

Name _____

Unlocking the Secrets of Atomic Mass: Why It Matters

Short Answer Key

1. Atomic mass represents the average mass of an element's atoms, accounting for the presence and abundance of its isotopes. It is essential in chemistry because it predicts how elements interact in chemical reactions.
2. Molar mass is calculated by numerically equal to the atomic mass of an element or compound. It is significant in chemical calculations, such as stoichiometry, as it helps convert between mass and moles of substances.
3. The periodic table is organized based on atomic number and atomic mass. Elements are arranged in ascending order of atomic number, and within groups (columns), they are often arranged in ascending order of atomic mass. This organization helps scientists quickly locate elements and predict their properties.
4. Elements with different atomic masses represent different elements because atomic mass considers both the mass and abundance of an element's isotopes. Even if two isotopes have the same number of protons, their differing numbers of neutrons result in distinct atomic masses and, therefore, different elements.
5. Atomic mass has applications beyond chemistry in fields such as physics, astronomy, and environmental science. For example, it helps analyze the composition of celestial bodies, study nuclear reactions, and assess environmental pollution.

