An ionic compound is formed between a metal and an non-metal.

In a compound, the metallic element's name remain UNCHANGED! However, the non-metallic element changes its name to _____ ide.



Eg. fluorine \rightarrow fluoride oxygen \rightarrow oxide sulphur \rightarrow sulphide

bromine \rightarrow bromide chlorine \rightarrow chloride iodine \rightarrow iodide

<u>**CATIONS = POSITIVE IONS**</u> (M stands for Metal)

All group 1 elements consist of ONE electron in their outermost shell An ionic compound is formed when this electron is lost to an non-metal.

 $M - 1e \rightarrow M^+$ e.g. $Na - 1e \rightarrow Na^+$

All group 2 elements consist of TWO electrons in their outermost shell.

 $M - 2e \rightarrow M^{2+}$ e.g. $Mg - 2e \rightarrow Mg^{2+}$

All group 3 elements consist of THERE electrons in their outermost shell.

 $M - 3e \rightarrow M^{3+}$ e.g. $Al - 3e \rightarrow Al^{3+}$

All group 4 and 5 elements consist of four (or five) electrons in their outermost shell.

TOO HARD to form IONS – they normally form covalent compounds with other non-metals by sharing electrons.

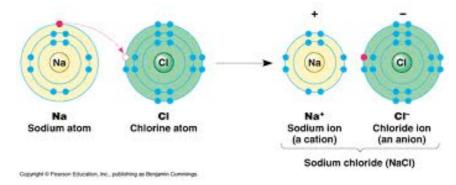
ANIONS = NEGATIVE IONS (N stands for non-metal)

All group 6 elements consist of 6 electrons in their outermost shell. They are eager to receive TWO electrons to form anions.

 $N + 2e \rightarrow N^{2}$ e.g. $O + 2e \rightarrow O^{2}$

All group 7 elements consist of ONE electron in their outermost shell.

 $N + 1e \rightarrow N^{-}$ e.g. $Cl + 1e \rightarrow Cl^{-}$



Year 10 Chemistry – Naming compounds and writing formulae Name:

Exercise A - Name these compound.	Name:
1. NaCl 3. MgO	2. KI 4. AlF ₃
5. LiBr	6. CaO
7. K ₂ S	8. FeS
9. CuC1 ₂	10. ZnBr ₂

Radicals or Polyatomic ions are ions formed from different types of non-metals chemically combined together with an overall net charge. There are 7 common radicals. (many end with **–ate**)

Carbonate CO ₃ ²⁻	Bicarbonate HCO ₃ -
Sulphate SO ₄ ²⁻	Nitrate NO ₃ -
Phosphate PO ₄ ³⁻	Hydroxide <mark>OH</mark> -

Ammonium **NH4**⁺ (the only positive radical you need to know)

Exercise B - Name these compound.

1. KOH	2. NH ₄ I
3. MgSO ₄	4. Al ₂ O ₃
5. AgNO ₃	6. Ba(OH) ₂
7. (NH ₄₎₃ PO ₄	8. NaHCO ₃
9. CuSO ₄	10. PbCO ₃

<u>Exercise C</u> – Give the chemical formulae of these compounds.

Compound Name	Cation	Anion	Chemical Formula
Sodium Bromide			
Magnesium Sulphide			
Calcium Carbonate			
Lithium Sulphate			
Ammonium Hydroxide			
Aluminium Nitrate			
Aluminium Oxide			

1+	2+	3+	1-	2-	3-
Li ⁺ , Na ⁺ , K ⁺ , Ag ⁺ , Cu ⁺	Mg ²⁺ , Ca ²⁺ , Ba ²⁺ , Sr ²⁺ , Fe ²⁺ , Zn ²⁺ , Cu ²⁺ , Ni ²⁺ Pb ²⁺	Al ³⁺ , Fe ³⁺	Cl ⁻ , Br ⁻ , I ⁻ ,	O ²⁻ , S ²⁻	N ³⁻ P ³⁻
NH4 ⁺			OH ⁻ , HCO ₃ ⁻ NO ₃ ⁻	CO ₃ ²⁻ , SO ₄ ²⁻	PO4 ³⁻

Exercise D - More Practice on Naming compounds and writing chemical formulae.

Formula	Name	Name	Formula
KC1		Silver Bromide	
NaBr		Lead Iodide	
K ₂ O		Stronium Chloride	
MgS		Iron (II) Hydroxide	
ZnCl ₂		Copper (I) Oxide	
КОН		Ammonium Nitrate	
Ca SO ₄		Barium Sulphate	
Al PO ₄		Magnesium Phosphate	
NaHCO ₃		Ammonium Carbonate	

Exercise \mathbf{E} - Make up another 12 compounds that were not mentioned above.

Formula	Name	Formula	Name

Well done! If you have mostly correct...... Ready to study VCE Chemistry