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.*

<table>
<tr><td colspan="2">Domain: Measurement and Data</td><td>Grade Level: Kindergarten</td></tr>
<tr><td colspan="3">K.MD.A Cluster: Describe and compare measurable attributes.

This cluster will focus on measuring attributes, comparing and classifying/sorting objects. Kindergarteners will learn that an object has different attributes that can be measured. Students will also describe the objects they measure with vocabulary terms.</td></tr>
<tr><td colspan="3">**This is an ADDITIONAL 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.MD.1 Describe measurable attributes of a single object or objects, such as length, weight, or size

K.MD.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</td></tr>
<tr><td colspan="3">Aspects of Rigor for Student Learning: (Conceptual, Procedural, and/or Application)</td></tr>
<tr><td>Conceptual Understanding</td><td>Procedural Fluency</td><td>Application</td></tr>
<tr><td>Understand that an object(s) can be measured by its attributes (Length, weight) (K.MD.1)</td><td></td><td></td></tr>
<tr><td>Understand that two objects may have different amounts of the same attribute (K.MD.2)

Compare the differences in the amounts of an attribute (K.MD.2)

Describe which object has more or less of an attribute using vocabulary terms such as taller, longer, shorter, heavier, lighter, and similar descriptive terms (K.MD.2)

Teacher Note:
Students need ample experiences with objects in order to discover the importance of lining up the ends of objects in order to have an accurate measurement *see example 1</td><td></td><td></td></tr>
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Enacting the Mathematical Practices - Evidence of Students Engaging in the Practices

1. **Make sense of problems and persevere in solving them.**
2. **Reason abstractly and quantitatively.**
   - Learners will use reasoning to compare objects
3. **Construct viable arguments and critique the reasoning of others.**
   - Learners will describe measurable attributes and reason about how to compare objects
4. **Model with mathematics.**
5. **Use appropriate tools strategically.**
6. **Attend to precision.**
   - Learners attend to precision by aligning endpoints when comparing length
   - Learners will use clear language to describe attributes and comparisons
7. **Look for and make use of structure.**
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: Compare length and other attributes of objects, using the terms bigger, longer, and taller Compare two objects by placing one on top of another and indicate which objects takes up more space Arrange objects in order according to characteristics or attributes, such as height	Classify objects into given categories; count the numbers of objects in each category and sort the categories by count **(K.MD.3)** Students will use their knowledge of analyzing, describing, and comparing shapes to investigate measurable attributes **(K.G.)**	These understandings developed in kindergarten will support the following learning in first grade: Order three objects by length; compare the lengths of two objects indirectly by using a third object

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

- Measure
- Attribute
- Size
- Big
- Small
- Length
- Long
- Short
- Height
- Tall
- Weight
- Heavier
- Lighter
- Compare
- More of
- Less of

Relevance, Explanations, and Examples:

Example 1

Sticks whose endpoints are not aligned

When shown this figure and asked which is "the longest stick," students may point to *A* because it "sticks out the farthest." Similarly, they may recognize a 12-inch vertical line as "tall" and a 12-inch horizontal line as "long" but not recognize that the two are the same length.