

Section 2.2 Scientific Notation and Dimensional Analysis

In your textbook, read about scientific notation.

1. Circle the figures that are written in scientific notation.

- 1.61 × 10² 1.61 × 10 × 10
- 1.61 × 100 161 km
- 1.627 62 × 10⁻²⁷ kg 9.109 39 × 10⁻³¹ kg
- 2.8 × 10⁻⁸ 1 380 000

2. Change the following data into scientific notation.

- a. 5 000 000 km 5 × 10⁶ km c. 0.000 421 g 4.21 × 10⁻⁴ g
- b. 8 394 000 000 s 8.394 × 10⁹ s d. 0.03 cm 3 × 10⁻² cm

In your textbook, read about dimensional analysis.

Answer the following questions.

- 3. What is a conversion factor?
A conversion factor is a ratio of equivalent values used to express the same quantity in different units.
- 4. What is dimensional analysis?
a method of problem solving that often uses conversion factors

Complete the following dimensional analysis problems.

- 5. Convert 50 kilograms into grams.
 50 kg × 1000 g / 1 kg = 50 000 g
- 6. Convert 5 meters into centimeters.
 5 m × 100 cm / 1 m = 500 cm
- 7. Convert 5 liters into kiloliters.
 5 L × 1 kl / 1000 L = 0.0005 kl
- 8. Convert 5 centimeters into meters.
 5 cm × 1 m / 100 cm = 0.05 m
- 9. Convert 55 kilometers per hour into meters per second. Use the conversion factor 1 km = 1000 m.
 55 km / h × 1000 m / 1 km × 1 h / 60 min
 × 1 min / 60 s = 15 m/s

Study Guide for Content Mastery

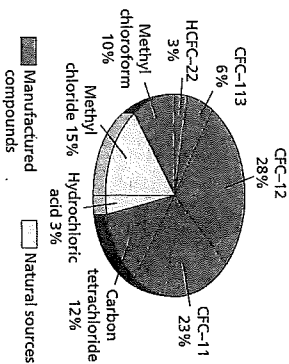
Chemistry: Matter and Change • Chapter 2

Section 2.4 Representing Data

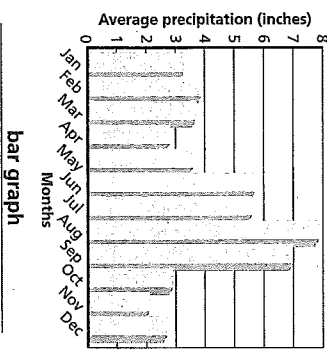
In your textbook, read about graphing.

Label each kind of graph shown.

1. Sources of chlorine in the stratosphere



2. Precipitation in Jacksonville (1961-1990)



Answer the following questions about the graphs.

- 3. What percent of the sources of chlorine in the stratosphere are CFCs? **60%**
 The least? **August: November**
- 4. During which month of the year does Jacksonville usually get the most precipitation?
August: November

In your textbook, read about line graphs.

Sequence the following steps. Write 1 beside the first step in plotting a line graph. Write 2 beside the second step, and so on.

- 7 **5.** Give the graph a title.
- 3 **6.** Choose the ranges for the axes.
- 1 **7.** Identify the independent and dependent variables.
- 5 **8.** Plot the data points.
- 2 **9.** Determine the range of the data that needs to be plotted for each axis.
- 6 **10.** Draw the "best fit" line for the data.
- 4 **11.** Number and label each axis.
- 12 **Chemistry: Matter and Change • Chapter 2**

Study Guide for Content Mastery