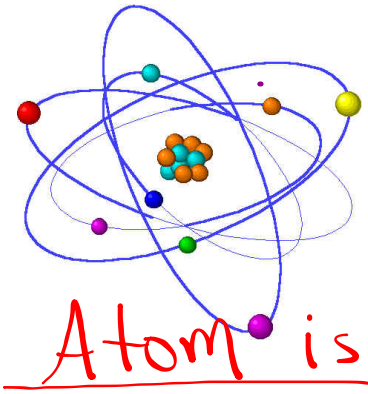
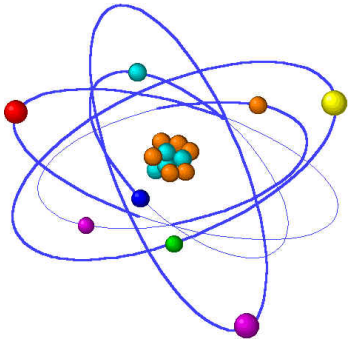


What is an Atom?

the smallest particle of an element

cannot be broken down during normal physical or chemical changes

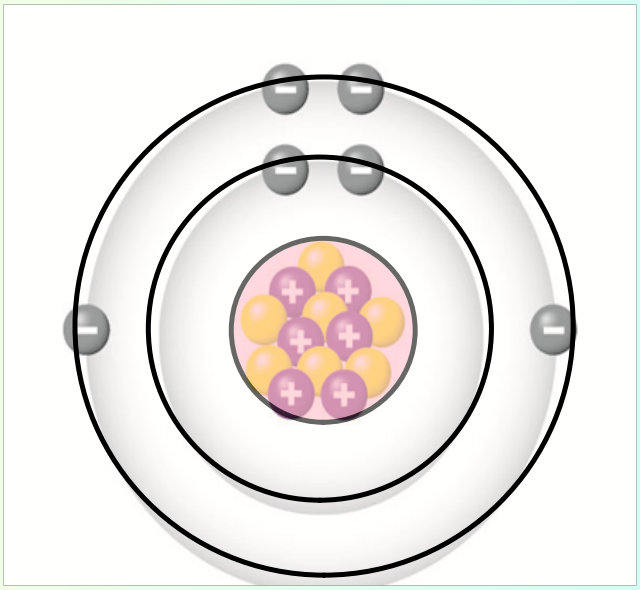
building blocks of all matter

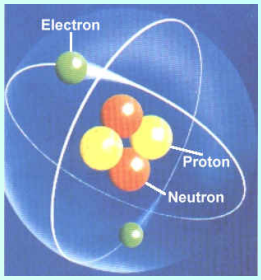


Most of an atom is empty space, filled with quickly moving electrons. The positive nucleus is so small that it takes up only a tiny fraction of size of the atom. Yet almost all of the atom's mass is concentrated in this nucleus, which contains protons.

Parts of an Atom

Subatomic Particles = **the particles which an atom is made of.**





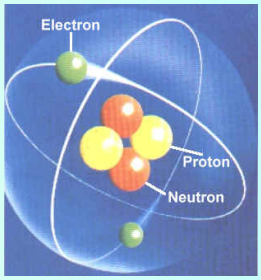
Parts of an Atom

There are 3 subatomic particles in an atom

1) **Protons**: positively charged particles with a relative mass of 1, located in the nucleus (important because they tell what atom it is)

2) **Neutrons**: neutral particles with a relative mass of 1, located in the nucleus

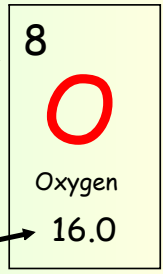
3) **Electrons**: negatively charged particles with a relative mass of approximately 0, found in the orbit around the nucleus



Counting subatomic particles – Important points page 87-88

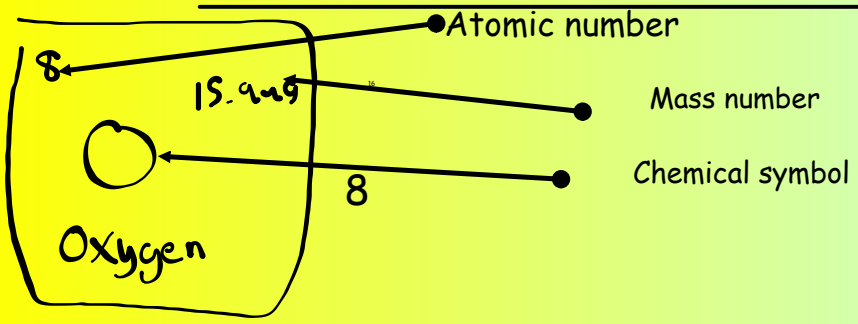
of Protons = atomic #

- The number of **Protons** = atomic number
- The number of **Electron** = Atomic Number
- **Mass number** = # of **Protons** + # of **Neutrons**



- Number of **Neutrons** = Mass number – atomic number

Standard Atomic Notation



We can represent the number of subatomic particles by using Standard Atomic Notation, an internationally recognized system that allows anyone to communicate information about any atom.

electrons =

Protons =

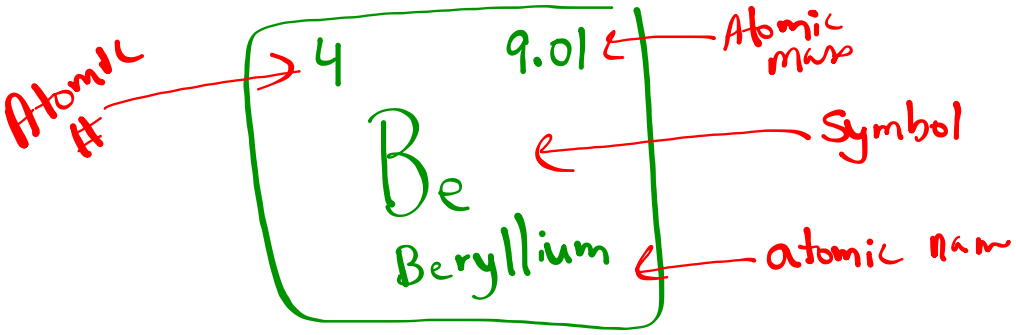
Neutrons =

$^{27}_{13}Al$

electrons =

Protons =

Neutrons =


Atomic #
4
9.01
Atomic mass
Be
Symbol
Beryllium
atomic name