Chemistry I Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Core and Valence Electrons

**Introduction:** The valence electrons are the electrons in the outermost principle energy level. The outermost electrons are always in the “s” and “p” orbitals. Since the maximum number of electrons possible in the s and p orbitals is eight (2 from the s and 6 from the p), there can be no more than eight valence electrons.

**Directions:** Determine the electron configuration for the following elements. Then, determine the number of core (closest to the nucleus) and valence (outermost) electrons for each element.

Example:

Carbon 🡪1s22s22p2

Core Electrons \_\_2\_\_ Valence Electrons \_\_4\_\_

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| --- |
| 1. Oxygen

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Fluorine

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Calcium

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Nitrogen

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Iron

 Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Iodine

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Magnesium

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Argon

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Copper

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Sulfur

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Barium

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Xenon

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Potassium

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Lithium

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |
| 1. Phosphorus

Core Electrons \_\_\_\_\_ Valence Electrons\_\_\_\_\_ |

1. Look at the elements that are within the same family (column). Do you see any connections between them?