Name:_____

Period:_____

**Title: Identifying Chemical Reactions**

**Standard 8.1.3**

**Student Friendly Objective:** I can identify patterns in the data to determine if a chemical reaction has taken place. I can plan and conduct an investigation about changes in a substance's properties during a chemical reaction.

**Task**

Your task to is plan and conduct an investigation to show whether a chemical reaction occurs or not. You will be using the following substances: water, calcium chloride, phenol red indicator, and baking soda, to create different mixtures. ***Beware that Calcium Chloride and Phenol Red Indicator are skin irritants so please make sure all lab safety instructions and equipment are used and followed.*** Your group will need to complete the following items in the lab write up.

**Materials:**

- Balance
- 1 – 100mL Plastic Beaker
- 6 – film canisters or small beakers
- Goggles
- 2 - Weigh boats
- Graduated Cylinder (25mL)
- Marker
- Lab Apron (optional)
- Paper Towels
- Plastic bags, self-sealing
- Stirring Rod
- Baking Soda ($NaHCO3$)
- 100 mL Water ($H2O$)
- Calcium chloride ($CaCl2$)
- Phenol Red Indicator

**Procedures:**

1. Create a Data Table in the space below to plan and track your experiments.
2. Put on your goggles and lab aprons.
3. Label bags on the outside of the bag which experiment # it is.
   ***REMEMBER:*** *Do one bag at a time. Don't cross contaminate materials or tools.*
4. Using the balance and the weigh boats, measure the correct amounts of SOLID materials according to the table on the below, then return to your station. ***$CaCl_2$ is an eye irritant. Keep hands away from your face and eyes. IT BURNS LIKE CRAZY!!***
5. Using your graduated cylinder, measure the correct amounts of LIQUID materials according to the table below, then return to your station. ***Phenol Red is an eye irritant. Keep hands away from eyes and face. Wash hands when finished.***
6. Pour the solid materials into one corner of the bag.

7. Pour the liquid materials into the film canister, and place the film canister in the other corner of the bag. DO NOT let it tip over. (SEE the diagram for example)
8. After sealing the bag, GENTLY tip the canister.
9. Record your observations in the table below.
10. Pour all your materials from the bag down the drain. Rinse and dry out your baggie and film canister to be used again.
11. REPEAT steps 4 – 10 for the other experiments in the table.
12. Answer the analysis questions below.
13. When finished with everything clean and dry your station and WASH your hands.



**Data Table and Observations:** (Here you need to put your data table. Make sure you leave room for observations for each experiment you conduct.)

**Summarizing Information:**

| What we know | Questions we still have |
|---|---|
| **1.** | **1.** |
| **2.** | **2.** |
| **3.** | **3.** |
| **4.** | **4.** |

**Conclusion Statement:**

*Be sure to:*

1. *Explain what happened in your experiments.*
2. *Explain which experiments showed a chemical reaction and which did not.*
3. *Explain why they showed a chemical reaction or not using the patterns (indicators) we learned in the lessons before.*
4. *Explain which reactants caused the color change, the increase in temperature, and a production of a gas.*