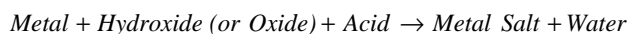
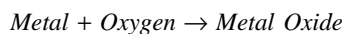


Chemistry Revision Notes – Patterns Of Behaviour

1. Metals will react with **acids**, **water**, and **oxygen**, in the following ways:



2. The **reactivity series** of metals:

Potassium
Sodium
Calcium
Magnesium
Aluminium
Zinc
Iron
Tin
Lead
(Hydrogen)
Copper
Silver
Gold
Platinum

3. The **alkali metals** (group 1):

Lithium		
Sodium		
Potassium		<i>increasing reactivity</i>
Rubidium		
Caesium		↓

As you descend the list, the outer shell (1 electron) is further away and easier to lose.

4. The **halogens** (group 7):

Fluorine		↑
Chlorine		<i>increasing</i>
Bromine		<i>reactivity</i>
Iodine		

As you ascend the list, the outer shell (7 electrons) is closer to the nucleus and so it is easier to gain an electron.

5. The **noble gases** (group 0):

Helium
Neon
Argon
Krypton
Xenon
Radon

They are very unreactive, as they all have a full outer shell.

6. Oxygen is prepared by the decay of **hydrogen peroxide** – $2H_2O_2 \rightarrow 2H_2O + O_2$.
7. Metals burn in oxygen to form alkaline oxides, whereas non-metals form acidic oxides.

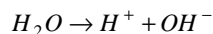
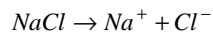
8. **Indicators** are used to test the acidity of a compound:

<i>Indicator</i>	<i>Acid Colour</i>	<i>Alkali Colour</i>	<i>Neutral Colour</i>
<i>Methyl Orange</i>	red	yellow	orange
<i>Phenolphthalein</i>	colourless	purple	colourless
<i>Litmus Blue</i>	red	blue	blue
<i>Litmus Red</i>	red	blue	red
<i>Universal</i>	red	purple	green/yellow

9. To test for **chlorides**, **bromides**, and **iodides**, then add dilute nitric acid followed by silver nitrate solution:

- If it is a **chloride**, it will give a white precipitate.
- If it is a **bromide**, it will give a cream precipitate.
- If it is an **iodide**, it will give a yellow precipitate.

10. **Electrolysis** is the splitting up of an ionic compound (the **electrolyte**) using two **electrodes** to pass a current through the solution – the positive electrode is the **anode**, and the negative electrode is the **cathode**. An example is shown below:



- At the **cathode** – H^+ ions are **reduced** to give off hydrogen gas.
- At the **anode** – Cl^- ions are **oxidised** to give off chlorine gas.
- The left over compound is **sodium hydroxide** (NaOH).

11. Copper can be **purified** by electrolysis, using **copper electrodes**.