FLINN SCIENTIFIC

Name_____

# Metal, Nonmetal, or Metalloid?

## Post-Lab Questions

1. Review the data gathered for the eight elements. Sort the eight elements into groups, based on similarities and differences in their physical and chemical properties. From the information provided in the background reading, classify each group as metals, nonmetals, or metalloids.

2. Are there any inconsistencies within the groups you made? Do any elements seem to have properties of both groups? Which? Explain.

3. Look at the location on the periodic table of each of the eight elements tested in this lab. How do the properties of these elements compare to their general position on the periodic table? Make generalizations about the position of the metals, nonmetals, and metalloids on the periodic table.

4. Predict the physical and chemical properties of the following elements which were not tested in this lab—selenium, calcium, and cobalt.

## Extension Questions

1. Given the following melting point data, are there any generalizations you can make about the melting points of metals versus nonmetals? Are there any exceptions? Explain.

| | | | |
|---|---|---|---|
| Aluminum | 660 °C | Magnesium | 649 °C |
| Carbon | 3652 °C | Silicon | 1410 °C |
| Copper | 1063 °C | Sulfur | 113 °C |
| Iodine | 114 °C | Zinc | 420 °C |

2. Research the everyday uses of the elements used in this lab. Use the internet or the library and share your findings with the class.

*Name:* _____

## Data Table: Metal, Nonmetal, or Metalloid?

| Element | Chemical Symbol | Color | Luster | Other Physical Properties | Result of Tapping | Reaction with Acid | Reaction with $CuCl_2$ | Conductivity (Optional) |
|---|---|---|---|---|---|---|---|---|
| Aluminum | | | | | | | | |
| Carbon | | | | | | | | |
| Copper | | | | | | | | |
| Iodine | | | | | | | | |
| Magnesium | | | | | | | | |
| Silicon | | | | | | | | |
| Sulfur | | | | | | | | |
| Zinc | | | | | | | | |