Properties of Elements in the Periodic Table

Elements in the periodic table fit into one of three categories: 1) metals, 2) nonmetals, or 3) metalloids.

1. Properties of Metals
   1. Good conductor: This means it transfers heat and electricity well (e.g. metal pots and pans)
   2. Ductile: This means it can be drawn (pulled) out into wires
   3. Malleable: This means it can be hammered out or rolled into sheets (like aluminum foil)
   4. Shiny
   5. Reflects light
   6. Gives up electrons easily
   7. Most are solid at room temperature (except Mercury)
2. Properties of Nonmetals
   1. Most are gases
   2. Dull
   3. Brittle or powdery
   4. Not malleable or ductile
   5. Electrons are tightly attracted to the nucleus
   6. Poor conductors
3. Properties of Metalloids
   1. Have properties of both metals and nonmetals
   2. Conduct electricity better than many nonmetals but not as well as some metals
   3. Found along the stair-step line of the periodic table
   4. Examples include Boron, Silicon, and Arsenic
   5. The mixed groups 13, 14, 15, and 16 contain metals, nonmetals, and metalloids.

The periodic table is made up of elements organized by atomic number (the number of protons). In this table, each column of elements (called families or groups) has similar properties. By knowing the family an element is in, many things can be inferred.

Group 1: Alkali Metals Li, Na, K

Group 2: Alkaline Earth Metals Be, Mg, Ca

Group 3: Boron Family B, Al

Group 14: Carbon Family C, Si, Sn, Pb

Group 15: Nitrogen Family N, P, As

Group 16: Oxygen Family O, S, Se

Group 17: Halogens F, Cl, Br, I

Group 18: Noble Gases He, Ne, Ar, Xe