STRATEGY 16

Interpreting Graphs

In textbooks, students often encounter information in the form of graphs. **Graphs** provide a quick impression of data. Using graphs to obtain information may be quicker and easier than drawing conclusions or making comparisons from written information. Graphs can make learning more meaningful and increase the comprehension of written words.

Graphs can be of several varieties, including line, bar, and circle. Different types of graphs are used to illustrate different types of data.

- A *line graph* contains one or more lines. Values are given along horizontal and vertical axes. A line graph is most often used to show how something has changed over a period of time.
- A *bar graph* displays bars vertically along a horizontal axis that runs along the bottom of the graph or it displays bars horizontally along a vertical axis on the left side of the graph. A bar graph often is used to make comparisons.
- A *circle graph* is used to illustrate parts of something to the whole. A circle graph, which usually contains percentages, is also called a *pie graph* since the parts illustrated symbolically represent the pieces of a pie. The whole circle represents 100 percent. Each part of a circle graph is referred to as a sector, section, or segment.

When reading a graph, students should notice

- the title. The title will tell them what the graph is about.
- the general parts of the graph. If students are "reading" a line or bar graph, they should identify the information on the vertical and horizontal axes. If students are "reading" a circle graph, they should identify the parts.
- the specific parts of the graph. If students are "reading" a line or bar graph, they should choose a point and state what that piece of information tells you. If they are "reading" a circle graph, they should choose a sector or piece.
- any trends.
- any information that they can develop into questions or use to answer questions about the data.

Interpreting Graphs

To Teach students to interpret graphs, use Selection 17 and Graphic Organizer 22. You may want to make a transparency of the graph to use as you lead a discussion of the questions in the left column.

1. Show students Selection 17.

2. Use the questions on Graphic Organizer 22, one at a time, to analyze the graph.
   a. What is the title of the graph?
   b. What do the vertical and horizontal axes tell you?
   c. Choose a point on the graph and tell what information is given.
   d. Ask students to list one trend that the data show.
   e. Ask students whether, according to the graph, males or females have the longer life expectancy?

3. Allow time for discussion of each question.

Analyzing a Graph

1. What is the title of the graph?
   Life Expectancy in the United States, by Gender, Selected Years, 1900-2000

2. What do the general parts of the graph tell you? (Answer all that are appropriate.)
   What does the vertical axis tell you?
   It identifies the age of the population.
   What does the horizontal axis tell you?
   It lists the years the data were taken.
   What do the sectors tell you?

3. Choose a point or piece on the graph and tell what information is given.
   Answers will vary but, for example, in 1940 the life expectancy of males was 55 years.

4. What trend does the graph show?
   Answers will vary but, for example, life expectancy has tended to increase over the years.

5. What other information does the graph give you?
   The graph also shows data for females.

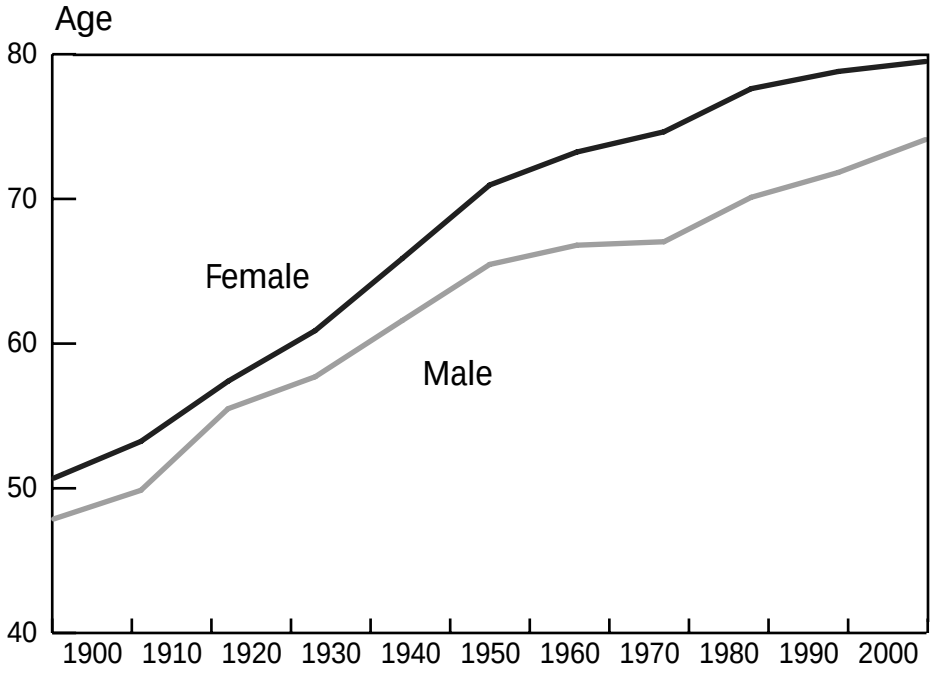
To apply the strategy, have students look at a variety of graphs, especially ones in the textbook. Have students repeat the process, using Graphic Organizer 22, to interpret data. (**Note:** You may want to give students specific questions about a given graph instead of asking them to respond to question 5 on the graphic organizer.)

