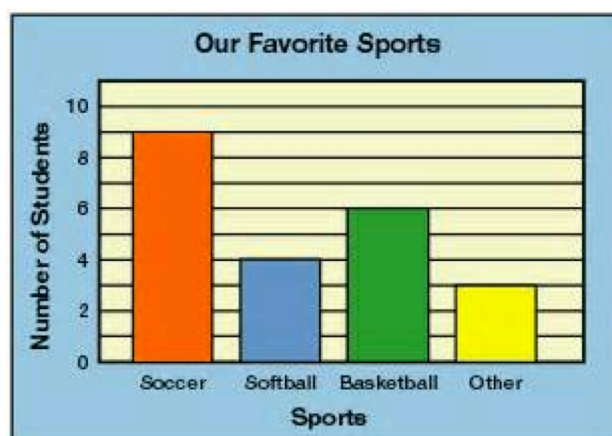# Explore Graphing with Sir Cumference and Lady Di of Ameter

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Choosing Appropriate Graphs for Data

Children's literature can be used as a springboard into mathematical concepts. A great springboard into graphing data is the book:

"Sir Cumference and the Off-the-Charts Dessert: A Math Adventure"
by Cindy Neuschwander

Data may be either **categorical** or **numerical**. **Categorical data** are data that represent characteristics of objects or individuals in groups (or categories). **Numerical data** are data collected on numerical variables.

Use a **bar graph** to compare numbers of data items that are grouped into categories (categorical data). The order of the categories does not matter.

Favorite Fruit
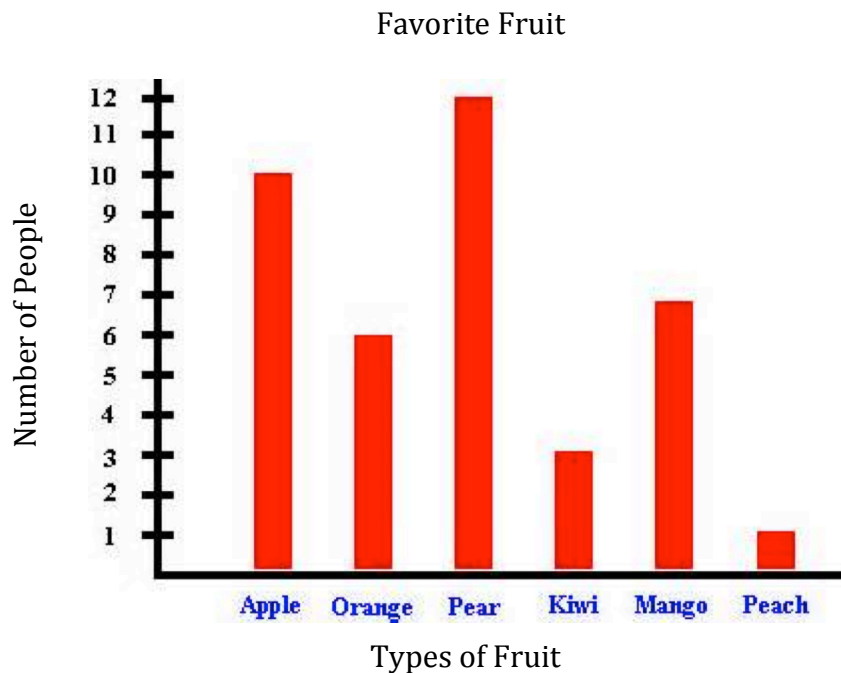
Use a **tally** or **frequency table** to show how many times data categories or ranges occur. They are useful for organizing data to prepare for graphing.

Favorite Snacks in 4th Grade		
Snack	**Tally**	**Frequency**
Popcorn	ⅢⅡ	5
Crackers	‖	2
Trail Mix	‖‖	4
Cheese	ⅢⅡ ‖	7
Vegetables	ⅢⅡ	5
Fruit	ⅢⅡ ‖‖	9

Use a **dot plot (line plot)** to show the shape of a data set (numerical data) by stacking X's (or dots) above each data value on a number line. Several features of the data become obvious with a dot plot. **Outliers**, **clusters**, and **gaps** are apparent. An **outlier** is a data point whose value is significantly greater or less than other values. A **cluster** is an isolated group of points. A **gap** is a large space between points.

Ages of Children in Years
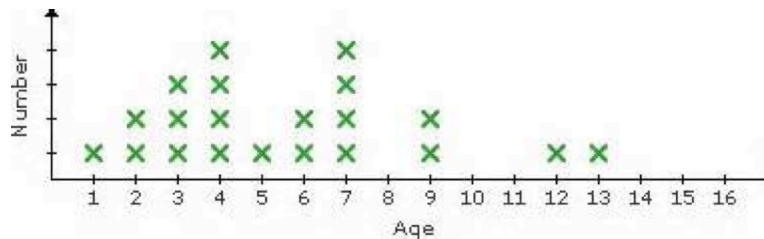
Use a **circle graph** or **pie chart** to show the division of a whole into parts (categorical data). You may use a legend instead of labeling the sectors on the circle graph.