Name: _____ **Phusikos 2 Practice 4**

Target	1	2 (all of 1 plus)	3 (all of 2 plus)	4 (all of 3 plus)
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.	I can **identify** the number of electrons that are in each orbital	I can **model** the full outer shell model for atoms with atomic # 1-18	I can **use** the periodic table to determine the number of valence electrons
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!

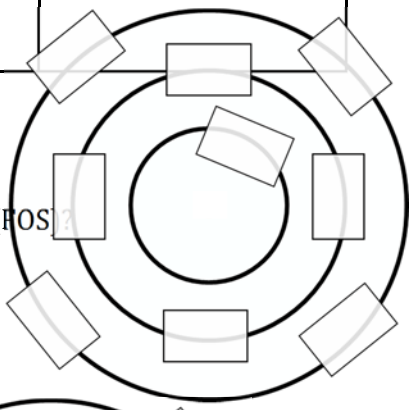
1. Phosphorus (P) atomic # ____ mass # _____

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

b. How many electrons does a phosphorus atom want to gain to get a full outer shell (FOS)?

c. How many electrons does a phosphorus atom want to lose to get a FOS?

d. Which is it more likely to do, gain or lose electrons to get a FOS?



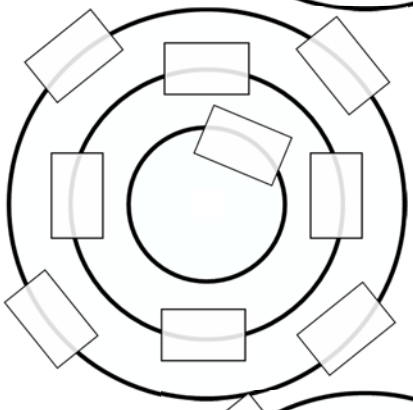
2. Fluorine (F) atomic # _____ mass # _____

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

b. How many electrons does a fluorine atom want to gain to get a FOS?

c. How many electrons does a fluorine atom want to lose to get a FOS?

d. Which is it more likely to do, gain or lose electrons to get a FOS?



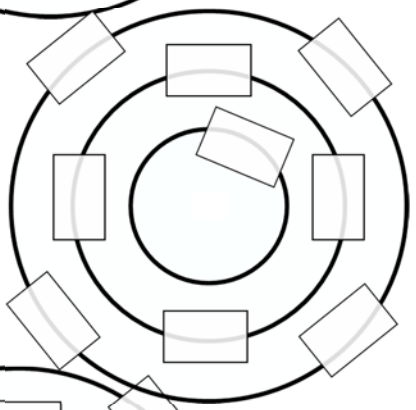
3. Sodium (Na) atomic # _____ mass # _____

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

b. How many electrons does a sodium atom want to gain to get a FOS?

c. How many electrons does a sodium atom want to lose to get a FOS?

d. Which is it more likely to do, gain or lose electrons to get a FOS?



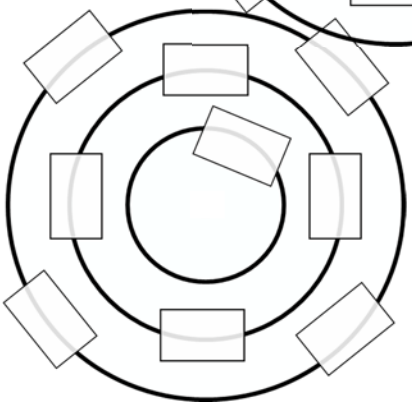
4. Boron (B) atomic # _____ mass # _____

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

b. How many electrons does a boron atom want to gain to get a FOS?

c. How many electrons does a boron atom want to lose to get a FOS?

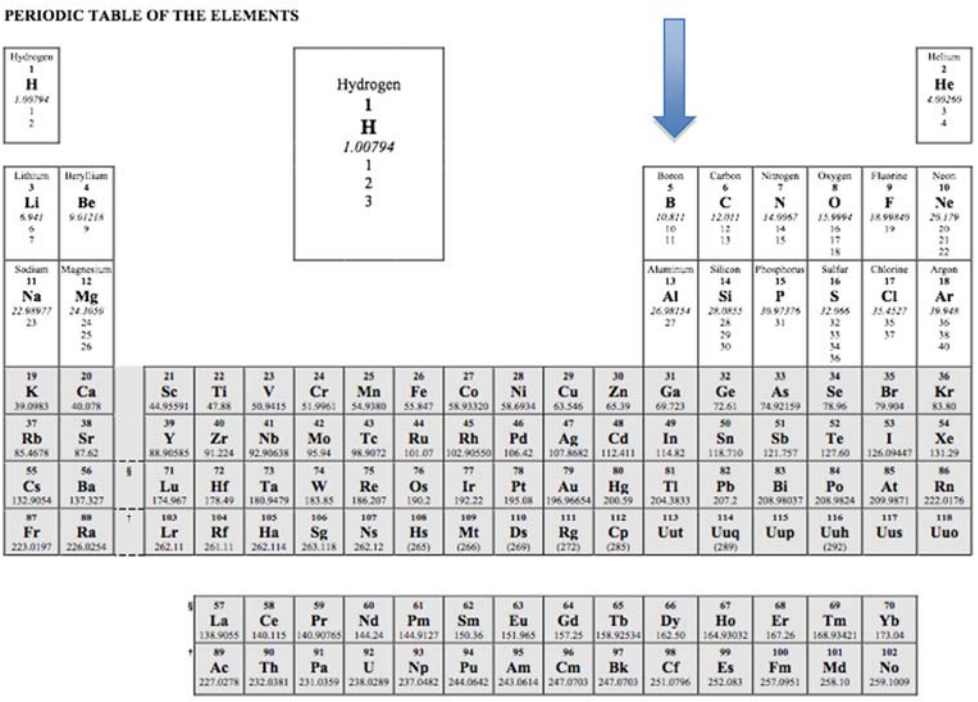
d. Which is it more likely to do, gain or lose electrons to get a FOS?



5. Mix and Match the element with the corresponding number of valence electrons using your periodic table.

Nitrogen (N)	1
Magnesium (Mg)	2
Aluminum (Al)	3
Lithium (Li)	4
Sulfur (S)	5
Silicon (Si)	6
Neon (Ne)	7
Chlorine (Cl)	8

6. All of the elements in the column indicated by the arrow have _____ valence electrons.



7. Helium shares properties with the elements in the last column of the P.T. and so is "with" the elements in the last column. Other than Helium, the atoms of the elements in the last column have _____ valence electrons. Helium atoms have _____ valence electrons.

Explain why Helium belongs with the elements in the last column based on the structure of the atom.