

## PRE-LAB DISCUSSION

In this experiment, you will observe the relationship between the volume of a confined gas and its temperature. Charles's law states that at constant pressure, the volume of a fixed mass of a gas varies directly with the Kelvin (or absolute) temperature. This law may be represented as

## PURPOSE

To show the effect of the pressure of the gases on the solid materials.

## EQUIPMENT

graduated cylinder      large beaker

## MATERIALS

water      baking soda ( $\text{NaHCO}_3$ )  
vinegar      spaghetti

## PROCEDURE

1. Almost fill a large graduated cylinder, large beaker with water.
2. Place 2 tablespoons of baking soda ( $\text{NaHCO}_3$ ) in the solution.
3. Add a handful of broken spaghetti.
4. Slowly add up to 100 mL of vinegar until the spaghetti begins to "dance"

## CONCLUSIONS AND QUESTIONS

1. Write the reaction between acetic acid in vinegar and baking soda. What kind of gas is produced?
2. Describe the difference between a rising piece of spaghetti and a falling piece of spaghetti?
3. Does it matter what gas is used when this effect is produced?
4. What variables can be changed to cause the spaghetti to rise at a different rate?