Name:_____ Period:_____ Page:_____

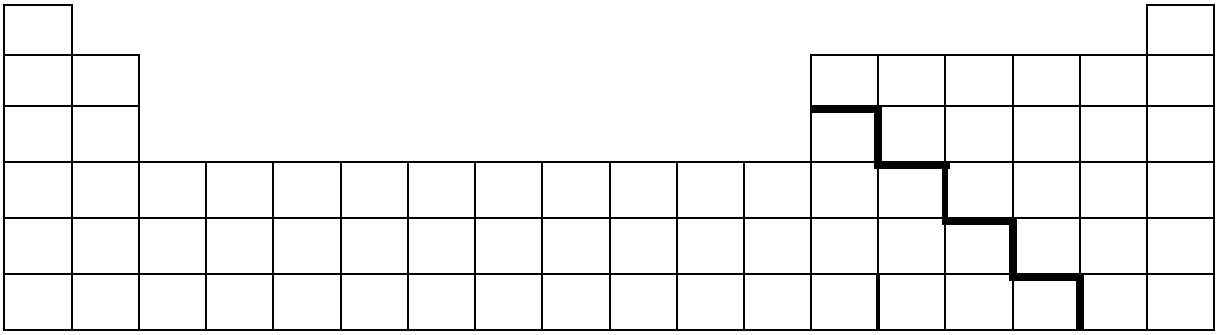
Bonding Pogil Style

Part 1- Classification of Bonds

Model #1

For each of the following compounds, place the symbol of the first element in its spot on the periodic table using red ink. Then, place the symbol of the second element in its spot on the periodic table using black ink.

NaCl LiBr KF $ZnCl_2$ Fe_2O_3 CuI_2 Al_2S_3



1. What do you notice about the location of the first element in the compounds?

2. Based on your knowledge about the periodic table, would you classify the first element as a metal or nonmetal?

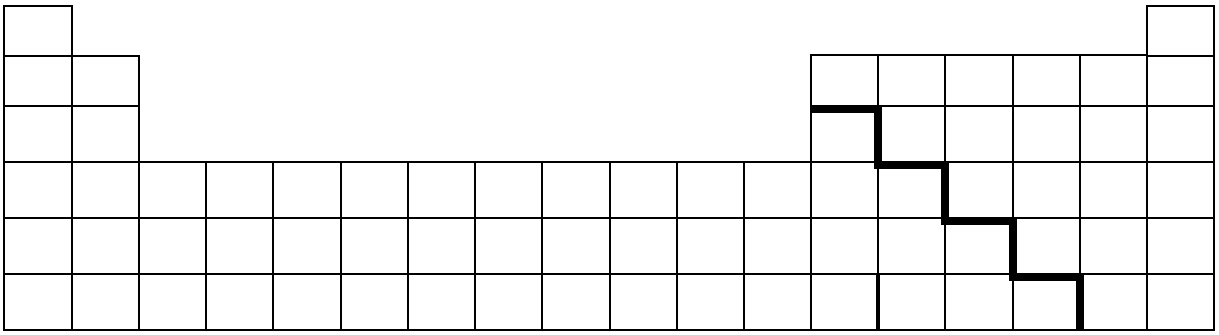
3. What do you notice about the location of the second element in the substance?

4. Based on your knowledge about the periodic table, would you classify the second element as a metal or nonmetal?

Model #2

For each of the following compounds, place the symbol of the first element in its spot on the periodic table using a red ink. Then, place the symbol of the second element in its spot on the periodic table using black ink.

CCl_4 P_2O_5 N_2O_4 NI_3 PBr_3 F_2Se H_2O



5. What do you notice about the location most of the first elements in each compound in model 2? What is the one exception?

6. Based on your knowledge about the periodic table, would you classify the first element as a metal or nonmetal?

7. What do you notice about the location of the second element in each substance?

8. Based on your knowledge about the periodic table, would you classify the second element as a metal or nonmetal?

Applying the Models

9. Model 1 substances are called **ionic compounds** and Model 2 compounds are called **covalent compounds or molecular compounds**. Write a simple rule that will allow you to classify compounds as ionic or covalent on the basis of what you have learned from the model.

10. Did the subscripts provide any insight into determining whether a substance is ionic or covalent? Explain your answer.

11. Are the compounds listed below ionic or covalent compounds. Use the rule you wrote for #9 to explain why. $Mg(OH)_2$ $LiHCO_3$ $CuSO_4$ $AlPO_4$ K_2CO_3 $Mg_3(PO_4)_2$

Compound Identification Practice

12. Fill in the table below using the rule you wrote in #9.

Formula	1st Element (M or NM)	2nd Element (M or NM)	Classification (ionic or covalent)
LiBr			
SF_6			
$C_6H_{12}O_6$			
Ag_2O			
OF_2			

13. Circle the elements that are more likely to combine with lead to form an ionic compound.
a. Potassium b. Bromine c. Oxygen d. Copper e. Chlorine

14. Circle the elements that could combine with phosphorus to form a covalent compound.
a. Sulfur b. Bromine c. Cobalt d. Iodine e. Hydrogen

15. Circle the elements that could combine with chlorine to form an ionic compound.
a. Potassium b. Bromine c. Cobalt d. Cadmium e. Hydrogen

16. Circle the elements that could combine with hydrogen to form a covalent compound.
a. Potassium b. Bromine c. Cobalt d. Iodine e. Cadmium