.**
   - Learners develop the vocabulary of counting and learn the number names
7. **Look for and make use of structure.**
   - Learners begin to use the pattern of ones and decades when verbally counting by ones
   - Learners will use their knowledge of the forward number sequence to count backward
   - Learners use the structure of the oral counting series to find the number of items in a set
8. **Look for and express regularity in repeated reasoning.**

Vertical and Horizontal Coherence and Learning Progressions

Previous Learning Connections	*Current Learning Connections*	*Future Learning Connections*
Early childhood learning guidelines address: Count the number of items in a group of up to 10 objects and know that the last number tells how many Give up to 5 items when requested	Learners will continue to work with concepts of number meaning in the domains of **Order and Algebraic Thinking** as well as **Number and Operations in Base Ten**. Learners will compare the size of sets to tell greater than, less than, or the	These understandings developed in kindergarten will support the following learning in first grade: Extend the counting sequence, number recognition and writing to 120

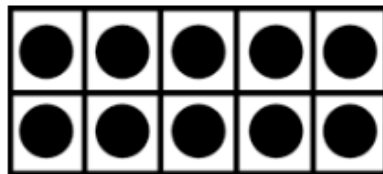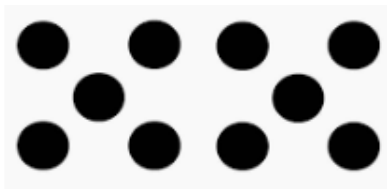|	same. Written numerals are also compared. **(K.CC.6, 7)**	Counting strategies to add and subtract within 20

Vocabulary *(Key Terms Used by Teachers and Students in this Cluster):*

- Set
- group

Relevance, Explanations, and Examples:

<u>Subitizing-</u> is a way of instantly counting. Getting to the cardinal number of a set (how many) without without going through the ordinals (counting each one's position). Eg. knowing the value of the dot pattern on dice without counting.

Regular arrangements of items.

Irregular arrangements of items.