Name _____ Class _____ Date _____

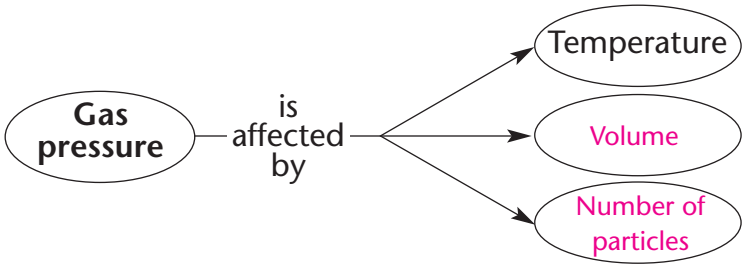
Section 3.2 The Gas Laws

(pages 75–81)

This section discusses gas pressure and the factors that affect it. It also explains the relationships between the temperature, volume, and pressure of a gas.

Reading Strategy (page 75)

Identifying Cause and Effect As you read, identify the variables that affect gas pressure. Write them 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.



Pressure (pages 75–76)

1. What causes the pressure in a closed container of gas? Collisions between particles of gas and the walls of the container cause the pressure.

2. Circle the letter of each unit used to express amounts of pressure.

   a. newton b. joule (c.) pascal

Factors That Affect Gas Pressure (pages 76–77)

3. Name the factors that affect the pressure of an enclosed gas.

   a. Its temperature b. Its volume c. The number of its particles

4. Is the following sentence true or false? In a closed container, increasing the temperature of a gas will decrease the force with which particles hit the walls of the container. false

5. Raising the temperature of a gas will _____ its pressure, if the volume of the gas and the number of its particles are kept constant. Circle the correct answer.

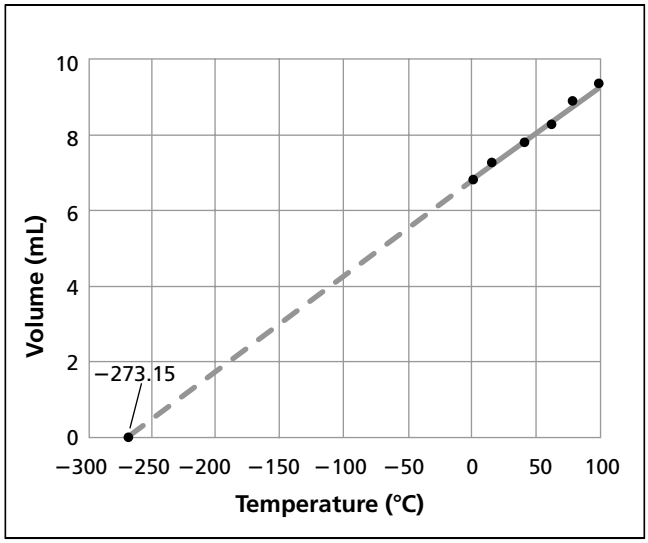
   have no effect on decrease (increase)

6. Increasing the number of particles of a gas will _____ its pressure if the temperature and the volume are constant. Circle the correct answer.

   have no effect on decrease (increase)

Charles's Law (page 78)

7. Jacques Charles recorded the behavior of gases on a graph like the one below. The data show that the volume of a gas increases at the same rate as the _____temperature_____ of the gas.



8. A temperature equal to 0 K on the Kelvin temperature scale is known as _____. Circle the correct answer.

Kelvin zero relative zero (absolute zero)

Boyle's Law (page 79)

9. Boyle's law states that there is an inverse relationship between the pressure and volume of a gas. Circle the letter of the correct expression of this relationship.

(a.) $P_1V_1 = P_2V_2$

b. $\frac{P_1}{V_1} = \frac{P_2}{V_2}$

c. $P_1P_2 = V_1V_2$

The Combined Gas Law (pages 80–81)

10. Circle the letters of the factors that are included in the expression of the combined gas law.

(a.) temperature

b. number of particles

(c.) volume