

Name: \_\_\_\_\_

Group Members: \_\_\_\_\_

Purpose: Use model sets to visualize Covalent Bond formation.

1. Observe each of the pieces and tell me the following information for them.

Type of Atom	Color	Amount of valence electrons	Valence (Hint: Look at each piece and count the number of holes)	Sum between valence electrons and valence
Carbon	Black			
Nitrogen	Beige			
Hydrogen	White			
Oxygen	Yellow			
Chlorine	Green			

2. There are 4 colors that I didn't point out above. Observe these pieces and use your knowledge about members of groups in the periodic table to come up with an identity for the for them

Type of Atom	Color	Amount of valence electrons	Valence (Hint: Look at each piece and count the number of holes)	Sum between valence electrons and valence
	Purple			
	Red			
	Blue			
	Silver			

3. Form the following compounds and fill in the table with the desired information.

Common Name for the Compound	IUPAC Name	Formula	Lewis Diagram of the compound
Water		H <sub>2</sub> O	
Ammonia		NH <sub>3</sub>	
None	Carbon Dioxide		
Hydrochloric Acid		HCl	
None	Nitrogen Dioxide		
Hydrofluoric Acid		HF	

4. Form 5 other compounds using the atoms you defined in your answer for number 2.

IUPAC Name	Formula	Lewis Diagram of the Compound

Analysis:

- Look the rightmost column on answers 1 and 2. Does your answer for the sum make sense? Explain.
- Why does Hydrogen not have the same sum as the other elements?
- In your own words define valence of an atom.
- If we were to include a model piece for a noble gas then describe what it may look like. Use the terms valence electrons and valence in your explanation.
- After this activity can you conclude about covalent bonding. Write at least three sentences.