

Analyzing Data

Before You Read

Review Vocabulary

Define the following terms.

qualitative data

quantitative data

variable

analysis

Chapter 2

You and a friend are making sweetened iced tea. You both have different opinions about how much sugar to add and at what temperature is best to add the sugar. Design an experiment to find out how much sugar will dissolve at three different temperatures. In your experiment, identify the following:

Qualitative data _____

Quantitative data _____

Independent variable _____

Dependent variable _____

Analyzing Data

Section 1 Units and Measurements

Main Idea

Details

Skim Section 1 of your text. Write a question you have about each of the two types of units discussed in this section.

1. _____
2. _____

New Vocabulary

Use your text to define each term.

base unit

derived unit

density

Match the SI base units below with their functions.

second	→	distance
meter	→	temperature
kilogram		time
kelvin		mass
liter		volume

Section 1 Units and Measurements (continued)

Main Idea

Details

Units

Use with page 32.

Identify *five items around your home that use SI units of measurement.*

1. _____
2. _____
3. _____
4. _____
5. _____

Base Units and SI Prefixes

Use with pages 33–35.

Sequence *these prefixes from smallest to largest.*

- | | |
|-------------|-------------|
| _____ pico | _____ giga |
| _____ micro | _____ nano |
| _____ deci | _____ milli |
| _____ kilo | _____ centi |
| _____ mega | |

Temperature

Use with pages 34–35.

Compare and contrast *the Kelvin scale and the Celsius scale.*

Derived Units

Use with pages 35–37.

Explain *density by completing the following statement and equation.*

Density is a _____ that _____ the _____ of an object to its _____.

density = _____

Section 1 Units and Measurements (continued)

Main Idea

Using Density and Volume to Find Mass

Use with Example Problem 1, page 38.

Details

Solve *Read Example Problem 1 in your text.*

You Try It Problem

Determine the mass of an object that, when placed in a 25-mL graduated cylinder containing 14 mL of water, causes the level of the water to rise to 19 mL. The object has a density of 3.2 g/mL.

1. Analyze the Problem

Known: _____

Unknown: _____

You know the density and the volume of an object and must determine its mass; therefore, you will calculate the answer using the density equation.

2. Solve for the Unknown

Write the density equation.

= _____

Rearrange the density equation to solve for mass.

Substitute the known values for _____ and _____ into the equation.

Multiply the values and units. The mL units will cancel out.

mass = _____ × _____ = _____

3. Evaluate the Answer

The two sides of the equation should be _____

density = _____

If you divide 16 g by 5.0 mL, you get _____