

Year 10 C Pathway

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# INTRODUCTORY CHEMISTRY

# Outcomes

- Write balanced formula for ionic compounds
- Write names of ionic compounds from formula

# Looking further at ionic compounds...

- Elements – Carbon, oxygen, calcium

- Mixtures – Iron filings in sand, salty water

- Compounds

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graph TD; Compounds --> IonicCompounds; Compounds --> CovalentCompounds; style IonicCompounds stroke:#f00,stroke-width:2px
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Ionic Compounds

Covalent Compounds

# Review

- ① Ionic compounds form between a metal and non metal
- ① That's the same as saying between a positive ion and a negative ion
- ① They occur because positive and negative charges attract each other

# How to write a formula

- Ionic compounds are always neutrally (zero) charged.



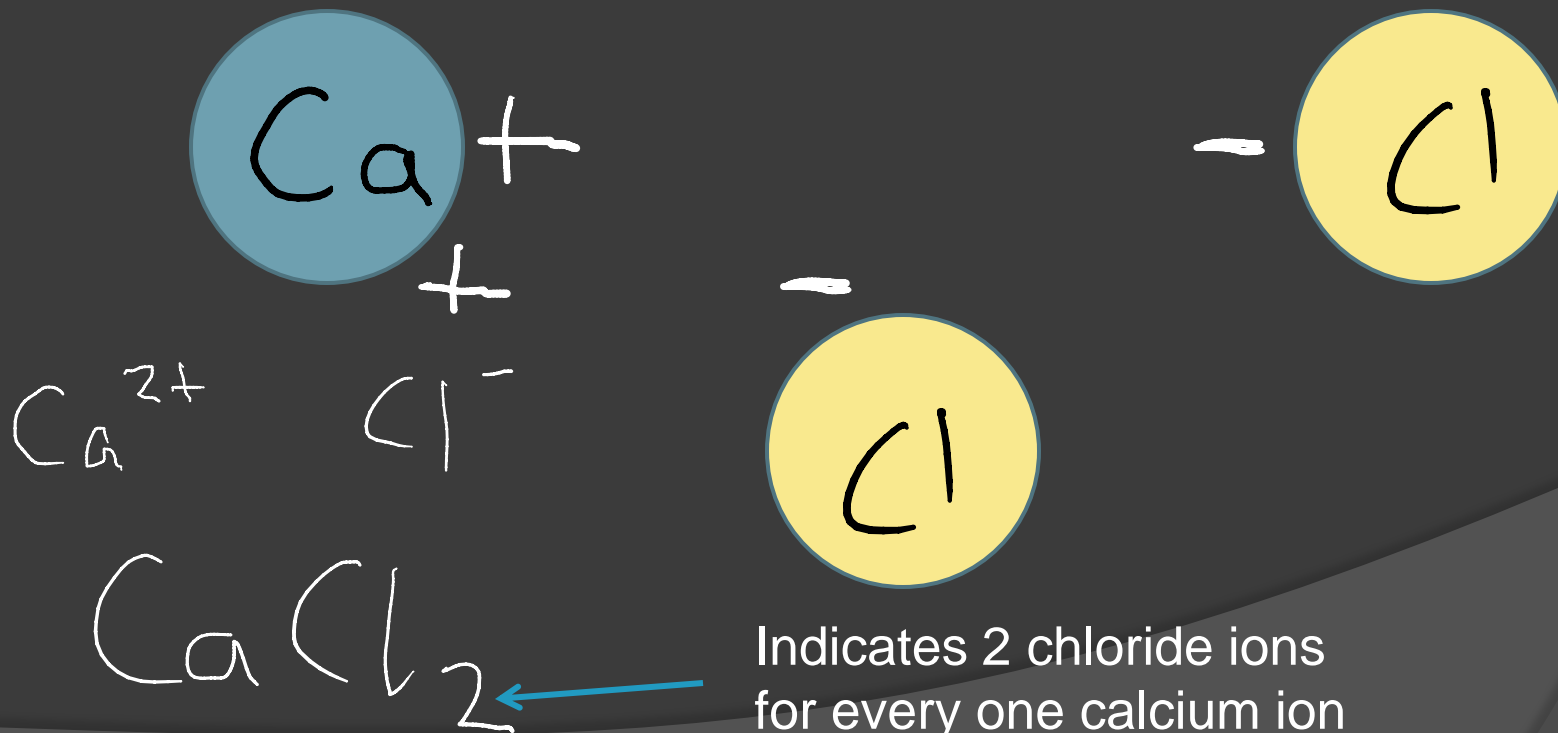
Metal (positive ion)  
always written first



- The amount of positive charge must equal the amount of negative charge

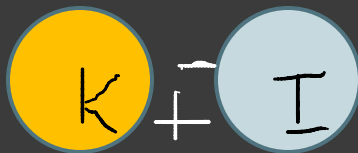
# How to write a formula

Ionic compound formed between calcium ion (2+ charge) and chlorine ion (1- charge)

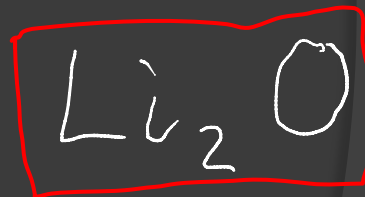
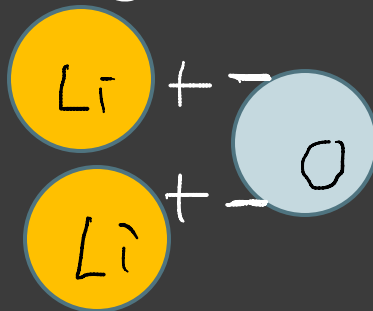


