

Learning Objectives

- 1) Understand that a graph is a tool that uses pictures, shapes, and colors to convey information regarding the amount of something. One can also use graphs to compare the amount of a one thing to the amount of another thing.
- 2) Know how to build simple graphs (perform the following process with the class). Let's say Molly wants to use a graph to compare the types of pets that her classmates have.
 - a) First, Molly needs to gather information from her classmates. She finds that, collectively, her classmates have 9 dogs, 7 cats, 3 mice, and 2 snakes. This information can now be used to make a graph.
 - b) A pictograph uses pictures to represent amounts of things. To relate the class information using a pictograph, first, Molly will create symbols to represent each of the different types of pets. For example, Molly may draw cat faces, or she may simply draw sets of whiskers. Next, Molly will place each of the cat symbols in a line on the graph; the number of cat symbols she places on the graph depends on the number of cats there are (she will place 7 cat symbols on the graph). Molly should perform the same process for each of the other types of pets.
 - c) A bar graph uses bars of color to represent amounts of things. To relate the class information using a bar graph, Molly will place a specific number of blocks in a line on the graph for each type of pet. For example, there are 7 cats, so she will place 7 blocks on the graph. When these blocks are connected, they appear to be one solid bar; Molly will also need to note the amount each length represents. In order to tell what type of pet each bar represents, Molly can simply label the bars, or she can assign each

- d) It is important that Molly place a key on her graphs to inform the reader what each symbol (pictograph) or what each color (bar graph) stands for.
- e) Molly will also place a title on her graph to convey the purpose of the graph to the reader.
- f) Note that the symbols or bars on a graph may be either horizontal or vertical.
- 3) Understand how to interpret pictographs and bar graphs.
 - a) What is the favorite pet in Molly's class? On the pictograph, one can identify the pet that has the most symbols; on the bar graph, one can simply identify the longest bar. The dog is the favorite pet in Molly's class.
 - b) How many mice are there? On the pictograph, one can count the number of mice symbols; on the bar graph, one can simply find the amount that the particular bar's length represents. There are 3 mice.

Suggested Activities

- 1) **Shoe Graph:** Have students sit close together in a circle. Ask the students to remove their shoes and place them in front. Look at the shoes. Put all tennis shoes in one pile, all sandals in another, all oxfords in another, etc. Make a bar graph with the different kinds of shoes in the class. Students should then draw the graph and save their drawings for future reference.
- 2) ****Edible:** As a special treat, give each student different colors of M&M's (or other colorful

food). As a class, graph favorite pets (or another graph with several variables). Let each M&M represent one student response. Students should build either horizontal or vertical graphs with their M&M's. Have students work with other students to get the right combination of colors for their own graph (some students may have orange candy for cats, while others may choose brown). When all graphs are built and labeled (with key), students may eat their graphs!

- 3) **Add With Graphs:** Using graphs from the video, or your own, add the numbers on the graph to determine different kinds of data. For example, we know that three students have cats and four students have dogs, five students have lizards, and two have frogs. How many students have mammals (or how many have cats or dogs)? Have students think about how they would find that answer. Then add the two bars to show them that seven students own mammals.

**** Please note dietary restrictions of classroom students before distributing any food product.**

