

Name _____

The Electrons that Make the Magic Happen: The Role of Valence Electrons in Chemical Bonding

Short Answer Key

1. Valence electrons are involved in forming chemical bonds between atoms, which help atoms achieve stability by filling their valence shells.
2. In covalent bonds, atoms share valence electrons, while in ionic bonds, one atom donates valence electrons (becoming a cation), and another atom accepts them (becoming an anion).
3. Elements in the same group have the same number of valence electrons, which determines their chemical behavior and their ability to bond with other atoms in similar ways.
4. The valence electron configuration of an element in Group 17 is 7 valence electrons.
5. An example is water (H_2O), where two hydrogen atoms and one oxygen atom share their valence electrons to create a covalent bond, forming a molecule.

