

**STATION 1**  
CLASSIFYING ELEMENTS AND COMPOUNDS

Identify the following elements and compounds using the words provided:

*Ionic compound, covalent compound, multivalent metal, polyatomic ion, metal ion, non-metal ion*

1. Chromium Multivalent metal
2.  $\text{ScCl}_3$  Ionic compound
3.  $\text{SF}_6$  Covalent compound
4. Neon Non-metal
5. Nitrate Polyatomic ion
6. Ammonium Polyatomic ion
7. Vanadium Multivalent metal
8. NO Covalent compound
9. Calcium chloride Ionic compound
10. Dihydrogen monohydride Covalent compound
11. Cobalt Multivalent metal
12. Cyanide Polyatomic ion
13. Phosphide Non-metal ion
14. Tungsten Metal ion
15. Palladium Multivalent metal

**STATION 2**  
SUBATOMIC PARTICLES

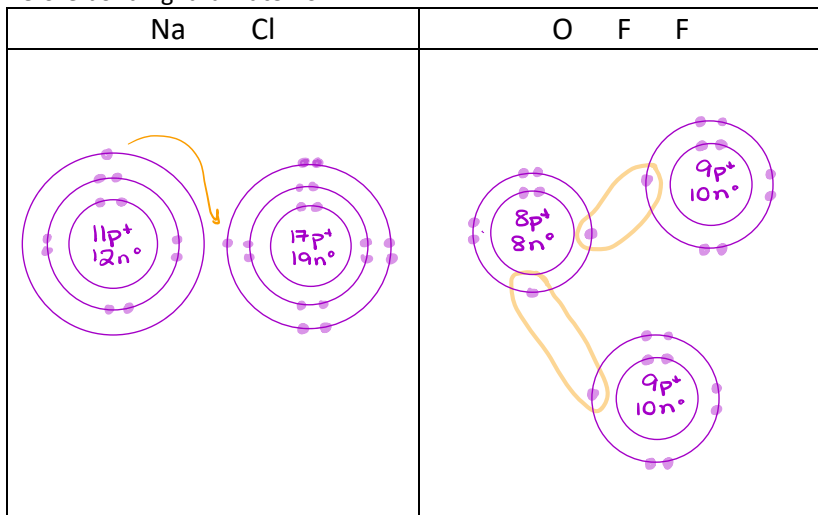
Element Name	Element Symbol (charge!)	Atomic Number	Number of Protons	Number of Electrons	Number of Neutrons	Family Name
Sodium ion	$\text{Na}^+$	11	11	10	12	Alkali metals
Bromine ion	$\text{Br}^-$	35	35	36	45	Halogens
Krypton Atom	Kr	36	36	36	48	Noble gases
Calcium ion	$\text{Ca}^{2+}$	20	20	18	20	Alkaline Earth metals
Xenon atom	Xe	54	54	54	77	Noble gases
Barium ion	$\text{Ba}^{2+}$	56	56	54	81	Alkaline Earth metals
Fluorine ion	$\text{F}^-$	9	9	10	10	Halogens

A **metal** forms a cation (cation/anion) with a positive (positive/negative) charge by giving (giving/receiving) an electron

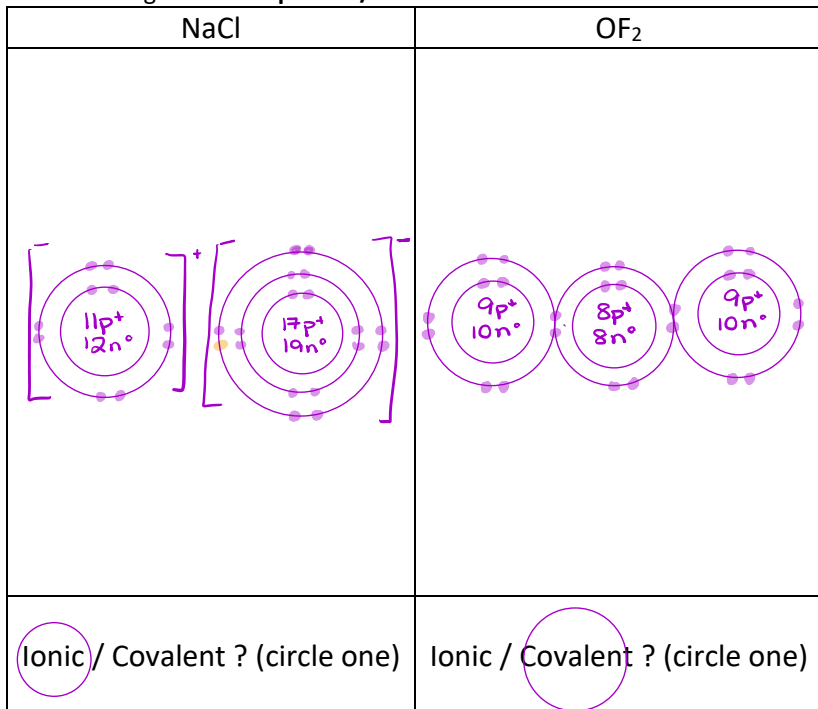
A **non-metal** forms a anion (cation/anion) with a negative (positive/negative) charge by receiving (giving/receiving) an electron

**STATION 3**  
BOHR MODELS

Before bonding: draw atoms



After bonding: draw compounds/molecules



**STATION 4**  
NAMING COMPOUNDS

Write the names of these ionic or covalent compounds

1. CsBr *Cesium bromide*
2. OF<sub>2</sub> *Oxygen difluoride*  
*covalent*
3. CuCl<sub>2</sub> *Copper (II) chloride*  
*multivalent*
4. Cr<sub>2</sub>(CO<sub>3</sub>)<sub>3</sub> *Chromium (III) carbonate*  
*polyatomic*
5. MnO<sub>2</sub> *Manganese (IV) oxide*  
*multivalent*
6. LiNO<sub>3</sub> *Lithium nitrate*  
*polyatomic*
7. P<sub>4</sub>Cl<sub>7</sub> *Tetraphosphorus heptachloride*  
*covalent*
8. Mg<sub>3</sub>(PO<sub>4</sub>)<sub>2</sub> *Magnesium phosphate*  
*polyatomic*
9. FeCl<sub>3</sub> *Iron (III) chloride*  
*multivalent*
10. Ca(HCO<sub>3</sub>)<sub>2</sub> *Calcium bicarbonate* or  
*Calcium hydrogen carbonate*

**STATION 5**  
**WRITING FORMULAS FOR COMPOUNDS**

Write the formulas of these ionic or covalent compounds

