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: Measurement and Data	Grade Level: 2

2.MD.D Cluster: Represent and Interpret Data

Learners generate measurement data involving length, and translate that information into line plots using whole number intervals. Learners also create picture and bar graphs to represent data from categories. They use this information to solve simple problems.

This is a SUPPORTING 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.*

 2.MD.9 Generate measurement data by measuring lengths of several objects to the nearest whole unit, or by making repeated measurements of the same object. Show the measurements by making a line plot, where the horizontal scale is marked off in whole-number units.

2.MD.10 Draw a picture graph and a bar graph (with single-unit scale) to represent a data set with up to four categories. Solve simple put-together, take-apart, and compare problems using information presented in a bar graph.

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

Conceptual Understanding	*Procedural Fluency*	*Application*
	Measure lengths accurately and show the data using a line plot **(2.MD.9)**	
	Draw a picture and/or bar graph to represent a given a set of data **(2.MD.10)**	Interpret data from bar graphs to solve simple word problems **(2.MD.10)**

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.**
    - Make sense of quantities and their relationships**.**
3. **Construct viable arguments and critique the reasoning of others.**
4. **Model with mathematics.**
    - Organize and represent data.
5. **Use appropriate tools strategically.**
6. **Attend to precision.**
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*
Learners develop the skills to accurately measure objects using non-standard units of measure. **(1.MD.2)** Learners organize and represent data in ways that make sense to them. They ask and answer questions about the data. **(1.MD.4)**	Learners solve simple put-together, take-apart, and compare problems using information presented in a bar graph. **(2.OA.1)** Learners connect to other measurement work, as the count scale in a bar graph is a segment of a number line diagram and can be used to represent sums and differences. **(2.MD.6)**	Learners collect and represent measurement data to include fractions. **(3.MD.4)** Learners make thoughtful design choices about data displays. **(MP5)**
Vocabulary (Key Terms Used by Teachers and Students in this Cluster):		
- Categorical Data - Numerical Data - Bar Graph - Line Plot - Picture Graph	- Scale - Set	
Relevance, Explanations, and Examples:		

In second grade, learners begin to use and apply conventions of data representation. For example:
- Bar graphs should be oriented both horizontally and vertically.
- When drawing bar graphs on grid paper, the tick marks and numbers should be drawn on the lines, as opposed to in the spaces between the lines. When drawing picture graphs, the pictures representing the objects should be drawn in the squares of the grid paper.
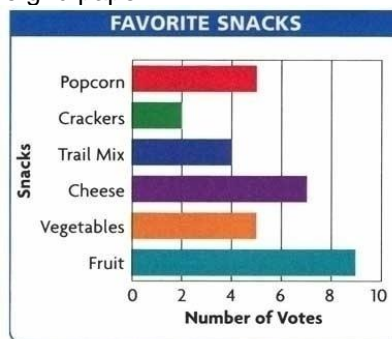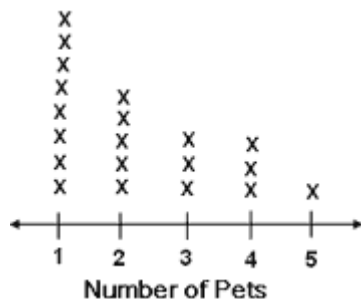
- Learners can create line plots either using given data or data they have generated themselves.
- In a line plot, all numbers must appear within the range of data, even if a number is not present in the data set.