Chemistry - Notes

- **Chemistry is the study of matter and energy & the interactions between them.**
- **Chemistry tends to focus on the properties of substances & the interactions between different types of matter, particularly reactions that involve electrons.**

  *** It helps you understand the world around you.**
  *** Chemistry is the explanation for everyday things**

The Structure of an Atom

- **Atoms are all around you.**
  They make up the air you breathe, the chair you sit on, the clothes you wear, the floor you walk on.
  Every element of the Periodic Table is made up of protons, neutrons, and electrons.
  An atom can be defined as smallest part of element that maintains properties.
- **Atoms are tiny units that can not be broken down into smaller parts during a normal chemical reaction.**
- **(matter is anything that has both mass and volume (takes up space).**
- **Atoms are the bldg blocks of molecules that cannot be subdivided.**

* *3 subatomic particles* of atoms:

*** <u>Proton</u> + (positive) P**
*** <u>Neutron</u> (neutral) N**
*** <u>Electron</u> – (negative) e –**

- **The # of protons is the atomic number.**
  <u># P = # e</u>

- **The # of protons & neutrons is the mass number**

  - **# P & # e is a unique number for each atom**

- **Every atom has a nucleus.**
- **If an atom has > protons then it has a positive charge.**
- **If an atoms has > electrons then it has a negative charge.**
- **An atom *with a charge* is an ion. (Neutron is not an ion.)**
  *** If the # of protons = the # of neutrons the atom is table.**
  *** An <u>Isotope</u> is defined as an atom of the same element that has a different number of neutrons.**