

Name \_\_\_\_\_  
Date \_\_\_\_\_

Worksheet 4  
Grade 6

### Gas Behavior 2.3

## Boyle's Law

Constant = Mass

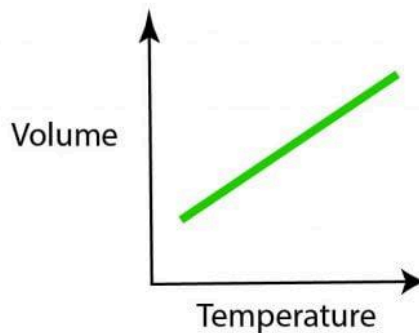
Pressure and Volume are  
Inversely Proportional

## Charles's Law

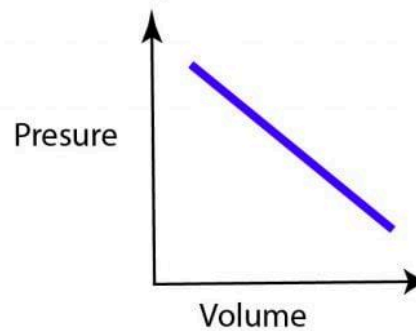
Constant = Pressure

Temperature and Volume  
are directly proportional

Charles' Law



Boyle's Law



### Important vocabulary

**Boyle's Law** the law that states that the volume of a gas is inversely proportional to the pressure of a gas when temperature is constant.

**Charles's Law** the law that states that the volume of a gas is directly proportional to the temperature of a gas when pressure is constant.

**pressure** the amount of force exerted per unit area of a surface.

**temperature** a measure of how hot (or cold) something is; specifically, a measure of the average kinetic energy of the particles in an object.

**volume** a measure of the size of a body or region in three-dimensional space.



1. Name the three factors that affect how a gas behaves.

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2. What happens to the temperature and volume of a balloon if it is taken outside on a cold winter day?

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3. You have three liters of gas at a certain Kelvin temperature and a certain pressure. The Kelvin temperature triples and the pressure stays the same. What is the gas volume? Explain your answer.

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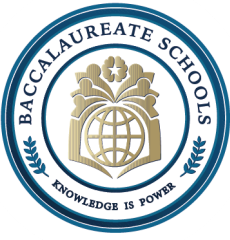
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4. The pressure of the gas is cut in half and the temperature stays the same? What happens to the gas volume? Explain your answer.

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5. When scientists record a gas's volume, they also record its temperature and pressure. Why?

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