

Solids, Liquids, and Gases • Review and Reinforce

Gas Behavior**Understanding Main Ideas**

Complete the following compare and contrast table.

Law	When temperature of a gas ...	If you ...	Then you observe ...
Boyle's Law	stays constant	decrease volume	1.
Boyle's Law	stays constant	increase volume	2.
Charles's Law	increases	keep pressure constant	3.

Answer the following questions in the spaces provided.

4. A gas barbecue grill uses propane gas. The propane is stored in a rigid tank. What happens to the pressure of the propane when the tank is left outside on a very hot summer day? What about on a cold winter day?

5. What is the formula relating pressure, force, and area?

6. How does the speed of the particles of a gas change when the gas is heated?

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition on the line beside the term in the left column.

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|------------------------|--|
| _____ 7. temperature | a. explains the relationship between the pressure and volume of gas at a constant temperature |
| _____ 8. Charles's Law | b. explains the relationship between the temperature and volume of gas kept at a constant pressure |
| _____ 9. pressure | c. a measure of the average energy of motion of the particles of a substance |
| _____ 10. Boyle's Law | d. a measure of the force of the outward push caused by the movement of particles of a gas |

1. The volume of a gas is the same as the volume of its _____.
2. The force pushing on a surface divided by the area of that surface is called _____.
3. Fill in the relationship between volume and pressure of a gas.

Change	Increase or Decrease
Pressure decreases	Volume _____
Pressure increases	Volume _____
Volume increases	Pressure _____
Volume decreases	Pressure _____

4. Suppose a gas is kept in a closed, rigid container. If the temperature of the gas is increased, what happens to its pressure on the container?

5. Why does a hot air balloon rise when the air inside it is heated?