Biology with Clark _____ **per. _____**

(Name here)

Background: Approximately 3 billion years ago, Cyanobacteria evolved the ability to strip Hydrogen off of water molecules to combine with CO2 to produce sugars.. Of course, Oxygen gas was released in the process and the entire planet's atmosphere was transformed. Once free oxygen was present in the atmosphere, a series of 'oxidation' reactions began taking place, completely transforming the oceans and continents. In biochemistry, 'oxidation' reactions are common and take place throughout our bodies and cells.

This lab introduces students to an 'oxidation reaction' and to its corollary, the 'reduction' reaction.

What is the definition of **Oxidation reaction** in chemistry.

What is the definition of a '**Reduction reaction** in Chemistry.

Lab procedure:
Step 1. Use the scale to measure the mass of a sample of Copper (II) Chloride crystals.. _____

Write down the chemical formula for this compound here_____

Describe the color and texture of the crystals here..

Use this space to determine the percent mass of Copper in the compound.

Step 2. Use the Graduated Cylinder to measure out 50 mL of water and mix in the crystals and stir until it is all dissolved..

Describe the solution color here.. ***Record the starting temperature of the solution _____***

What must be happening to the atoms of the salt? What is a salt? Draw a diagram here showing the charges on the atoms..

Step 3: Place a small piece of Aluminum foil into the solution and use the glass stirring rod to submerge and stir the piece until it dissolves complete. Use the space below to describe what you see..

When the aluminum is completely dissolved, record the final temperature of the solution.. _____

Use the space below to determine how many joules of heat were released by the reaction.

Step 4: Obtain a piece of filter paper and write the names of your group members on it in pencil. Then fold the filter paper into the cone shape, pour the solution through the paper attempting to capture all of the solid material. Leave it in place until the next class period.

Step 5: (next period).. Open up your filter paper and use colored pencils to draw what the material captured by the filter look like. Identify which areas contain Copper, Copper (I) Oxide, Copper (II) Oxide and Copper Carbonate. Write down the chemical formulas for each.