**Parts of the Periodic Table**

**Categories Location**

**Metals**  found to the left of the staircase on the periodic table

**Nonmetals** found to the right of the staircase on the periodic table

**Metalloids** touching two lines of the staircase on the periodic table

**Noble Gases** found in Group 18 of the periodic table

**Exceptions:**  Hydrogen (H) is on the left side of the table but is a nonmetal

Aluminum (Al) and Polonium (Po) are metals even though they touch two lines on the staircase.

**Categories Physical Properties**

**Metals**  luster (shiny), malleable, ductile, high melting points, solids at room temperature, conductive

**Nonmetals** dull, brittle, low melting points/boiling points, non-conductive, found in all three phases at room temperature

**Metalloids** contains a mix of both metal and non-metal properties

**Noble Gases** found as gases at room temperature

**Exceptions:**  Mercury (Hg) is the only liquid metal at room temperature

Bromine (Br) is the only liquid nonmetal at room temperature, making Group 17 (Halogens) the only group to contain all three phases of matter.

**Categories Chemical Properties**

**Metals**  react with nonmetals; metals get more reactive as you go down and to the left of the periodic table. **Francium (Fr)** is the most most reactive metal. It is the most **metallic.**

**Nonmetals** react with both metals and nonmetals; nonmetals get more reactive as you go up and to the right of the periodic table. **Fluorine (F)** is the most reactive nonmetal. It is the most **non-metallic.**

**Metalloids** react with either metals or nonmetals but it depends on the metalloid.

**Noble Gases** Unreactive

**Exceptions:**  Fluorine is so reactive that it can even react with certain Noble Gases.

**Groups Group Names Special Properties**

**1 Alkali metals** Never found alone in nature (too reactive), can be made from electrolysis of a salt or other chemical reaction. React violently with water, most reactive metals

**2 Alkaline Earth** Never found alone in nature (too reactive), Second most reactive metals

**3 - 11 Transition metals** Can be found alone in nature; salts made with transition metals have colors

**17 Halogens** Never found alone in nature, all are diatomic, most reactive nonmetals

**18 Noble gases** Always found alone in nature, Unreactive

**Salts** are compounds *usually* made from metals and nonmetals. (There are some exceptions).

**Allotropes** are versions of the *same element* but with a *different molecular structure*. This gives them both different physical and chemical properties. Examples: O2 (oxygen) and O3 (ozone)

Carbon can be found as, charcoal, graphite, diamond and Buckminster fullerene