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?