# How to write a formula

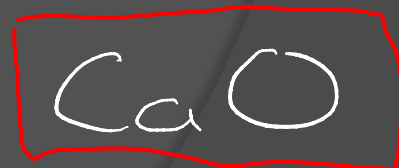
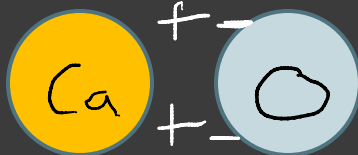
●  $K^+$  and  $I^-$



●  $Li^+$  and  $O^{2-}$

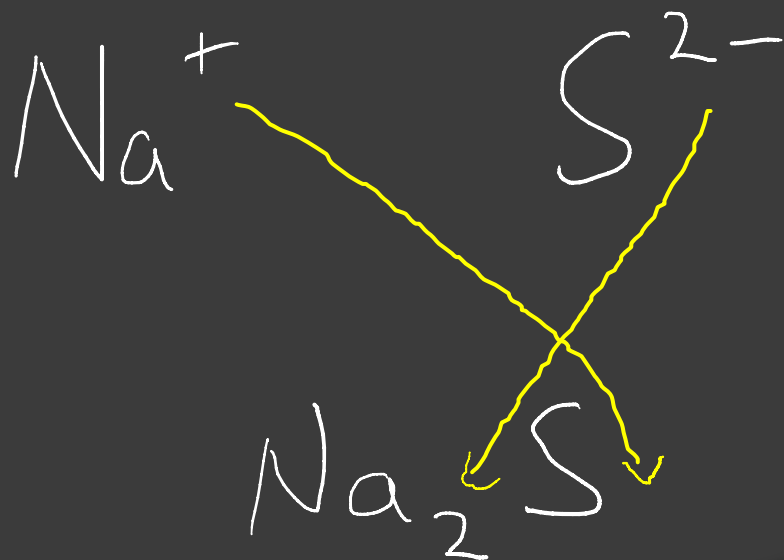


●  $Ca^{2+}$  and  $O^{2-}$



# A neat trick...

- To write out the correct formula just swap the valency and move to the bottom. This only works if the valencies are different



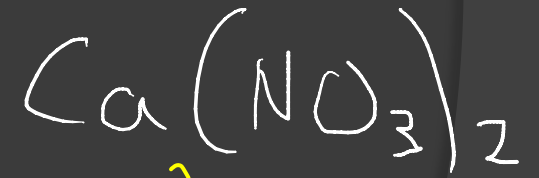
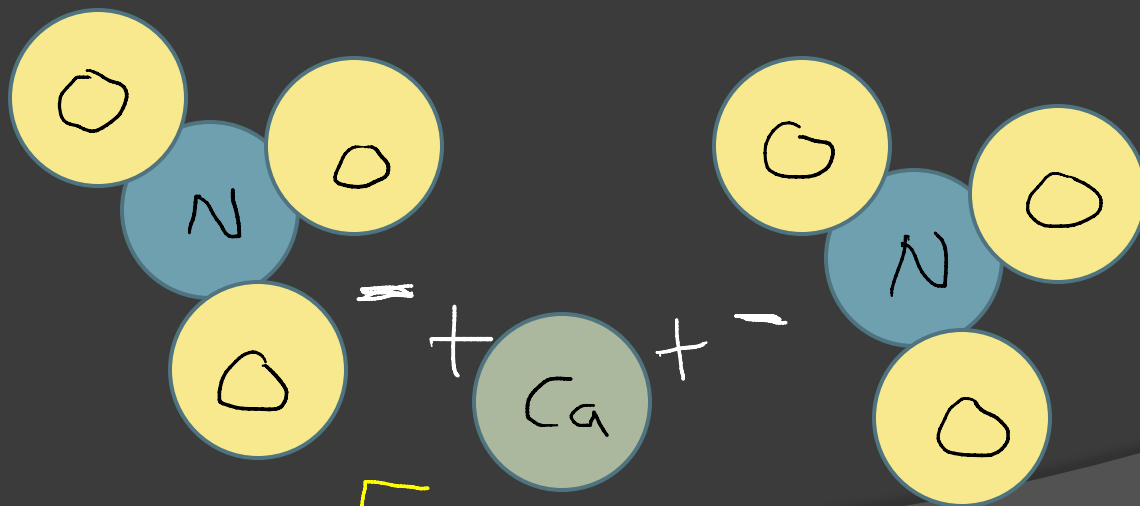
If  $\pm 1$ ,  
just leave  
blank



# Polyatomic ions

- Some ions are actually made of a few atoms joined together.

- Eg:  $\text{Ca}^{2+}$  joining with  $\text{NO}_3^-$



Means 2 lots of (NO3)

# Naming Ionic Compounds

- To name an ionic compound, the metal (positive ion) stays the same
- The non-metal (negative ion) is suffixed by “ide”
- Eg: Magnesium Chloride, Sodium Fluoride, Lithium Oxide
- There are a few polyatomic ions with special names (pg 15 of study guide)

# Outcomes

- Write balanced formula for ionic compounds
- Write names of ionic compounds from formula
  
- Checkpoint 4.4, 4.5, 4.6, 4.7, 4.8, 4.9, Set 5 (Q3-5)