

NAME:

**HONORS CHEMISTRY**

SECTION:

Lab: Observation of a Chemical Reaction

In order for you to become a successful chemist, you need to develop many skills, including multi-step problems, thinking abstractly, and communicating ideas clearly. The most basic, but most important, skill is observing. The difference between good and great scientists is the ability to observe details and to question observations (or lack of observations)!

**Objectives**

- Observe details that occur before, during, and after a chemical reaction
- Make inferences about what is occurring chemically

**Available Materials**

50 mL beaker  
stirring rod  
ruler  
aluminum foil

copper (II) chloride solution  
balance  
thermometer

**Hypothesis**

What do you think will happen when aluminum foil is added to the blue solution? Why do you think this will happen?(Write your answer in a complete sentence.)

**Procedure**

1. Obtain a 50 mL beaker, 50 mL graduated cylinder, and a stirring rod.
2. Transfer about 25 mL of copper (II) chloride to the beaker.
3. Fold a piece of aluminum foil into a square so it will fit in the beaker and be submerged in the solution.
4. Add the aluminum foil to the copper (II) chloride solution.
5. Record any observations you record before, during, and after you add the aluminum to the copper (II) chloride solution. Make as many observations as possible!
6. Clean up according to your teacher's instructions.

**Observations**

Before:	During:	After:

**Analyze and Apply Questions** (Answer in complete sentences on a separate sheet.)

1. What observations were easiest to detect?
2. What observations were the most difficult to detect? Why?
3. What formed in this reaction? Can you deduce its likely chemical identity? What *evidence from your observations* supports your answer? Explain in detail.
4. According to the Law of Conservation of Matter, atoms cannot be created or destroyed. What do you think happened to the aluminum atoms after the reaction? Why?
5. Imagine that you were required to determine the identity of the gas released in this reaction. In order to accomplish this task, what do you need? How will you get it? (Be creative—show a picture of your method!)
6. An exothermic reaction releases heat to the environment; an endothermic reaction absorbs heat from its surroundings. Is this reaction exothermic or endothermic? What evidence from the lab supports your answer?
7. What observations did you forget to make?

**Conclusion**

Write a conclusion, answering the following three questions (at least **TWO** *meaningful* sentences for each question, to get credit)

What did you enjoy about the lab?

What did you learn from the lab?

How could you improve the lab or your results, if you were to repeat it?