Aluminum - Copper Lab

Name: _____Hour:_____

Name of Lab Partner(s):_____

PRE-LAB QUESTIONS:

When aluminum reacts with copper (II) chloride, it produces copper and aluminum chloride.

1. **What are the Reactants in the above chemical reaction? (chemical formulas)**

2. **What are the Products in the above chemical reaction? (chemical formulas)**

3. **Write the Balanced chemical equation for this reaction: (chemical formulas)**

Procedure:

1. **Measure out 10mL of Copper (II) Chloride into the graduated cylinder.**
2. **Pour the 10 mL of copper (II) chloride into a beaker.**
3. **Identify your aluminum foil. Loosely crumple it up. Make your observations of both of these reactants separately before you begin the reaction.**
4. **Put the crumpled aluminum foil in the beaker. Watch it react for 3 minutes. Note your observations. (You may stir the aluminum around but may NOT break it up.)**
4. **After 3 minutes is up and you have noted your observations, use the stirring rod to gently break it up into smaller pieces in the beaker.**
5. **Watch this reaction occur for 3 minutes and record your observations.**
6. **Log all your observations in the Observation Log on the back of this paper.**

Observation Log and Ending Questions:

1. **Describe the properties of the reactants. (observations for STEP 3 of the Protocol)**

Typing observations

2. **Describe the properties of the products with the crumpled up Aluminum. (After step 4)**

3. **Describe the properties of the products in the reaction after the aluminum was broken up. (After step 5)**

4. **What are some signs of a chemical reaction that you witnessed?**

5. **Did you notice more chemical change with the crumpled up Aluminum ball or with the broken Aluminum pieces?**

6. **How does your last observation from question 5 apply to what you have learned about reaction rates?**

7. **What else would you propose we could do to speed up the reaction even more in the lab?**

8. **Describe how the products were different from the reactants in this lab.**

9. **How many moles of Aluminum was needed to replace 1 mole of Copper? (Hint: Use your Balanced Chemical Equation, The mole amount is indicated in the coefficient)**

10. **What kind of reaction occurred in this lab experiment?**
    a. **Decomposition**
    b. **Synthesis**
    c. **Single Replacement**
    d. **Combustion**