

Captured Chemicals Lab*Chem 12-22***Purpose:**

To become familiar with the observation and interpretation of chemical reactions.

PreLab:

Good chemists are good detectives. They gather evidence by making careful observations, and then interpreting the data they have collected. When a chemical reaction occurs there will often be clues that indicate this. Some of these clues might be -

In this lab you will perform physical changes and chemical changes (also called chemical reactions) and make careful observations. Then, by testing and interpreting your data, you will be able to make conclusions as to what caused the changes you observed.

Procedure:**Part 1-Making Observations**

1. You will be given four different chemicals: **Write** down the name of each chemical, and **describe** the properties of each chemical. **DO NOT** taste or touch anything!

<i>Chemical</i>	<i>Description</i>
calcium chloride CaCl ₂	
sodium bicarbonate NaHCO ₃	
Phenol red	
Water	

2. Mix one spoonful of CaCl₂ and one spoonful of NaHCO₃ in a zip lock bag. Shake the bag. **Record** your observations.
3. Squeeze out as much air as possible from the zip lock and seal it 7/8 of the way closed. Squeeze one eye dropper full of phenol red and one pipet of water into the ziplock bag, and quickly seal the bag. **Record ALL** your observations.

Part 2 - Your Turn to Experiment

Now that you have made your observations, you will determine which combination of the four chemicals used in part I is responsible for **each** of the observations you have made in part 1. To do this you may mix any combination and ratio of chemicals as many times as you need. The zip lock bag can be rinsed and reused. Be sure to **record** all trials!

- Record the following information in the data table below. Under the first column **record** the combination and ratio of chemicals you will be reacting. In the last column, **record** what you observed when conducting your experiment. Do as many trials as you need to identify which combination of chemicals is responsible for **each** observation from Part 1.
- Clean off and sponge off the counter. .

Trial	CaCl ₂	NaHCO ₃	Phenol red	water	observations
1					
2					
3					
4					
5					
6					
7					
8					
9					

PostLab Questions:

- What evidence have you observed that indicates that a chemical reaction has occurred?
- Which combination of chemicals is responsible for each of the changes you observed?