To extend the strategy, use Graphic Organizer 22 and Selection 18 to interpret data from a bar and circle graph. You might also want to give students data and have them create graphs.

Interpreting Graphs

Selection 17

Life Expectancy in the United States, by Gender, Selected Years, 1900-2000



Source: AmeriStat, analysis of data from the National Center for Health Statistics

Graphic Organizer 22

Analyzing a Graph

1. What is the title of the graph?

2. What do the general parts of the graph tell you? (Answer all that are appropriate.)

   What does the vertical axis tell you?

   What does the horizontal axis tell you?

   What do the sectors tell you?

3. Choose a point or piece on the graph and tell what information is given.

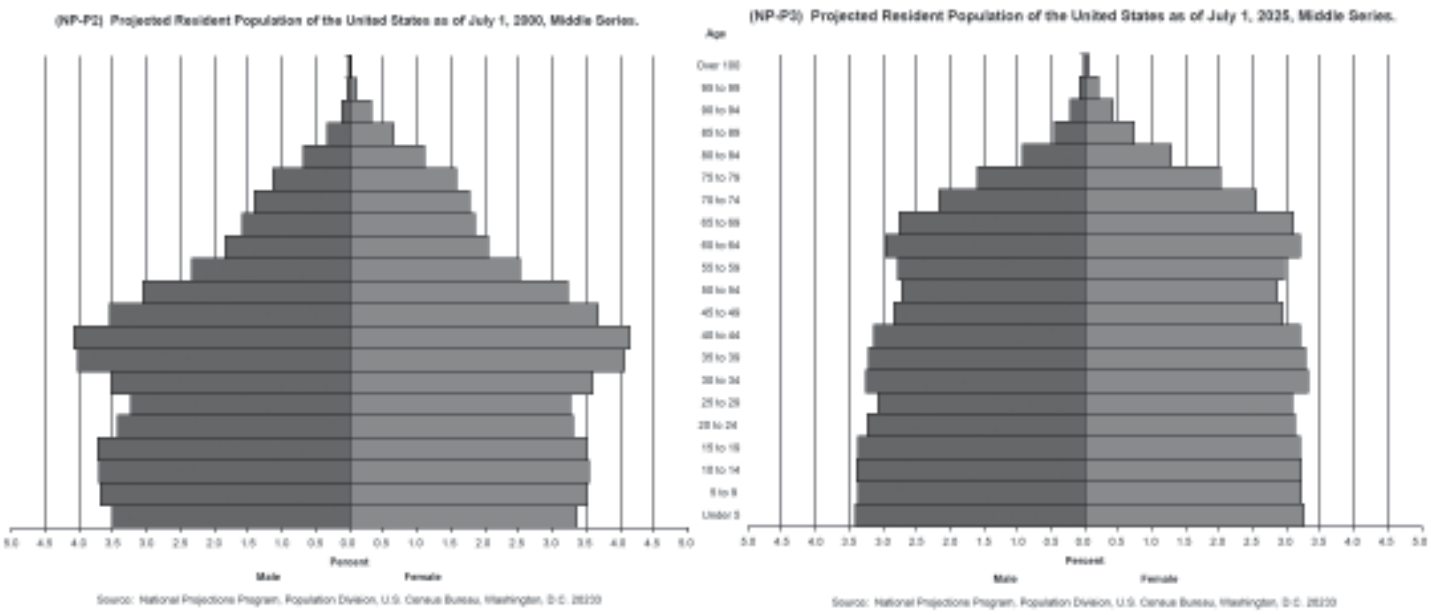
4. What trend does the graph show?

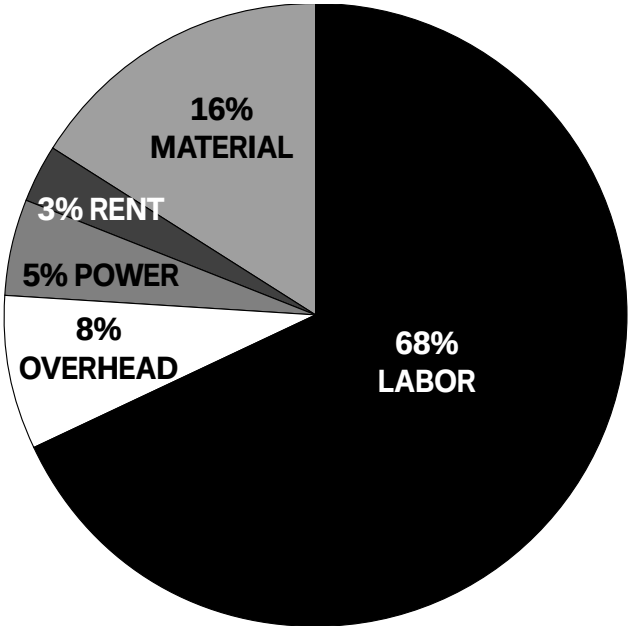
5. What other information does the graph give you?

Interpreting Graphs

Selection 18

Age and Gender Distribution of the U.S. Population, 2000 and 2025





Vicki's Craft Shop
Yearly Expenses