Name _____

Rules in Classifying Elements Answer Key

1. Elements in the same group have the same number of valence electrons.

2. The octet rule states that atoms tend to gain, lose, or share electrons to achieve a stable configuration with eight valence electrons.

3. The noble gases, located in Group 18, include helium (He), neon (Ne), argon (Ar), krypton (Kr), xenon (Xe), and radon (Rn).

4. Atomic radius generally increases as you move down a group due to the addition of new electron shells.

5. Metallic character generally decreases as you move from left to right across a period in the periodic table.

6. The main groups include alkali metals (Group 1), alkaline earth metals (Group 2), transition metals (Groups 3-12), and the p-block elements (Groups 13-18).

7. The lanthanides and actinides are known as the inner transition metals and are placed below the main body of the periodic table. They have unique electron configurations and exhibit a range of properties.

8. Ionization energy generally increases across a period from left to right due to increasing nuclear charge and decreasing atomic radius.

9. Alkaline earth metals, located in Group 2, are shiny, silvery-white metals that have two valence electrons and are somewhat reactive.

10. The periodic table allows us to observe trends and patterns in the chemical properties of elements, enabling predictions of their reactivity based on their position and electron configurations.