

Summary of Periodic Trends:

It's called a periodic table for a reason. When we observe at the organization of the periodic table, we will find that the elements are listed in order by increasing atomic number (number of protons), until to the rare earth elements, which are placed below the main periodic table. This is the fact that the elements have the periodic function in their properties. The ordering of the elements allows us to predict some of the properties of the elements relative to each other:

Atomic Radius:

Increases moving left to right

Decreases moving top to bottom

Ionization Energy:

Decreases moving left to right

Increases moving top to bottom

Electron Affinity:

- (a). **Alkaline earth** elements have low electron affinities
- (b). **Halogens** have high electron affinities
- (c). **Noble gases** have electron affinities near zero
- (d). **Other element** groups tend to have low electron affinities

Electro-negativity:

- (a). Increases moving left to right
- (b). Decreases moving top to bottom

Summary of Periodic Table Trends at a Glance:

Moving Left → Right Across a Period:

- (a). Atomic Radius Decreases (b). Ionization Energy Increases
- (c). Electro-negativity Increases

Moving Top → Bottom Across a Group:

- (a). Atomic Radius Increases (b). Ionization Energy Decreases
- (c). *Electro-negativity Decreases*

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