**Periodic Table Summary**

**Periodic Table**- an organizational system for elements. Elements are arranged in rows going from right to left called **Periods**and columns going up and down called **Groups**.

**General Information**

* Atomic masses generally increase as you move from left to right, top to bottom
* The atomic number determines the number of electrons and protons in the atom
* The atomic mass minus the atom number determines the number of neutrons in the atom
* The arrangement of the electrons determine the chemical properties of an element
* The smallest particle of an element is called an atom
* An element is a pure substance
* Regardless of the amount of a certain element, it will still have identical properties (ex. Melting point, boiling point, freezing point, density…)
* Elements are considered the building blocks to everything because they can be combined to make different substances

**Periods (rows)**

* Elements in the same period have the same number of energy levels.
* The period number is the same as the number of energy levels

**Groups (columns)**

Elements in the same group have similar properties because they have a similar electron arrangement.

* **Metals**are on the left hand side of the table
* **Non-metals**are on the right-hand side of the table.
* **Metalloids**are between the metals and non-metals.

**Groups/Valence Electrons**

* Group I or Alkali metals - Elements whose atoms have 1 outer-shell electron; they are very *reactive*
* Group II or Alkaline Earth Metals - Elements whose atoms have 2 outer-shell electrons
* Group III - Elements whose atoms have 3 outer-shell electrons
* Group IV - Elements whose atoms have 4 outer-shell electrons
* Group V - Elements whose atoms have 5 outer-shell electrons
* Group VI - Elements whose atoms have 6 outer-shell electrons
* Group VII or Halogens - Elements whose atoms have 7 outer-shell electrons
* Group 0, sometimes called group 8 or Noble Gases - Elements whose atoms have full outer shells so they are very *unreactive*.