

## Factors Affecting the

# RATE OF REACTION

In this experiment you will be determining the effect of **the CONCENTRATION OF A SOLUTION** on the rate of reaction. It is very important that you **MEASURE EXACT AMOUNTS OF SUBSTANCES**.

### Factors

Temperature

**Concentration**

Surface Area

Catalyst

### MATERIALS:

**GOGGLE (over your eyes)**

**1 50 mL beaker**

**1 Large Test Tubes (Clean)**

**Small Graduated Cylinder**

**Hydrochloric Acid – 1M, 3M, 6M  
Concentrations**

**Sodium bicarbonate (1 level scoop/trial)**

**Test Tube Rack**



1. Measure **1 level scoop** of sodium bicarbonate and add it to a clean, 50 mL BEAKER.
2. Obtain **5 ml** of **1M Hydrochloric Acid** in a CLEAN TEST TUBE.

**CAUTION: THIS NEXT STEP MAY BUBBLE VIOLENTLY!**

3. Add the HCl (hydrochloric acid) to the sodium bicarbonate and observe. Pay close attention to the **speed and time** of the reaction (time, intensity and time to completion).
4. **REPEAT** FOR 3M and 6M HCl

**RECORD YOUR DATA ON THE DATA CHART PROVIDED!!!!**

What is the relationship between the RATE OF REACTION AND THE **CONCENTRATION** OF THE CHEMICALS?

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### **CLEAN UP!**

**PUT WASTE ASSIGNED CONTAINER**

**CLEAN EQUIPMENT AND RETURN TO PROPER AREA**