

Chapter 7 Chemical Reactions

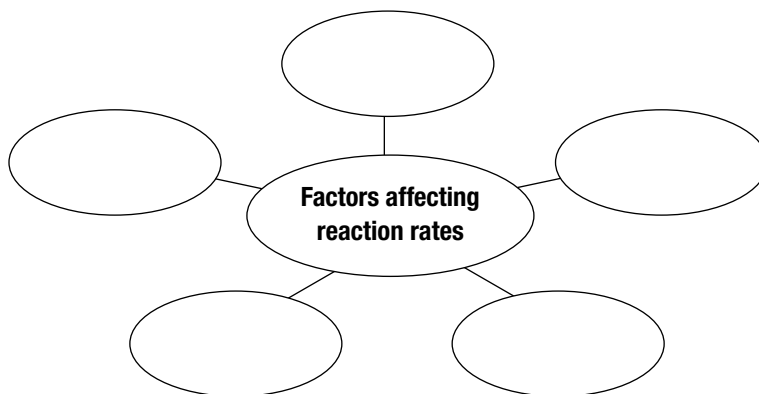
## Section 7.4 Reaction Rates

(pages 212–215)

*This section discusses the factors that affect reaction rates.*

### Reading Strategy (page 212)

**Building Vocabulary** As you read, complete the web diagram below with key terms from this section. 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.



### Reactions Over Time (page 212)

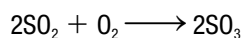
- Any change that happens over time can be expressed as a(n) \_\_\_\_\_.
- What is a reaction rate? \_\_\_\_\_  
\_\_\_\_\_

### Factors Affecting Reaction Rates (pages 213–215)

- Is the following sentence true or false? One way to observe the rate of a reaction is to observe how fast products are being formed.  
\_\_\_\_\_
- Is the following sentence true or false? The rate of any reaction is a constant that does not change when the reaction conditions change.  
\_\_\_\_\_
- Generally, an increase in temperature will \_\_\_\_\_ the reaction rate.
- Is the following sentence true or false? Storing milk in a refrigerator stops the reactions that would cause the milk to spoil.  
\_\_\_\_\_
- How does an increase in surface area affect the exposure of reactants to one another? \_\_\_\_\_  
\_\_\_\_\_

**Chapter 7 Chemical Reactions**

8. Why does increasing the surface area of a reactant tend to increase the reaction rate? \_\_\_\_\_  
\_\_\_\_\_
9. Stirring the reactants in a reaction mixture will generally \_\_\_\_\_ the reaction rate.
10. Is the following sentence true or false? Increasing the concentration of the reactants will generally slow down a chemical reaction. \_\_\_\_\_
11. Is the following sentence true or false? A piece of material dipped in a concentrated dye solution will change color more quickly than in a dilute dye solution. \_\_\_\_\_
12. Why does an increase in pressure speed up the rate of a reaction involving gases? \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_
13. What is a catalyst? \_\_\_\_\_  
\_\_\_\_\_
14. Circle the letters of the sentences that correctly identify why chemists use catalysts.
- a. to speed up a reaction
  - b. to enable a reaction to occur at a higher temperature
  - c. to slow down a reaction
  - d. to enable a reaction to occur at a lower temperature
15. Is the following sentence true or false? Because a catalyst is quickly consumed in a reaction, it must be added to the reaction mixture over and over again to keep the reaction going. \_\_\_\_\_
16. Identify where the catalyst  $V_2O_5$  should go in the formula shown and write it in the correct location.



17. Circle the letter of the correct answer. In the reaction represented by the equation  $2H_2O_2 \longrightarrow 2H_2O + O_2$ , which substance acts as a catalyst?
- a.  $H_2O_2$
  - b. Pt
  - c.  $H_2O$
  - d.  $O_2$
18. One way that a catalyst can lower the energy barrier of a reaction is by providing a surface on which the \_\_\_\_\_ can come together.