Name: **Phusi 2 Practice 3**

Target	1	2 (all of 1 plus)	3 (all of 2 plus)	4 (all of 3 plus)
LE 5.7 Preparedness	Does not complete formative or summative in an effortful and timely manner, is not engaged, does not arrive on time with class materials ready to learn, does not communicate when issues arises	Completes formative or summative in an effortful or timely manner, is sometimes engaged, sometimes arrives on time with class materials ready to learn, sometimes communicates when issues arise	Completes formative or summative in an effortful and timely manner, remains engaged, arrives on time with materials ready to learn, communicates when issues arise	Completes formative or summative in an effortful and timely manner, remains engaged, arrives on time with materials ready to learn, communicates when issues arise, and is reflective on strengths and challenges within your preparedness skill
LE 5.6 Precision	Recognizes the importance of products that are planned, edited, and completed with care	Attempts products that are planned, edited, and completed with care	Creates products that are planned, edited, and completed with minimal errors	Creates products that are planned, edited, and completed free from errors or need for revision
Phusikos 2	I can **identify** that electrons orbit the nucleus in shells	I can **identify** the number of electrons that are in each shell and orbital	I can **model** the full outer shell model for atoms in the first three rows of the periodic table.	I can **use** the periodic table to determine the number of valence electrons, ~~and in turn, use this information to **model** chemical bonds.~~
MP2 Atoms, Bonding	I can diagram the shell structure of an atom and an understanding of valence electrons	(all of 1 plus) I can use the periodic table to predict properties of atoms of elements based on patterns of electrons in atoms	(all of 2 plus) I can predict and diagram bonding between atoms	(all of 3 plus) Nailed it!

<u>Valence Electrons</u>:

Definition: Diagram:

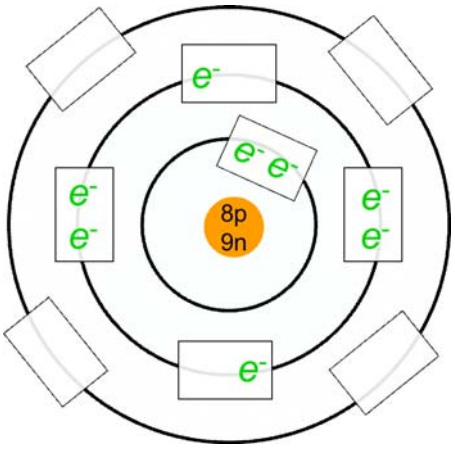
Why are valence electrons important?

1. Valence electrons can form chemical bonds with other atoms because an atom "wants" to have a _____ outer shell of electrons.

2. An atom can get a _____outer shell when it _____ or _____ or _____electrons.

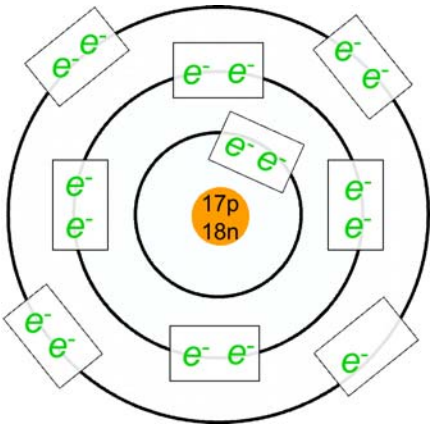
3. Atoms with a full outer shell of valence electrons are _____to form chemical bonds.

4. Atoms with less than a full outer shell of valence electrons are _____ to form chemical bonds.

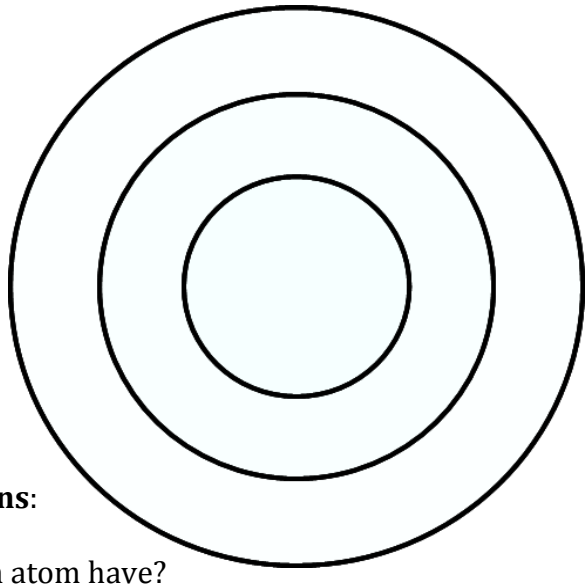


Valence Electron Practice

1. Oxygen
   a. How many valence electrons does an oxygen atom have?
   b. How many additional electrons does oxygen "want" to have a full outer shell?
   c. How many electrons does an oxygen atom "want" to lose to have a full outer shell ?
   d. Does the atom need to gain fewer or lose fewer electrons to get a FOS ?



2. Chlorine
   a. How many valence electrons does a chlorine atom have?
   b. How many additional electrons does chlorine "want" to have a full outer shell?
   c. How many electrons does an chlorine atom "want" to lose to have a full outer shell?
   d. Does the atom need to gain fewer or lose fewer electrons to get a FOS ?



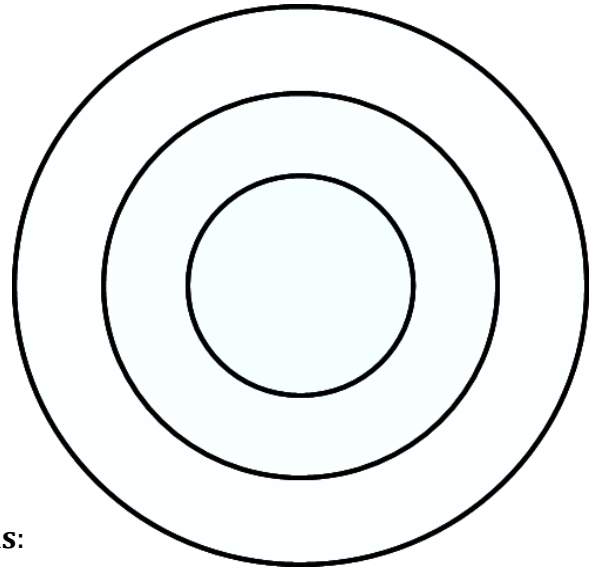
3. Draw a diagram of a carbon atom.

Atomic Number ____
  Number of *Protons* _____
Mass # ____
  Mass # - # Protons = Number of *Neutrons* ____
Number of *Electrons* ____
  # Electrons in 1st shell ____
  # Electrons in 2nd shell ____
  # Electrons in 3rd shell ____

Based on your diagram answer the following questions:

   a. How many valence electrons does a carbon atom have?

   b. How many additional electrons does a carbon atom "want" to have a full outer shell?



4. Draw a diagram of a neon atom.

Atomic Number ____
  Number of *Protons* _____
Mass # ____
  Mass # - # Protons = Number of *Neutrons* ____
Number of *Electrons* ____
  # Electrons in 1st shell ____
  # Electrons in 2nd shell ____
  # Electrons in 3rd shell ____

Based on your diagram answer the following questions:

   a. How many valence electrons does a neon atom have?

   b. How many additional electrons does a neon atom "want" to have a full outer shell?