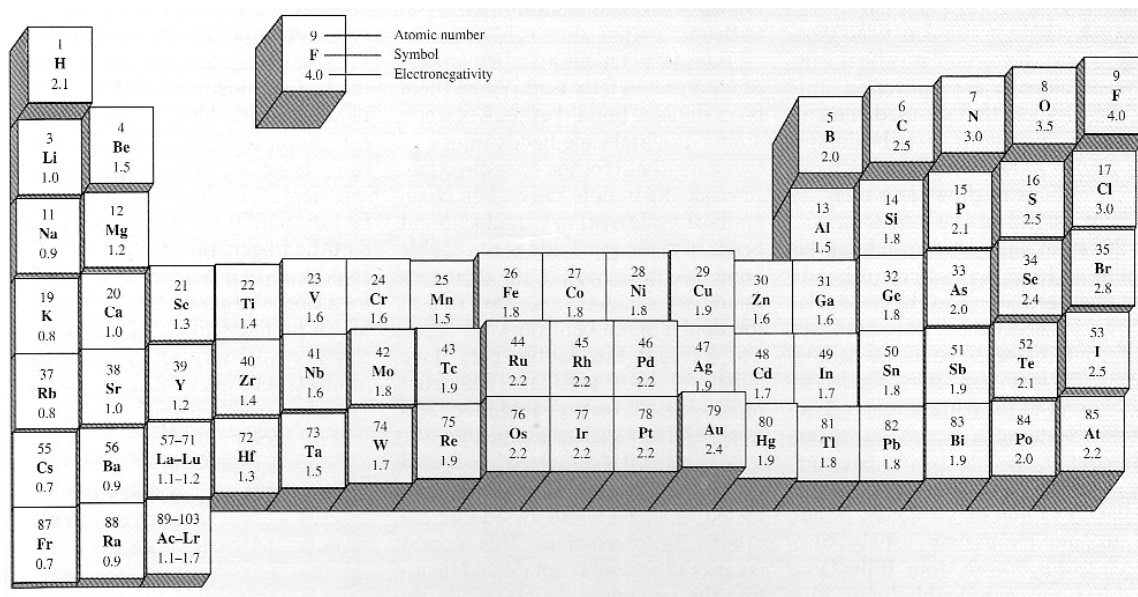


PERIODIC TRENDS

Chem 192 — Cañada College

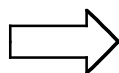
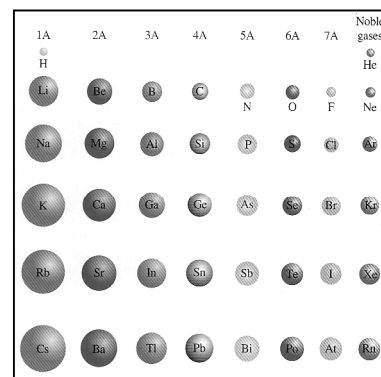


As you go down the periodic table...

ATOMIC RADIUS INCREASES—Because with each period we add a new layer of orbitals, each layer is wrapped outside of the one before making the atom larger ($n=1, n=2, n=3$)...

IONIZATION ENERGY DECREASES— Because the outermost electrons are farther from the nucleus, so it's attraction is lessened reducing the energy needed to pull off that electron.

ELECTRONEGATIVITY DECREASES—Because the first unfilled orbital is farther from the nucleus, so it's ability to pull in a new electron is weakened.



As you go across the periodic table...

ATOMIC RADIUS DECREASES—Because the orbitals in a period are all about the same distance from the nucleus, but as you increase the number of protons the nuclear charge is increased, increasing it's pull on all the electrons and shrinking the atom.

IONIZATION ENERGY INCREASES— Because the outermost electrons are about the same distance from the nucleus but as you increase the number of protons the nuclear charge is increased, so it's attraction is strengthened increasing the energy needed to pull off an electron.

ELECTRONEGATIVITY INCREASES—Because the first unfilled orbital is about the same distance from the nucleus but as you increase the number of protons the nuclear charge is increased, so it's ability to pull in a new electron is strengthened