

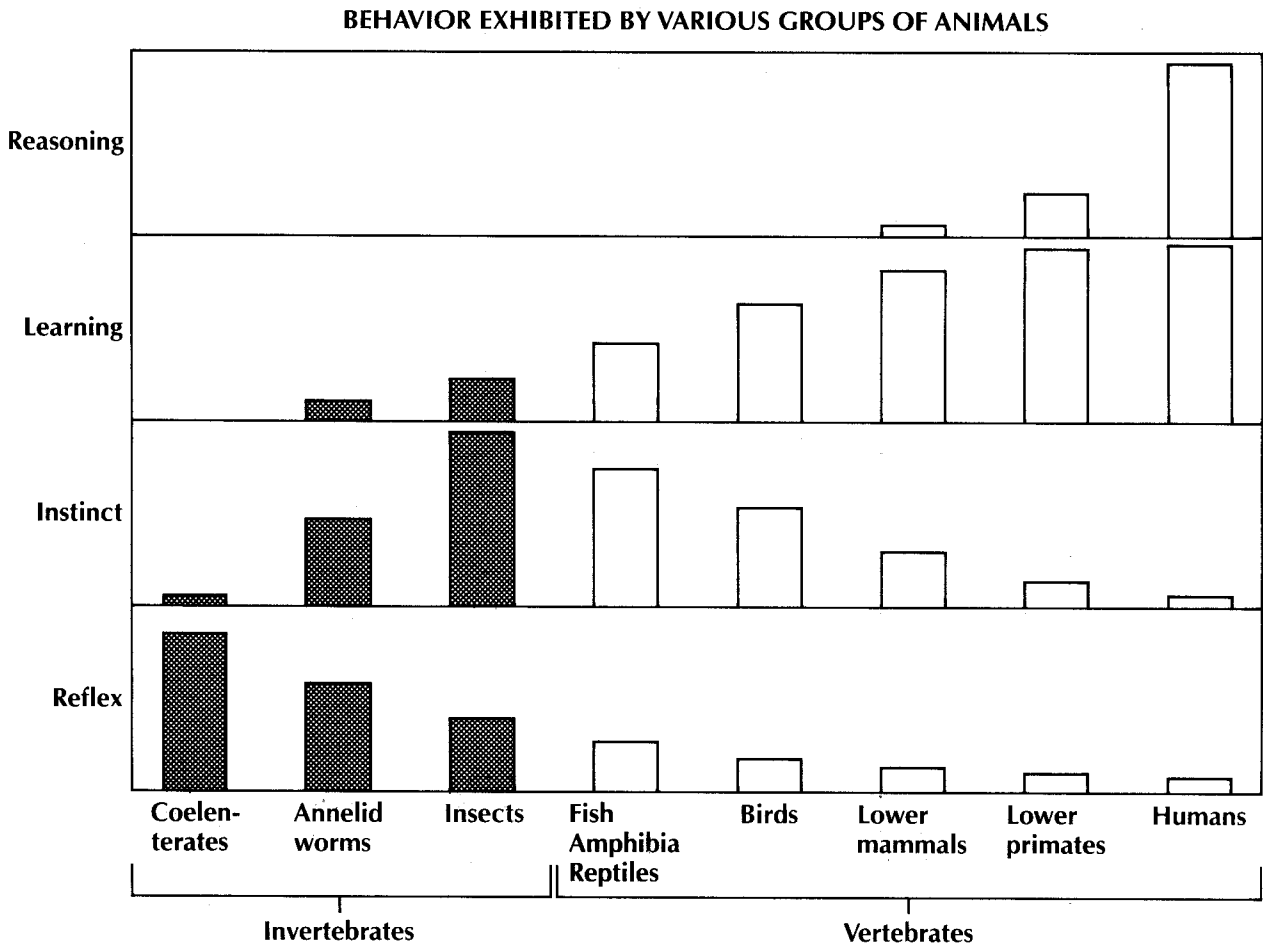
Graphic Organizing: Bar Graph

Textbooks often use a bar graph to present related data side by side so you can compare them. Each bar represents a different category of data. Sometimes the bars are divided into an upper and a lower segment, each of which represents a different subcategory of data. When the bars are displayed vertically, the categories are listed on the x-axis. You measure the bars using a scale on the y-axis. When the bars are displayed horizontally, the categories are listed on the y-axis and you measure the bars using a scale on the x-axis. When neither axis contains a scale, you interpret the graph by comparing the bars with one another. The taller or longer the bar, the larger the quantity it represents.

