Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_Homeroom: \_\_\_\_\_\_\_\_ Date:\_\_\_\_\_\_\_\_\_\_ **3.9**

**Valence Electrons and Lewis Dot Structures (SPI.9.9)**

|  |  |
| --- | --- |
| ***Key Point*** | ***Notes*** |
| **Valence Electrons** | * **\_\_\_\_\_\_\_\_\_ electrons are electrons in the \_\_\_\_\_\_\_\_\_\_\_\_ energy level**
	+ They are the furthest from the nucleus
	+ The maximum number of valence electrons are element can have is \_\_
* **The number of valence electrons of an element corresponds to its \_\_\_\_\_\_\_\_ number.**
* Group 1 has \_\_\_ valence electron
* Group 2 has \_\_\_ valence electrons
* Groups 3-12 number of valence electrons varies
* Group 13 has \_\_\_ valence electrons
* Group 14 has \_\_\_ valence electrons
* Group 15 has \_\_\_ valence electrons
* Group 16 has \_\_\_ valence electrons
* Group 17 has \_\_\_ valence electrons
* Group 18 has \_\_\_ valence electrons

 * Valence electrons predict how an element will chemically \_\_\_\_\_\_\_\_\_ with other elements.
* Elements within the \_\_\_\_\_\_ group of the periodic table share similar chemical characteristics and react with other elements similarly as a result of possessing the \_\_\_\_\_\_ number of valence electrons.
 |
| **Lewis Dot Structures** | **Lewis Dot structures** only show the number of valence electrons in an atom* Valence electrons are the only electrons involved in \_\_\_\_\_\_\_\_\_\_
* Valence electrons are the most important electrons
* In Lewis Dot Structures, the “\_\_\_\_\_” represent valence electrons (e-)

***Steps to Drawing Lewis Dot Structures:***1. Write the \_\_\_\_\_\_\_\_\_\_ \_\_\_\_\_\_\_\_\_ of the element
2. Determine \_\_\_\_\_\_\_\_\_\_\_ of valence electrons
3. Place single \_\_\_\_\_ on right side and add dots one at a time counter-clockwise.

*Guided Examples:* |
| **So What?!** |  |

**“We Own This” (Guided Practice):**

Use M&M’s to show the Lewis Dot Structure for the following:

Cl

Rb

S

I

**“I Own This” (Independent Practice):**

1. Calculate the number of *valence electrons* in the following elements:

* Boron (B)
* Frankium (Fr)
* Tin (Sn)
* Radium (Ra)

2. Draw the Lewis Dot Structures for the following elements:

1. Boron 2. Arsenic 3. Argon

As

Ar

B

3. Fill in the missing information for the following elements (atomic #, element name, atomic mass, # of protons, # of neutrons, # of electrons, Bohr model, and Lewis Dot structure).

**“Own This Even Further” (Early Finisher):** Work on your “Hard Work” RAFT.