

Unit 3: Extra Practice

Periodic Table

- List 3 trends that you notice as we travel across a period on the periodic table.
 - Increase in protons, atomic #, electrons by 1
 - Slight increase in mass
 - Starts w/ very reactive metal, ends w/ inert gas
- List 3 trends that you notice as we travel down a family on the periodic table.
 - Increase in mass
 - Increase in electron shells/energy
 - Increase (larger) in # of protons/atomic #

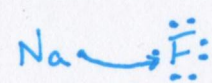
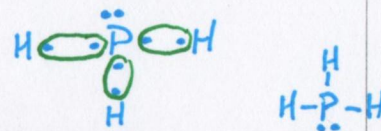
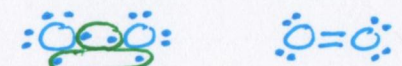
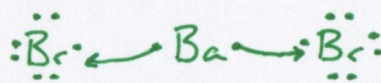


	Symbol	Family Name	Valence Electrons	Oxidation Number
Potassium	K	Alkali Metals	1	+1
Phosphorus	P	Nitrogen Family	5	-3
Bromine	Br	Halogen Family	7	-1
Neon	Ne	Noble Gasses	8	0
Copper	Cu	Transition Metals	Varies	Varies
Magnesium	Mg	Alkaline Earth Metals	2	+2
Iron	Fe	Transition Metals	Varies	Varies
Helium	He	Noble Gasses	2	0

Ionic vs Covalent

	Ionic Bonds	Covalent Bonds
Between metal and nonmetal	YES	
Between 2 non metals		YES
High melting points	Y	
Generally gas or liquid at room temperature		Y
Strong bonds	Y	
Sharing electrons		Y
Use greek prefixes within names		Y
Use roman numerals when naming transition metals	Y	

	Ionic Bonds	Covalent Bonds
Can include transition metals	Y	
Transferring electrons	Y	
Drawn with arrows showing electron movement	Y	
Drawn with lines to indicate electrons being shared		Y
Product is always a NEUTRAL compound, meaning oxidation numbers add up to zero.	Y	
Conduct electricity when in solution	Y	
Also called a molecule		Y
Generally a crystalline structure when solid	Y	

Ionic vs Covalent Drawings: Figure out if it is: Ionic/Covalent, the Formula, and Draw the Structure.

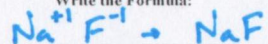
<p>Sodium fluoride Ionic/Covalent: <u>Ionic</u> Formula: <u>NaF</u> Draw:</p> 	<p>Phosphorus trihydride Ionic/Covalent: <u>Covalent</u> Formula: <u>PH₃</u> Draw:</p> 
<p>Oxygen Molecule (O₂) Ionic/Covalent: <u>Covalent</u> Formula: <u>O₂</u> Draw:</p> 	<p>Barium Bromide Ionic/Covalent: <u>Ionic</u> Formula: <u>BaBr₂</u> Draw:</p> 
<p>Copper (III) oxide Ionic/Covalent: <u>Ionic</u> Formula: <u>Cu₂O₃</u> Draw:</p> 	<p>Dinitrogen trioxide Ionic/Covalent: <u>Covalent</u> Formula: <u>N₂O₃</u> Draw:</p> 

Compound Name:

Ionic/IonicTransition/Covalent?

Write the Formula:

1. Sodium fluoride

I

2. Phosphorus trihydride

C

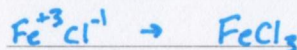
3. Aluminum oxide

I ~~Trans~~

4. Carbon monoxide

C

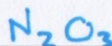
5. Iron (III) chloride

I Trans

6. Sodium Nitride

I

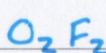
7. Dinitrogen trioxide

C

8. Copper (III) oxide

I Trans

9. Dioxxygen difluoride

C

10. Nickel (II) oxide

I Trans

Compound Formula

Ionic/IonicTransition/Covalent?

Write the Formula:

1. SO_2 CSulfur dioxide2. Mg_3P_2 IMagnesium phosphide3. ZnCl_2 I ~~Tran~~Zinc (II) chloride4. CO CCarbon monoxide5. Li_2O ILithium oxide6. Cu_2O_3 I ~~Tran~~Copper (III) oxide7. C_3H_8 CTricarbon octahydride8. BaBr_2 IBarium bromide9. NiO I ~~Tran~~Nickel (II) oxide10. BrF_5 CBromine pentafluoride**HONORS ONLY for the rest of the study guide:**

Define Polyatomic Ion: a group of covalently bonded molecules that ionically bond as a group to a charged ion

Use the table below. If I give you the formula, write the name. If I give you the name, write the formula.

Polyatomic Ion	Oxidation Number	Polyatomic Ion	Oxidation Number
Phosphate (PO_4)	3-	Nitrate (NO_3)	1-
Carbonate (CO_3)	2-	Sulfate (SO_4)	2-
Ammonium (NH_4)	1+	Acetate ($\text{C}_2\text{H}_3\text{O}_2$)	1-
Hydroxide (OH)	1-	Hydronium (H_3O)	1+

1. $\text{K}_2(\text{CO}_3)$ Potassium carbonate2. $(\text{NH}_4)_2\text{S}$ Ammonium sulfide3. $\text{Mg}(\text{OH})_2$ Magnesium hydroxide4. $\text{Ca}_3(\text{PO}_4)_2$ Calcium phosphate

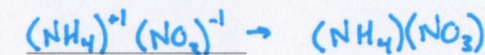
5. Calcium Sulfate



6. Sodium Nitrate



7. Ammonium Nitrate



8. Hydronium phosphate