A bar graph can also track multiple categories of data over time by displaying the bars in groups, each of which represents a different year's worth of data. Such a graph includes a legend so you can tell apart the bars within each group.

Practice Interpreting a Bar Graph

The following bar graph compares the behaviors exhibited by eight different groups of animals.



Familiarize yourself with the bar graph, and then answer the following questions.

1. List the kinds of behavior that are compared in the graph. _____

2. Why are some of the bars shaded while others are not? _____

3. This graph does not contain a numerical scale on either the x- or the y-axis. How can you interpret the meaning of the bars? _____

4. Which group of animals exhibits the most instinctual behavior? _____
5. Which group of animals exhibits the least learning behavior? _____
6. Which group of animals exhibits the most reasoning behavior? _____
7. What pattern do you observe in the categories of behavior listed on the y-axis? _____

8. What differences do you observe between the vertebrate and the invertebrate animal groups? _____

9. What pattern do you observe as you look from left to right across the graph? _____

How to Construct a Bar Graph

1. Create the horizontal x-axis and the vertical y-axis that define the bottom and the left side of the graph.
2. If you want the bars to be vertical, create a scale on the y-axis. If you want them to be horizontal, create a scale on the x-axis. Make sure the scale will accommodate all of your data. For example, if the largest quantity you plan to represent with a bar is 52 units, consider creating a scale with 11 divisions, each of which is 5 units long. You could also create a scale with 6 divisions, each of which is 10 units long.
3. Number the divisions of the scale.
4. Label the scale. For example, if each bar on the graph will represent the mass of an organism measured in grams, label the scale *Mass (grams)*.
5. Draw and label the bars. If appropriate, fill in each bar with a pattern or color. Create a legend that identifies the category of data represented by each pattern or color.
6. Title the graph.

