

## Bare Bones Chemistry Review

### Unit 6 - The Periodic Table

The modern periodic law classifies elements according to atomic numbers

On the periodic table the nonmetals are located to the right of the metals

When you count how many periods there are on the periodic table remember that the Lanthanides and Actinides are NOT separate periods.

You need to know that Periods are the horizontal rows and Groups (or families) are the vertical columns.

You should also know that Groups 1 and 2 have "s" orbitals filling, Groups 13 through 18 are filling "p" orbitals, and the Transition metals are filling "d" (outer transitions) and "f" orbitals (inner transition)

Atoms in the same Period get smaller going from left to right because those on the right have a greater number of protons which pull the electrons in closer.

Going down a Group or family, the atoms get larger because each period going down adds a new energy level

The electron configurations of the most stable elements have completely filled "s" and "p" ( $s^2p^6$ ) energy sublevels

You need to know that electronegativity is the measurement of the attraction that atoms have for electrons. Electronegativity increases going from left to right and decreases going from top to bottom on the Periodic table.

That would mean that metals have the smallest electronegativity and nonmetals have the largest electronegativity.

Ionization energy measures how much energy is needed to remove an electron from an atom. That means that atoms with high electronegativity would also have a high ionization energy.

The electron configurations of the noble gases show that the outermost s and p sublevels are completely filled.

When atoms form negative ions the radius always gets greater because the number of electrons increases

The Representative elements are Groups 1, 2...13, 14, 15, 16, 17 and 18.

Groups 4 through 12 are called the Transition metals.

The radius of a positive ion is always less than the radius of its neutral atom because the number of electrons is decreased.

Each period number in the periodic table corresponds to a principal energy level.

Positive ions are called cations and negative ions are called anions.

Metals are elements that are good conductors of heat and electric current.