Name _____ Class _____ Date _____



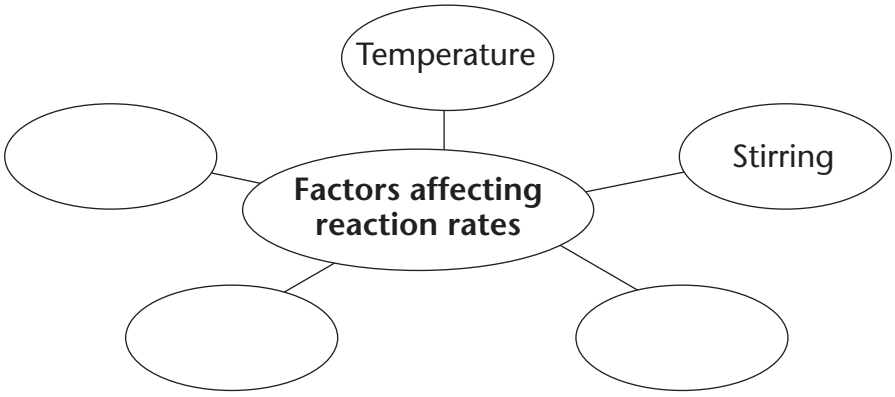
# Section 7.4 Reaction Rates

**(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)

1. Any change that happens over time can be expressed as a(n) _____.
2. A reaction rate is the rate at which _____ change into _____ over time.

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

3. Is the following sentence true or false? The rate of any reaction is a constant that does not change when the reaction conditions change.

   _____
4. Generally, an increase in temperature will _____ the reaction rate.
5. Is the following sentence true or false? Storing milk in a refrigerator stops the reactions that would cause the milk to spoil. _____
6. An increase in surface area _____ the exposure of reactants to one another. Circle the correct answer.

   increases decreases

**7.** Stirring the reactants in a reaction mixture will generally _____ the reaction rate. Circle the correct answer.

decrease maintain increase

**8.** Is the following sentence true or false? Increasing the concentration of the reactants will generally slow down a chemical reaction.

_____

**9.** 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. _____

**10.** A _____ is a substance that affects the rate of a reaction without being used up in the reaction.

**11.** 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 enable a reaction to occur at a lower temperature

**12.** 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. _____

**13.** Fill in the blank where the catalyst $V_2O_5$ should go in the formula shown and write it in the correct location.

$$\underline{\qquad} + 2SO_2 + O_2 \xrightarrow{\underline{\qquad}} 2SO_3 + \underline{\qquad}$$

**14.** Circle the letter of the correct answer. In the reaction represented by the equation $2H_2O_2 \xrightarrow{Pt} 2H_2O + O_2$, which substance acts as a catalyst?

a. $H_2O_2$
b. Pt
c. $H_2O$

**15.** One way that a catalyst can lower the energy barrier of a reaction is by providing a surface on which the _____ can come together. Circle the correct answer.

catalysts reacting particles products