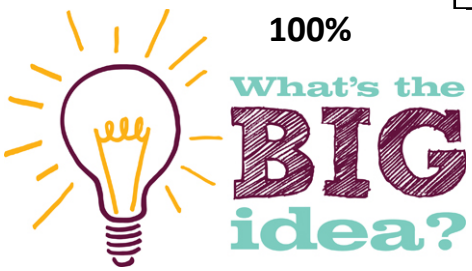
You need to know the content of this sheet. 100%

100% Sheet
Analysis -Triple



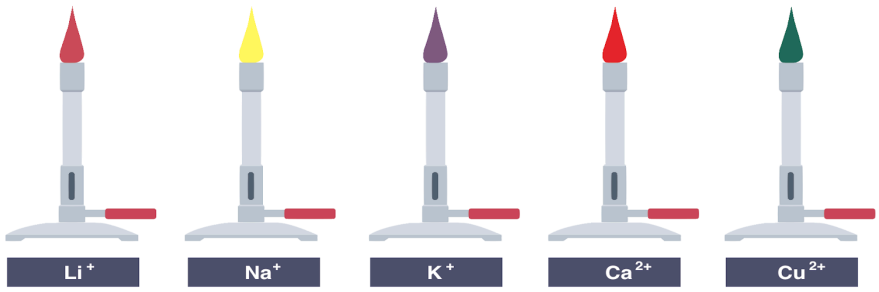
Earth - analysis

The composition of the Earth and its atmosphere and the processes occurring within them shape the Earth's surface and its climate.

CATIONS travel to the cathode and so these must be POSITIVE IONS
ANIONS travel to the anode and so these are NEGATIVE IONS

You can only ever test for either Anions or Cations. So to identify an unknown compound you must test for each separately

Learn the flame test colours for these Cations



Red **Orange/Yellow** **Lilac** **Brick Red** **Green**

Using Sodium Hydroxide to identify metal ions (Cations)	
Aluminium, Al^{3+}	White Precipitate that then dissolves
Calcium, Ca^{2+}	White Precipitate that doesn't dissolve
Magnesium, Mg^{2+}	White Precipitate that doesn't dissolve
Copper (II), Cu^{2+}	Blue Precipitate
Iron (II), Fe^{2+}	Green Precipitate
Iron (III), Fe^{3+}	Brown Precipitate

Anion	Test	Result
Carbonate, CO_3^{2-}	Add dilute acid (HCl)	Produces CO_2, test with limewater
Halide, Cl^-, Br^-, I^-	Add silver Nitrate & dilute Nitric acid	Cl^- - White precipitate Br^- - Cream precipitate I^- - Yellow precipitate
Sulfate, SO_4^{2-}	Add Barium chloride & dilute hydrochloric acid	White precipitate

WORK FOR PROGRESS

100% Sheet
Analysis -Triple

Working Towards → Expected → Greater Depth

Sodium hydroxide solution was added to a solution containing ions of a metal.

A white precipitate was produced. The white precipitate dissolved in excess sodium hydroxide solution.

Use the correct answer from the box to complete the sentence.

aluminium	**magnesium**	**potassium**

The ions in the solution were ions of _____ **(1)**

(A) Low sodium salt contains sodium chloride and potassium chloride.

A student used a flame test on low sodium salt.

(i) What is the colour produced by sodium ions in a flame test? **(1)**

(ii) What is the colour produced by potassium ions in a flame test? **(1)**

(iii) Why is it **not** possible to tell from the flame test that both ions are present in low sodium salt? **(1)**

A student did two tests on a solution of compound **X**.

Test 1
Sodium hydroxide solution was added.
A blue precipitate was formed.

Test 2
Dilute hydrochloric acid was added.
Barium chloride solution was then added.
A white precipitate was formed.

The student concluded that compound **X** is iron(II) sulfate.

Is the student's conclusion correct? Explain your answer. (3)