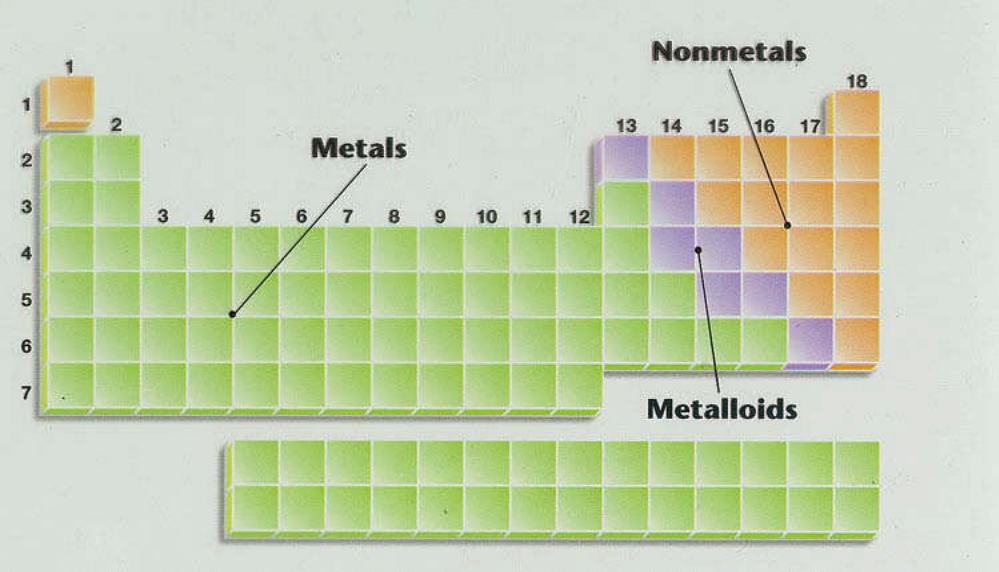
Metals, Nonmetals & Metalloids



Metals, Nonmetals, & Metalloids

Most periodic tables contain a stairstep line which allows you to identify which elements are metals, nonmetals, and metalloids. Following are descriptions of each of the three types of materials.

Metals

Most elements are metals. 88 elements to the left of the stairstep line are metals or metal like elements.

Physical Properties of Metals:

- Luster (shininess)
- Good conductors of heat and electricity
- High density (heavy for their size)
- High melting point
- Ductile (most metals can be drawn out into thin wires)
- Malleable (most metals can be hammered into thin sheets)

Chemical Properties of Metals:

- Easily lose electrons
- Corrode easily. Corrosion is a gradual wearing away. (Example: silver tarnishing and iron rusting)

Nonmetals

Nonmetals are found to the right of the stairstep line. Their characteristics are opposite those of metals.

Physical Properties of Nonmetals:

- No luster (dull appearance)
- Poor conductor of heat and electricity
- Brittle (breaks easily)
- Not ductile
- Not malleable
- Low density
- Low melting point

Chemical Properties of Nonmetals:

- Tend to gain electrons

Since metals tend to lose electrons and nonmetals tend to gain electrons, metals and nonmetals like to form compounds with each other. *These compounds are called ionic compounds.* When two or more nonmetals bond with each other, they form a covalent compound.

Metalloids

Elements on both sides of the zigzag line have properties of both metals and nonmetals. These elements are called metalloids.

Physical Properties of Metalloids:

- Solids
- Can be shiny or dull
- Ductile
- Malleable
- Conduct heat and electricity better than nonmetals but not as well as metals