

Summary— Periodic Table

The Periodic Table

In the nineteenth century, a Russian scientist called **Mendeleev** found a way of arranging the elements into groups in an arrangement now known as the **Periodic Table**.

Elements can be broken down into anything simpler

They contain only 1 type of atom



Groups

The elements in the Periodic Table are arranged in vertical columns called groups, numbered 1-8

Elements in the same group have similar chemical properties

Periods

A horizontal row in the Periodic table is called a period.

Metals/Non metals

Elements on the left hand side of the zig zag are metals .

Elements on the right hand side of the zig zag lines are non metals.

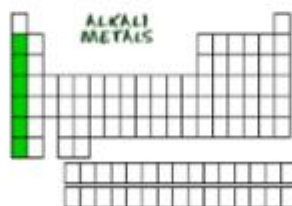
In the Periodic Table there are many more metals than non metals.



Elements which are found in the same group will have similar chemical properties.

The elements in group one are called the **alkali metals** . They are all stored under oil due to their high reactivity with water and air.

They are all soft metals.



Transition Metals

The metals in the middle of the Periodic Table tend to be less reactive. Examples

include gold, platinum, silver and mercury.

These metals have a **wide variety of uses**.



Halogens

Examples include fluorine, which is used in toothpaste and bromine, which is used in photographic film.

The elements in group 7 are **very reactive non metals**.

Noble Gases

The elements in group 8/0 are all gases.

Examples include helium, which is used to fill weather balloons, and argon, which is used in light bulbs.

They are **unreactive, stable gases**.
properties.

The image shows two periodic tables. The top one highlights the halogens (Group 7) in red, with a label 'Halogens (Group 7)' above it. The bottom one highlights the noble gases (Group 8/0) in red, with a label 'Noble gases (Group 8/0)' above it.

Summary– Properties of Elements

Conductors & Insulators

Substances that allow electricity to pass through them are known as **electrical conductors**.

Substances that do not conduct electricity are described as **electrical insulators**.

All metals conduct electricity whereas all non metals do not conduct electricity with the exception of carbon.



Gases present in Air

Air is a mixture of elements and compounds

Gas present in Air	Approx % present
Nitrogen	78
Oxygen	20
Carbon dioxide + others	2

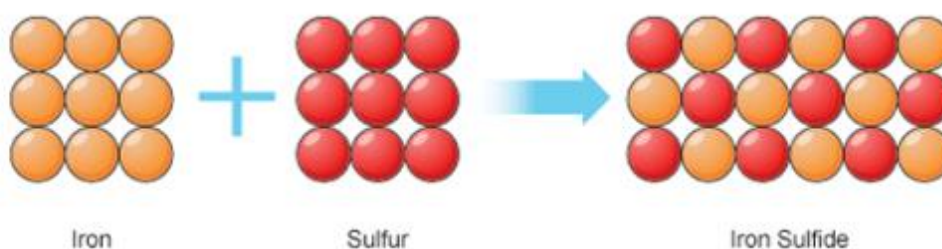
Summary– Compounds

Making Compounds

Elements react together chemically to form compounds.

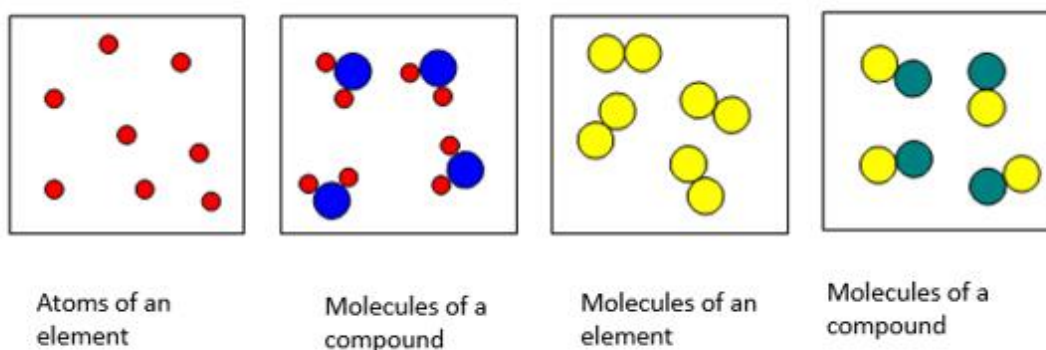
Compounds are made up of at least two elements chemically joined together.

Compounds can have different properties from the elements that they are made from both in appearance, physical state and reactivity.



A compound is formed when 2 or more elements chemically join together.

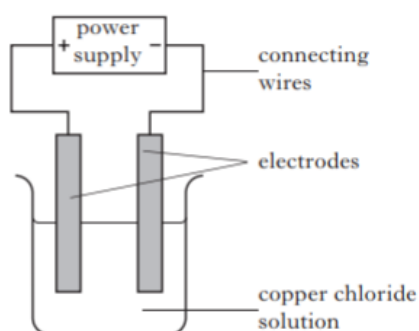
Compounds are made up of molecules. (atoms chemically joined together).



A **mixture** contain 2 or more substances (elements or compounds) which are not chemically joined. They are relatively easy to separate

Electrolysis is a technique which uses electricity to break compounds into its elements

Diagram for electrolysis



Chemical formula

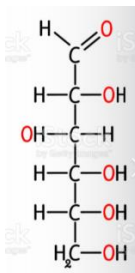
The formula of a compound shows you the number of each type of atom present in the molecule.

Example: CO_2 is the molecular formula for Carbon Dioxide meaning there is 1 carbon atom joined to 2 oxygen atoms.



Example glucose has a structure

The molecular formula for glucose is $\text{C}_6\text{H}_{12}\text{O}_6$



Summary– Naming Compounds

Naming Compounds

The name of a compound tells us what elements are present in the compound.

Naming Compound Rules

1. Compounds ending in **-ide** contain two elements.

Example: iron sulphide contains iron and sulfur

2. Compounds ending in **-ate** or **-ite** contain three elements, one of which is oxygen.

Example: potassium chlorate contains potassium, chlorine and oxygen

Name of compound	Chemical formula	Number of elements in compound	Elements in compound
magnesium oxide	MgO	2	Magnesium, oxygen
potassium oxide	K_2O	2	Potassium, oxygen
Iron sulfide	FeS	2	iron, sulfur
calcium carbonate	CaCO_3	3	Calcium, carbon and oxygen