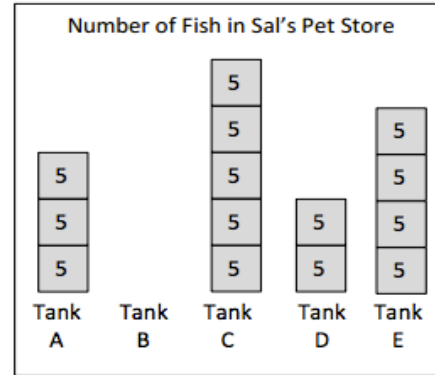## Collecting and Displaying Data

In Module 6, we build on Grade 2 concepts about data, graphing, and line plots. We focus on generating and analyzing different types of data. By the end of the module, students are working with a mixture of scaled picture graphs, bar graphs, and line plots to problem solve using categorical and measurement data.

Number of Fish in Sal's Pet Store

A vertical tape diagram, similar to a bar graph

Number of Children in Third-Grade Families

A line plot

Key Terms and Ideas

Axis: vertical or horizontal scale in a graph

Bar graph: graph generated from categorical data with bars to represent a quantity

Fraction: numerical quantity that is not a whole number, e.g., 1/3

Frequent: most common measurement on a line plot

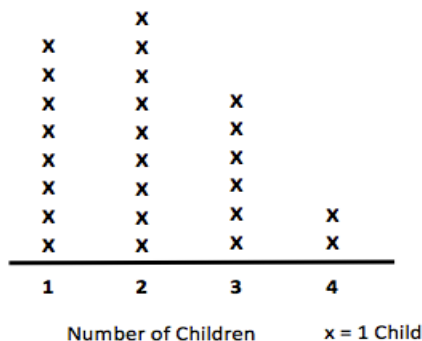**Line plot:** display of measurement data on a horizontal line

Measurement data: e.g., length measurements of a collection of pencils

Picture graph: graph generated from categorical data with graphics to represent a quantity

Scaled graphs: bar or picture graph in which the scale uses units with a value greater than 1

Survey : collecting data by asking a question and recording responses

What Came Before this Module:
Students extended and deepened understanding of fractions as equal parts of a whole, using area models and the number line.
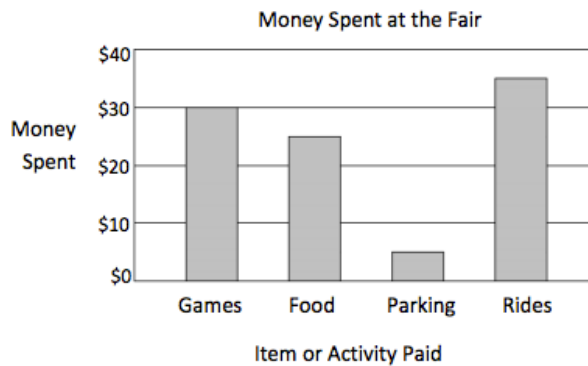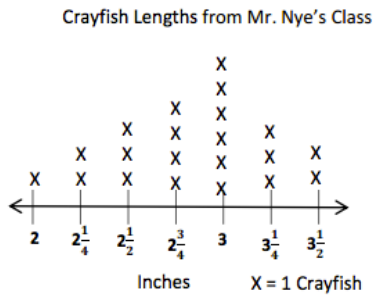
What Comes After this Module:
In Module 7, students get intensive practice with word problems, as well as hands-on investigation experiences with geometry and perimeter.

How You Can Help at Home:

- Ask your student to help interpret the data when you see simple graphs and charts in books, newspapers, or product packaging.

- Continue to practice and encourage measurement around the house, especially with inches, and parts of an inch.

Key Common Core Standards:

- *Represent and Interpret Data.*

  - Draw a scaled picture graph and a scaled bar graph to represent a data set with several categories.

  - Generate measurement data by measuring lengths using rulers marked with halves and fourths of an inch. Show the data by making a line plot, where the horizontal scale is marked off in appropriate units.

Crayfish Lengths from Mr. Nye's Class

Inches   X = 1 Crayfish

Money Spent at the Fair

Item or Activity Paid

Spotlight on Math Skills:

Displaying Data

Students will work with data in various ways in *A Story of Units*.

Students will learn when a line plot or a bar graph is a more appropriate way to display data.

A Story of Units exposes students to several key skills that will be used throughout the elementary years.

Learning how to gather, record, and display data is an important group of mathematical skills that students will use their whole lives. Our work with data in *A Story of Units* began in kindergarten with simple bar graphs of categorical data. Now, we gather more complex data, both categorical and measurement, and display it in more sophisticated ways.

This module will also include a discussion of when either bar graphs or line plots are a good choice to display a particular set of data. Students will learn that bar graphs are used to compare things between different groups, and line plots are used to show frequency of data (how many times a certain thing happens) along a number line.

Sample Problem from Module 6:
(Example taken from Module 6, Lesson 6)

Using the line plot to the right, students answer various questions:

1. How many caterpillars did the class measure? How do you know?
2. Cara says that there are more caterpillars $3\frac{3}{4}$ centimeters long than caterpillars that are $3\frac{2}{4}$ and $4\frac{1}{4}$ centimeters long combined. Is she correct?

Lengths of Caterpillars

Length in Centimeters   X = 1 caterpillar