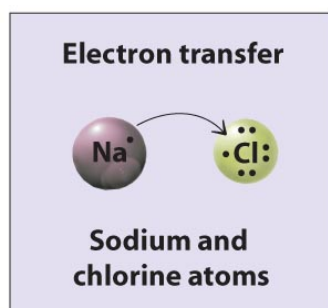


Ionic Bonds

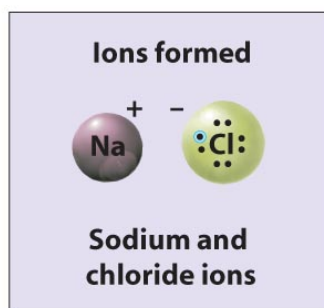
<http://safeshare.tv/w/DOYYHNayWO>

Valence electrons are the electrons in the outer energy level of an atom.

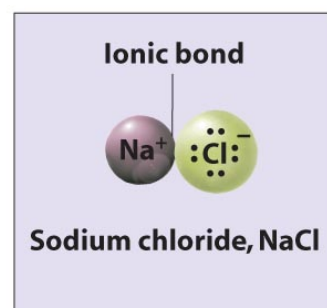
When valence electrons are **transferred** from a metal to a nonmetal, an ionic bond results between the cation and anion.



①



②



③

Simple Binary Ionic Compounds

Ionic compounds are formed by the combination of a cation and an anion and are electrically neutral. Binary compounds are compounds that contain only two elements.

Examples: Na^+ Cl^- $m \leftarrow \begin{matrix} k \\ \times \\ \times \\ \times \end{matrix} \rightarrow nm$

Na Cl
 metal nonmetal } \nearrow see periodic table.

name - Sodium chloride
 chemical formula - NaCl $\text{Na}^+ \text{Cl}^-$

Al P
 metal nonmetal. $m \leftarrow \begin{matrix} k \\ \times \\ \times \\ \times \end{matrix} \rightarrow nm$

name - Aluminum phosphide
 chemical formula - AlP $\text{Al}^{3+} \text{P}^{3-}$ $\frac{+3}{-3} = 0$

Na O
 m nm $\text{Na}^{(+1)} \text{O}^{-2}$

name - Sodium oxide
 chemical formula - Na_2O $\text{Na}^{(+1)}$ $\frac{+2}{-2} = 0$
 subscript

Al Cl
 m nm $\text{Al}^{3+} \text{Cl}^{(-1)}$

name - Aluminum chloride
 chemical formula - AlCl_3 $\text{Cl}^{(-1)}$ $\text{Cl}^{(-1)}$ $\text{Cl}^{(-1)}$

Mg P
 m nm $\text{Mg}^{2+} \text{P}^{3-}$

name - magnesium phosphide
 chemical formula - Mg_3P_2 Mg^{2+} P^{3-} Mg^{2+} P^{3-} Mg^{2+} $\frac{+6}{-6} = 0$

Al O
 m nm $\text{Al}^{3+} \text{O}^{2-}$

name - aluminum oxide
 chemical formula - Al_2O_3 Al^{3+} O^{2-} Al^{3+} O^{2-} O^{2-} $\frac{+6}{-6} = 0$

Crisscross Rule

$\begin{matrix} \textcircled{2+} & \textcircled{3-} \\ \text{Mg} & \text{P} \\ 3 & 2 \end{matrix}$ $\begin{matrix} \textcircled{3+} & \textcircled{2-} \\ \text{Al} & \text{O} \\ 2 & 3 \end{matrix}$

Mg_3P_2 Al_2O_3

$\begin{matrix} \textcircled{+2} & \textcircled{-4} \\ \text{X} & \text{Y} \\ 4 & 2 \end{matrix} \rightarrow \text{X}_2\text{Y}_1$

reduce subscripts if possible

Nomenclature Worksheet 2:
Simple Binary Ionic Compounds

Please complete the following table:

| Name of Ionic Compound | Formula of Ionic Compound |
|------------------------|---------------------------|
| 1. Sodium bromide | $\text{Na}^+ \text{Br}^-$ |
| | NaBr |

| | | |
|-----|------------------|----------------------|
| 11. | potassium oxide. | K_2O |
|-----|------------------|----------------------|