Cluster 7: Data and Two Step Problem Solving

Duration: 1-2 weeks

Content Standards:
This list includes standards addressed in this cluster, but not necessarily mastered, since all standards are benchmarks for the end of the year. Note strikethroughs and recommendations in the Important Considerations section for more information.

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

NC.2.OA.1
Represent and solve addition and subtraction word problems, within 100, with unknowns in all positions, by using representations and equations with a symbol for the unknown number to represent the problem, when solving:
- One-Step problems:
  - Add to/Take from - Start Unknown
  - Compare - Bigger Unknown
  - Compare - Smaller Unknown
- Two-Step problems involving single digits:
  - Add to/Take from - Change Unknown
  - Add to/Take From - Result Unknown

Mathematical Practices:
1. Make Sense of Problems and Persevere in Solving Them
2. Reason Abstractly and Quantitatively
3. Construct Viable Arguments and Critique the Reasoning of Others
4. Model with Mathematics
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

What is the Mathematics?
In this cluster, students work with the process of data collection as they pose relevant questions, collect data to answer their questions, organize data, and interpret the results. Then, students solve one and two step problems related to the collected data.

In second grade, students work with both measurement data and categorical data. Measurement data should be based on standard units of linear measure from the previous cluster (e.g., pencil lengths, shoe lengths). With categorical data, objects are sorted into non-numeric categories (e.g., flavors of ice cream, ways students get home from school).

Important Considerations
- Two step problems are introduced here and continue with money in the next cluster.
- The nature of data lends itself to multi-step problems. Multiple questions can be asked about a data set such as how many more, how many less, and how many altogether, etc.

- Students discuss with each other what they notice about the information from a particular graph (Ex. What is this graph telling us?).
- Information on graphs can be combined to further describe data or to make decisions based on the data. (Ex. Bring lunch from home, Lunch from home but buy milk at school, lunch at school -- How many cartons of milk will the cafeteria need?)