Chapter 1   Science Skills

Section 1.4 Presenting Scientific Data
(pages 22–25)

This section describes how scientists organize and communicate data.

Reading Strategy (page 22)

Comparing and Contrasting After you read this section, compare the types of graphs by completing the table. For more information on this Reading Strategy, see the **Reading and Study Skills in the Skills and Reference Handbook** at the end of your textbook.
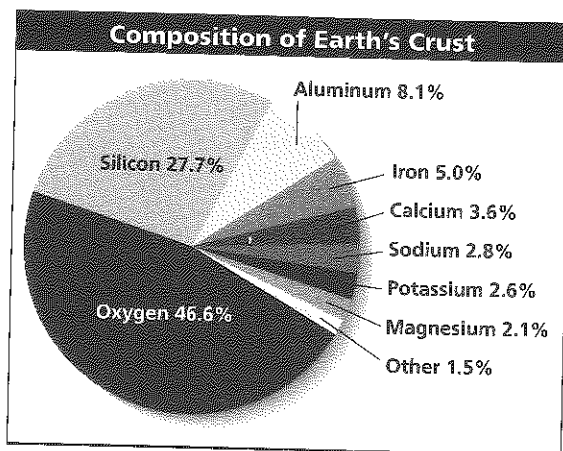
Type of Graph	Description	Used For
Line graph		
Bar graph		
Circle graph		

Organizing Data (pages 22–24)

1. Circle the letters of tools that scientists use to organize their data.
   - a. the Internet
   - b. newspapers
   - c. tables
   - d. graphs

2. The simplest way to organize data is to present them in a(n) _____.

3. Circle the letter of the place on a line graph where the manipulated variable is generally plotted.
   - a. the y-axis
   - b. the rise
   - c. the x-axis
   - d. the run

4. On a line graph, the ratio of the change in the y-variable to the corresponding change in the x-variable is called the line's _____.

5. Circle the letters of the relationships that are direct proportions.
   - a. distance traveled versus time at a constant speed
   - b. the mass of a substance versus its volume
   - c. the time to travel a given distance versus average speed
   - d. the number of fingers in your classroom versus the number of people

6. Is the following sentence true or false? An inverse proportion is one in which the product of the two variables is constant. _____

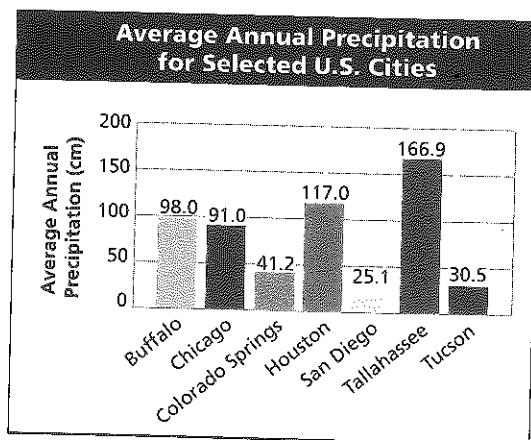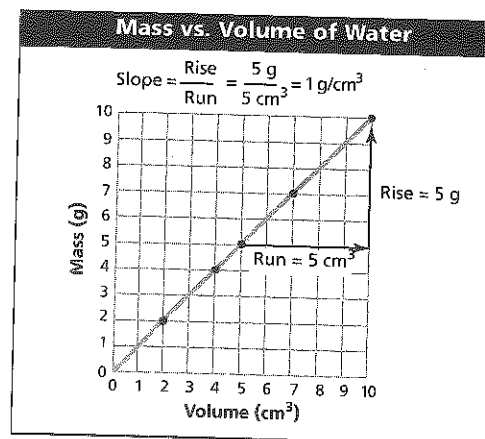7. Identify each data organizing tool shown below.

Composition of Earth's Crust

Aluminum 8.1%

Silicon 27.7%

Iron 5.0%

Calcium 3.6%

Sodium 2.8%

Potassium 2.6%

Oxygen 46.6%

Magnesium 2.1%

Other 1.5%

a.

Average Annual Precipitation for Selected U.S. Cities

City	Average Annual Precipitation (cm)
Buffalo, N.Y.	98.0
Chicago, Ill.	91.0
Colorado Springs, Colo.	41.2
Houston, Tex.	117.0
San Diego, Calif.	25.1
Tallahassee, Fla.	166.9
Tucson, Ariz.	30.5

b.

Average Annual Precipitation for Selected U.S. Cities

c.

Mass vs. Volume of Water

$$\text{Slope} = \frac{\text{Rise}}{\text{Run}} = \frac{5\ g}{5\ cm^3} = 1\ g/cm^3$$

Rise = 5 g

Run = 5 cm³

d.

a. _____   b. _____

c. _____   d. _____

Communicating Data (page 25)

8. Name two ways that scientists can report results of their experiments.

   a. _____   b. _____

9. Is the following statement true or false? Scientists always interpret a given set of data the same way. _____

10. Why is peer review an important part of scientific research? _____
_____