

**Chapter 2 Properties of Matter**

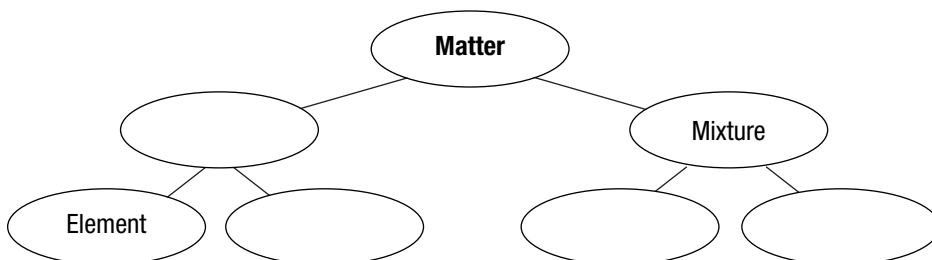
**Section 2.1 Classifying Matter**

**(pages 38–44)**

*This section explains how materials are classified as pure substances or mixtures. It discusses types of pure substances and mixtures.*

**Reading Strategy (page 38)**

**Summarizing** As you read, complete the classification of matter in the diagram below. 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.



**Pure Substances (page 39)**

1. Is the following sentence true or false? Every sample of a pure substance has exactly the same composition and the same properties. \_\_\_\_\_
2. What are the two categories of pure substances?
  - a. \_\_\_\_\_
  - b. \_\_\_\_\_

**Elements (pages 39–40)**

3. What is an element? \_\_\_\_\_  
\_\_\_\_\_
4. Is the following sentence true or false? The smallest particle of an element is an atom. \_\_\_\_\_
5. Why does an element have a fixed, uniform composition? \_\_\_\_\_  
\_\_\_\_\_
6. Circle the letter before each element that is a gas at room temperature.
 

a. carbon	b. oxygen
c. mercury	d. nitrogen

*Match each element to its correct symbol.*

Element	Symbol
_____ 7. aluminum	a. C
_____ 8. gold	b. Al
_____ 9. carbon	c. Au

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**Compounds (page 40)**

10. What is a compound? \_\_\_\_\_  
 \_\_\_\_\_
11. Circle the letter of each sentence that is true about compounds.
- a. A compound always contains at least two elements.
  - b. The substances that make up a compound are always joined in a fixed proportion.
  - c. A compound has the same properties as the elements from which it is formed.
  - d. A compound can be broken down into simpler substances.

**Mixtures (pages 41–42)**

12. Why do the properties of a mixture vary? \_\_\_\_\_  
 \_\_\_\_\_
13. A(n) \_\_\_\_\_ mixture is a mixture whose parts are noticeably different from one another.
14. Is the following sentence true or false? A homogeneous mixture is a mixture in which it is difficult to distinguish the substances from one another. \_\_\_\_\_

**Solutions, Suspensions, and Colloids (pages 42–44)**

15. A mixture can be classified as a solution, a suspension, or a colloid based on the size of its \_\_\_\_\_ particles.
16. Circle the letter of the term that identifies the homogeneous mixture that forms when sugar is dissolved in a glass of hot water.
- a. solution
  - b. suspension
  - c. colloid
  - d. substance
17. Complete the table about solutions, suspensions, and colloids.

Solutions, Suspensions, and Colloids			
Type of Mixture	Relative Size of Largest Particles	Homogeneous or Heterogeneous?	Do Particles Scatter Light?
Solution			No
	Intermediate	Homogeneous	
	Large		Yes

18. Circle the letter before each example of a colloid.
- a. windshield wiper fluid
  - b. fog
  - c. homogenized milk
  - d. muddy water
19. Is the following sentence true or false? If salt water is poured through a filter, the salt will be trapped on the filter.  
 \_\_\_\_\_