

Name _____

Molecule Marvels: The Fascinating Concept of Resonance

Short Answer Key

1. Resonance in molecules involves the shifting of double bonds' positions, creating multiple equally valid structures, as seen in benzene. Electron delocalization plays a crucial role by spreading out electron density within the hexagonal ring.
2. Molecules with resonance structures are more stable because electron density is spread out, reducing the buildup of charges in one area.
3. Understanding resonance in chemistry is important because it helps predict molecule behavior and reactivity, guiding the development of materials and drugs.
4. Nitrate ion (NO_3^-) is an example with resonance. It has multiple resonance forms due to the shifting of double bonds between nitrogen and oxygen atoms.
5. Delocalization of electrons contributes to stability by preventing the accumulation of negative charges and spreading out electron density.

