Atomic Properties

Period: any row on the periodic table (2,8,8,18,18,32,32) – like the shells

Family or Group: any column on the periodic table (eg Alkali Metals). The main group of elements has eight families that are numbered I, II, III, IV, V, VI, VII, VIII

Valence Electrons: the electrons in the outermost shell of the atom (the # electrons is the same as the group # for all families in the main group of elements)

ATOMIC RADIUS: the distance from the nucleus to the outermost valence electrons (measured in Å – angstrom, 1 m = 1 x 10^{10} Å)

IONIZATION ENERGY: the amount of energy required to remove the most loosely held electron in an atom (measured as a potential energy in V – volts)

1^{st} ionization energy – removal of the first electron

2^{nd} ionization energy – removal of a second electron, etc.

ELECTRONEGATIVITY: a quantitative measure of how strongly an atoms attracts extra electrons (measured in Paulings)

Core Charge: the sum of the nuclear charge (+) and inner shell electrons (–) and is the charge the holds the valence shell electrons. In all cases the core charge is positive and has the same numeric value as the group number. Core charge increase from 1 to 8 as you go across any period in the periodic table.