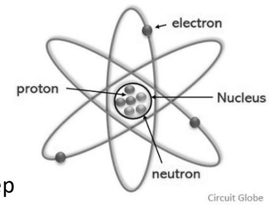
Subatomic Particles

The modern atomic model contains protons, electrons, and neutrons *(+, -, and neutral)*

Protons
In nucleus (*center of atom*), identifies atom, keep electrons within the outer portion of the atom

Electrons
Atomic communication, connection to other atoms, balancing protons in the atom

Neutrons
Barrier between protons/electrons, sheilding



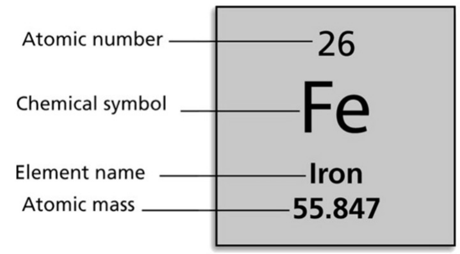
Basic Structure of the Atom

Includes electrons (e^-), protons (p+), and neutrons (n^o)

2

Elements

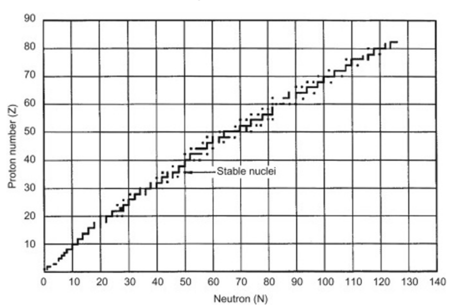
The *atomic number* (Z, # protons, p^+) can be used to identify the type of element being studied on the periodic table



3

Atomic Stability

Atomic Stability is based on ratio of protons : neutrons



Z-Ratio
(*Z = Atomic Number*)

The ratio of protons to neutrons (p^+:n^o) in a stable atom ranges from 1:1 (*small atoms*) to 1:1.5 (*large atoms*)

4

Isotopes

Atoms can commonly have more than one ratio of protons and neutrons that are stable. The equations below will help calculate the number of each subatomic particle in an isotope of an element

Atomic Number = # Protons (p^+) [*Type of Atom*]

 # Protons (p^+) = # Electrons (e^-) [*Atoms Neutral*]

Mass Number = # Protons + # Neutrons [*Isotope Mass*]

 # Neutrons (n^o) = Mass Number - Atomic Number

5