

Guest Speaker: Robert Coppage, The MetalSmith
The Science of Metals

Name _____

Block # _____

Properties of Metals

- a) Where are metals located on the periodic table? **Left side of zig zag line (left of the metalloids)**
- b) What do metals look like? **Solid, hard, shiny, etc.**
- c) How do metals react with other atoms? **Metals lose electrons to become positive ions (cations).**
- d) What are some other properties of metals? **Low specific heat capacity and good conductors of heat and electricity**
- e) What is the main difference between Ferrous and Non-Ferrous? **Magnets**
- f) What is Rust? **The oxidation of the metal; when oxygen reacts with iron**
- g) Which metals can rust/tarnish? **All but pure Gold**
- h) What makes metal glow when it is hot? **Thermal radiation**
- i) How does metal work harden? **Impacting and binding**
- j) How can you make steel stronger? **Tempering – by heating at high temperature, cooling in water, and heating again slowly at lower temperature**
- k) Which metal is more dense - Lead or Iron? **Lead, because it has more protons in the nucleus**
- l) Describe crystalline structure? **A lattice of atoms connected in a specific pattern**
- m) How is an alloy made? **When molten metal is blended to make a new material.**
- n) What is thermal conductivity? **How fast heat is transferred through the metal.**