

PERIODIC TRENDS

Atomic Radius:

- Definition: Half of the distance between nuclei in covalently bonded diatomic molecule.
- Radius decreases across a period.
 - o Increased effective nuclear charge due to decreased shielding.
- Radius increases down. A group.
 - o Each row on the periodic tables adds a “shell” or energy level to the atom.

Ionization Energy:

- Definition: The energy required to remove an electron from an atom.
- Tends to increase across a period.
 - o As radius decreases across a period, the electron you are removing is closer to the nucleus and harder to remove.
- Tends to decrease down a group.
 - o Outer electrons are farther from the nucleus and easier to remove.

Electronegativity:

- Definition: A measure of the ability of an atom in a chemical compound to attract electrons.
- Electronegativity tends to increase across a period.
- As radius decreases, electrons get closer to the bonding atom's nucleus.
 - o As radius decreases, electrons get closer to the bonding atom's nucleus.
- Electronegativity tends to decrease down a group or remain the same.
 - o As radius increases, electrons are further from the bonding atom's nucleus.

Ionic Radii:

Cations:

- Positively charged ions formed when an atom of metal loses one or more electrons.
- Smaller than the corresponding atom.

Anions

- Negatively charged ions formed when nonmetallic atoms gain one or more electrons.
- Larger than the corresponding atom.