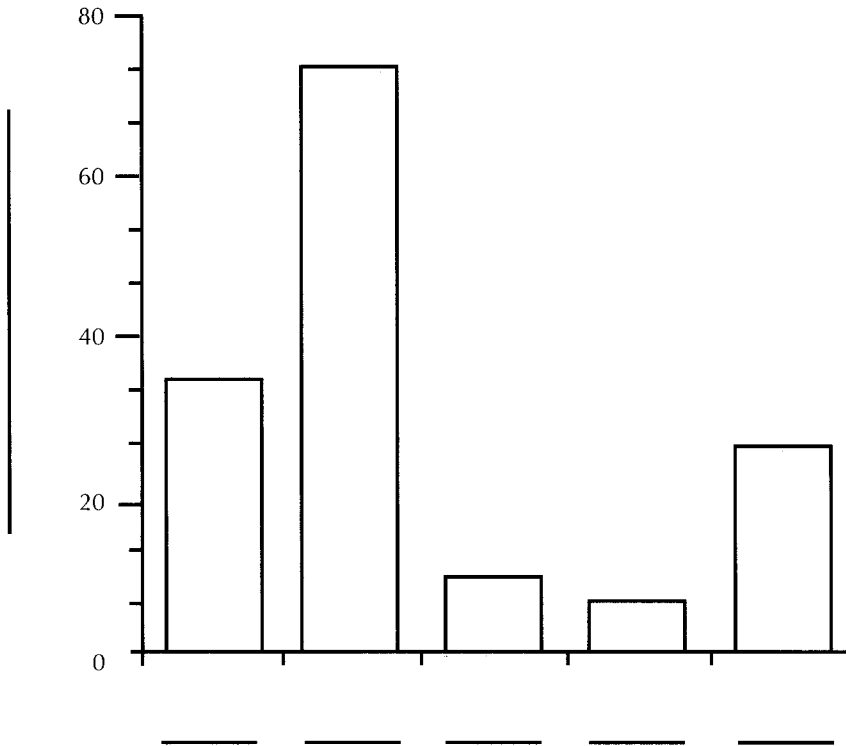
Practice Constructing a Bar Graph

1. Look over the following data:

ENDANGERED ANIMAL SPECIES IN THE UNITED STATES, 1979

Mammals	35
Birds	66
Reptiles	11
Amphibians	6
Fishes	28

2. Label the scale on the vertical axis of the graph below.
3. Decide which bar represents each endangered animal species and label it accordingly on the horizontal axis.
4. Give the graph a title.

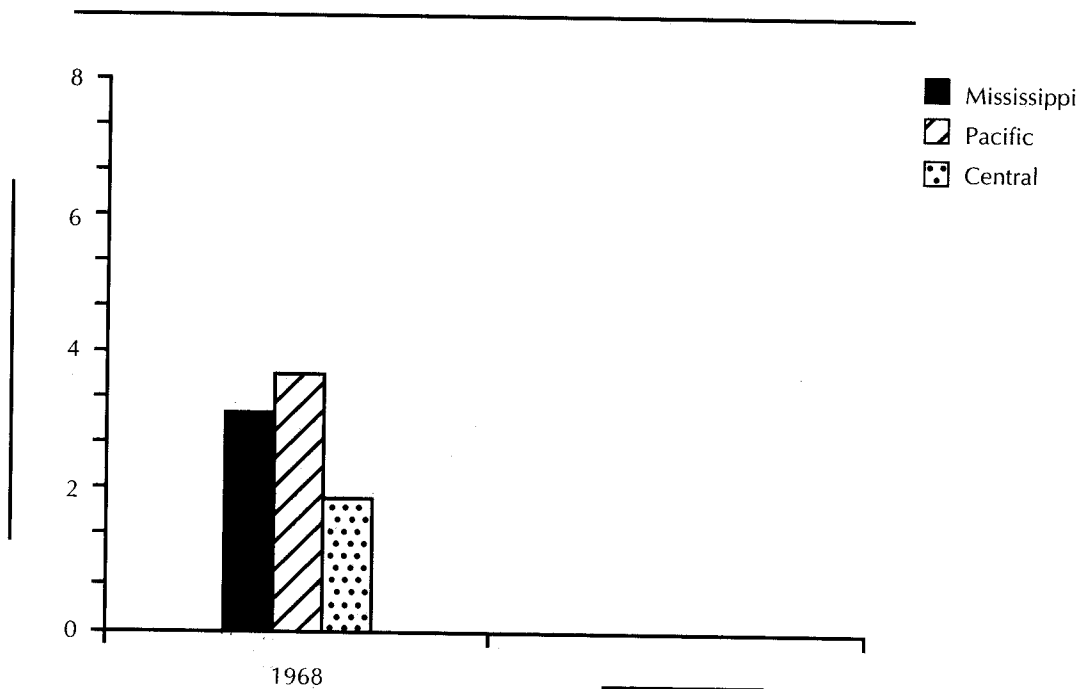


5. Look over the following data.

MILLIONS OF DUCKS HARVESTED BY FLYWAY, 1968 AND 1975

Flyway	1968	1975
Mississippi	3.2	7.5
Pacific	3.7	4.3
Central	1.8	3.0

6. On the graph below, construct a set of bars for the 1975 data. The 1968 bars are already in place. Be sure you display the 1975 bars in the same order.
7. Use the legend to fill in each 1975 bar with the appropriate pattern.
8. Label the 1975 group of bars.
9. Label the vertical scale. Be sure to include the units.
10. Give the graph a title.



More Practice

1. Look over the following data.

MOST FREQUENTLY OBSERVED BREEDING BIRD SPECIES, 1977

<i>Species</i>	<i>Mean Number Observed Per Route</i>
Red-Winged Blackbird	80
Starling	60
American Robin	37
Common Crow	31

2. Construct a bar graph using this data.

