

Name: _____, _____

Objective:

Materials:

- | | |
|-------------------------------|--------------------------------|
| 1. Baking Soda | 8. Scoop |
| 2. Calcium Chloride | 9. Plastic Bag |
| 3. Phenol Red Solution | 10. Goggles |
| 4. Water | 11. Computer/Pasco Thermometer |
| 5. Graduated Cylinder | |
| 6. Vial | |
| 7. Stir Rod | |

Procedure:

1. What do you think will happen when you mix the 3 above “bold” chemicals?

2. In this experiment will combine all 3 chemicals one by one.
3. What do you observe?
 - a. Calcium Chloride, CaCl_2

 - b. Baking Soda, NaHCO_3

 - c. Phenol Red Solution

4. You will add the chemicals together one by one to a ziplock bag and observe what happens.

5. What to do:
 - a. Put one scoop of baking soda into a bag.
 - b. Put two scoops of calcium chloride into the same bag.
 - c. Measure 10 mL of phenol red solution and pour into a vial.
 - d. Put the vial into the bag (standing upright) and seal the bag.
 - e. Tip the vial of phenol red.

6. Record 5-observations (note different color changes)
 - a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

7. Open the sealed the bag away from your eyes. Use your hand to “smell” is an odor exists. If an odor exists, describe it;
_____.

8. Place the bags into the bucket.

9. Circle the items that you observed that indicate a chemical reaction took place.
 - a. Odor
 - b. Color change
 - c. Gas production

10. Did you feel a temperature change? Circle; warmer or cooler? Warm to touch indicates what type of chemical reaction? _____ Cool to touch indicates what type of chemical reaction? _____.

11. When chemicals react, _____ substances are created. Chemicals that take part in chemical reactions are called _____, and substances that are formed are called _____.

12. Rinse vials at the sink with water.

13. What the reactant’s Formulas:
 - a. Calcium Chloride, _____
 - b. Sodium Bicarbonate, _____

14. What about the red liquid? Phenol red acts as an acid/base indicator. It changes _____ in the presence of acids/bases.

- Phenol Red: "Base" → bright red/pink
- Phenol Red: "Acid" → bright pink to orange/yellow
- What color did you initially observe? _____. What did this indicate? _____.
- Did you observe any other color changes? If yes, what color? _____. What did this indicate? _____.

15. The chemical reaction equation:



Reactants		Products	
Element	#	Name	#
Ca		Ca	
Cl		Cl	
Na		Na	
H		H	
C		C	
O		O	

b. Are the number of atoms balanced for the reactants and products? Explain.

c. What is NaCl? _____

d. What is CaCO₃ commonly called? _____