Name: _____ Class: _____ Date: _____

Where's the Evidence?

Day One: Sodium Carbonate + Hydrochloric Acid

You are not allowed to start the lab until Mr. A confirms that all of your Pre-Lab Questions are correct. When you are done with the lab, please begin the Post-Lab Questions. All lab materials (Pages 304-310) will be graded on Monday.

Pre-Lab Questions:

1. What is the difference between a physical change and a chemical change?

2. Classify the following reactions as synthesis, decomposition, replacement, or neither.

Reaction	Formula	Type of Reaction
Making Zinc Chloride	$Zn + CuCl_2 \rightarrow Cu + ZnCl_2$	
Electrolysis of Water	$2H_2O \rightarrow 2H_2 + O_2$	
Photosynthesis	$6CO_2 + 6H_2O \rightarrow C_6H_{12}O_6 + 6O_2$	

3. The acid we'll be using today is hydrochloric acid (HCl). Draw the dot diagrams for hydrogen and chlorine. Then draw one molecule of HCl and state whether it is bonded ionically or covalently.

Hydrogen	Chlorine

One Molecule of HCl

HCl uses a _____ bond.

Goal:

Observe what happens when hydrochloric acid (HCl) is mixed with sodium carbonate (Na_2CO_3).

Materials:

- 2 clean plastic cups
- a bottle of hydrochloric acid (HCl)
- a beaker of sodium carbonate with a blue spoon
- goggles

Procedure:

1. Put ¼ of a scoop (about the size of a pea) of sodium carbonate into one of your plastic cups.
2. Record the appearance in your data table.
3. Observe the bottle of hydrochloric acid (HCl). ***Caution: HCl can burn your skin!***
4. Record the appearance in your data table.
5. Write down a prediction about how you think the two chemicals might react when mixed.
   **Hint: Look back at what reacted with sodium carbonate during the Mystery Mix lab.*
6. Add 10 drops of hydrochloric acid (HCl) to the cup of sodium carbonate. Swirl gently to mix the contents of the cup. Record your observations.
7. Repeat the experiment, but this time use a full scoop of sodium carbonate.

Data:

Amount of Sodium Carbonate	Observations Before Reaction	Predictions	Observations During Reaction	Observations After Reaction
¼ scoop *(pea size)*				
1 scoop				