**Unit 3: Dot, Dot…Lewis Dot**  Last Name, First Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

The electrons in the highest energy level (\_\_\_\_\_most energy level) are called \_\_\_\_\_\_\_\_\_\_\_\_ electrons. Valence electrons are *always* in the highest energy level. These are the electrons that participate in forming \_\_\_\_\_\_\_\_\_ bonds.

***I Do:*** Draw the Bohr diagram for Hydrogen:

 How many electrons are in the highest energy level? \_\_\_

 How many valence electrons does Hydrogen have? \_\_\_\_

 Draw the Lewis dot structure for Hydrogen

***We Do:*** Draw the Bohr diagram for Helium:

 How many electrons are in the highest energy level? \_\_\_\_

 How many valence electrons does Helium have? \_\_\_\_\_

 Draw the Lewis dot structure for Helium

***You Do:*** With your table group…

Draw the Bohr diagram for Lithium:

 How many electrons does are in the highest energy level? \_\_\_\_

 How many valence electrons does Lithium have? \_\_\_\_\_

 Draw the Lewis dot structure for Lithium

Draw the Bohr diagram for Beryllium:

 Draw the Lewis dot structure for Beryllium:

**Independent Practice:**

Look at the Lewis dot diagrams for the following elements. Label each with the group number.



1. Do you notice a pattern in the valence electron numbers of these atoms? YES NO

Please describe a pattern if you see one:

1. Please complete the table below for valence electron number for each periodic table group of the representative elements.

An atom will gain or lose electrons to get to a full octet. A full octet is 8 valence electrons.

For the metals (groups 1 and 2) would they gain or lose electrons to get to a full octet?

\_\_\_\_\_\_

Groups 16 and 17? \_\_\_\_\_\_

|  |  |
| --- | --- |
| Group Number | Valence e- |
|  1 |  |
| 2 |  |
| 13 |  |
| 14 |  |
| 15 |  |
| 16 |  |
| 17 |  |
| 18 |  |

When an atom loses electrons (think metals giving up electrons to have a full octet) what kind of ion is formed? \_\_\_\_\_\_\_\_\_\_\_

Nonmetals gain e- to have a full octet? (ion type) \_\_\_\_\_\_\_\_\_\_

On the periodic table to the right, please write the charges of the ions each of the representative groups form.