

NAME: \_\_\_\_\_

PERIOD: \_\_\_\_\_ DATE: \_\_\_\_\_

## Changes During Redox Reactions – 1 hour

**Problem**

What changes occur during redox reactions?

**Materials:**

- Reaction plate
- Micropipettes containing the following solutions:
  - 1.0 M HCl
  - 1.0 M Cu(NO<sub>3</sub>)<sub>2</sub>
  - 1.0 M Zn(NO<sub>3</sub>)<sub>2</sub>
- small pieces of Mg, Cu, and Zn

**Procedure:**

1. Place 10 to 12 drops of HCl into three of the wells on the chem-plate. Add one piece of magnesium to one of the wells, Copper to a second well, and zinc to a third well. Record your observations in the data table below.
2. Place 10 to 12 drops of copper nitrate in a clean well. Add a piece of zinc to the well. After 5 minutes, record your observations in the data table.
3. Place 10 to 12 drops of zinc nitrate in a clean well. Add a piece of copper to the well. After 5 minutes, record your observations in the data table.
4. Following your teacher's instructions, discard all solutions and clean all chem-plates.

**Data Table:**

Reactants	Observations
HCl + Mg	
HCl + Cu	
HCl + Zn	
Cu(NO <sub>3</sub> ) <sub>2</sub> + Zn	
Zn(NO <sub>3</sub> ) <sub>2</sub> + Cu	

**Observations:**

1. Which metal did not react with HCl? \_\_\_\_\_
2. Which metal did not react in steps 2 and 3? \_\_\_\_\_