Exmouth Community College
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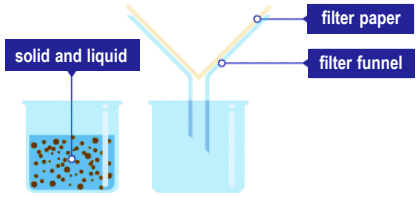
Keyword	Definition
Solution	A liquid mixture in which a solute dissolves in the solvent
Solute	A minor component in a solution – dissolves in the solvent
Solvent	The liquid which the solute dissolves in
Saturated	The point at which no more solute can dissolve
Pure	Only one type of particle
Dissolve	Solid is mixed into a liquid to become a solution
Particle	A small piece of matter – everything is made up of these
Filter	To remove solid particles from liquid particles
Evaporate	Particles go from liquid to a gas
Separate	To remove one type of particle from another
Soluble	A substance is capable of dissolving
Mixture	More than on type of particle
Solubility	How much of a substance will dissolve in a solution
Insoluble	A substance is not capable of dissolving

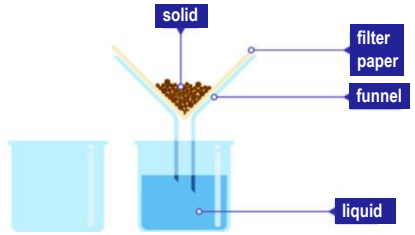
Further Reading:
https://www.bbc.co.uk/bitesize/guides/zgvc4wx/revision/1

Filtration:

- A method for separating an insoluble solid from a liquid. A beaker containing a mixture of insoluble solid and liquid. There is filter paper in a filter funnel above another beaker.

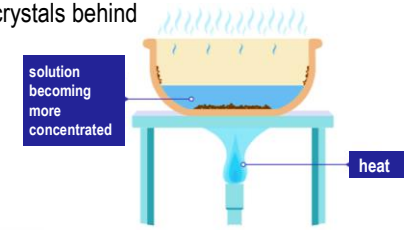


- The mixer if insoluble solid and liquid is poured into the filter funnel.
- The liquid particles are small enough to pass through the paper as a filtrate. The solid particles are too large to pass through the filter paper and stay behind as the residue.



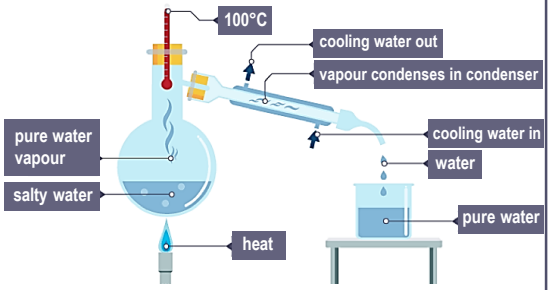
Evaporation:

- A method used to separate a soluble solid from a liquid.
- A solution is placed in an evaporating basin and heated with a Bunsen Burner
- The water will begin to evaporate and solid particles will begin to form in the basin.
- Once the water has evaporated, it will leave solid crystals behind



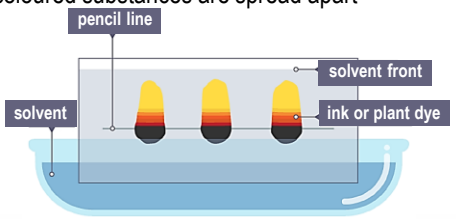
Distillation:

- A method used for separating the solvent from a solution. E.g. water can be separated from a salt solution because the water has a much lower boiling point than the salt
- Salt water is heated. The water evaporates and its vapours rise
- The vapours rise and pass into the condenser, where they cool and condense
- Liquid water drips into a beaker and the salt will be left in the round bottom flask



Chromatography:

- Paper chromatography is a method for separating dissolved substances from one another. Often used when the dissolved substances are coloured such as inks, food colouring or plant dyes
- A pencil line is drawn on the paper and spots of ink are placed on the line
- There is a solvent, usually water or ethanol, in a container/beaker
- The paper is lowered into the solvent. The solvent travels up the paper, taking some of the substance with it
- As the solvent travels up the paper, the different coloured substances are spread apart



Year 7 – Chemistry / Elementary – My Dear Scientist – HT4

Exmouth Community College
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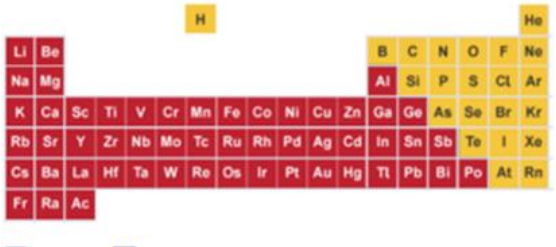
Keyword	Definition
Periodic Table	A table of all the known elements in order of their atomic number
Group	Vertical columns on the periodic table
Period	Horizontal columns on the periodic table
Atom	The smallest piece of an element
Element	A substance containing only one type of atom
Compound	Two or more different elements which are chemically joined together
Mixture	Two or more different elements or compounds which are not chemically joined together
Chemical Reaction	A process in which one or more substances are changed into others, by their atoms being rearranged. Also known as irreversible reactions
Physical Reaction	A process in which the physical properties are changed, but no new substances are made. Also know as reversible reactions
Reactant	A substance that reacts together with another substance to form products during a chemical reaction
Product	A substance formed in a chemical reaction
Conservation of Mass	The total mass of the products in a chemical reaction will be the same as the total mass of the reactant

Further Reading:
https://www.bbc.co.uk/bitesize/guides/zt2hpv4/revision/1
https://www.bbc.co.uk/bitesize/guides/z84wjxs/revision/1

The Periodic Table



Metals	Non-Metals
Shiny in colour, solid at room temperature (except mercury), high density, strong, malleable, good conductor of heat and electricity	Dull in colour, can be solids, liquids or gases at room temperature, low density, brittle, poor conductors or heat and electricity

Atoms, Elements, Compounds and Mixtures

This models an element. There is only one type of atom

This models a compound. There are two different elements chemically combined together

This models a mixture. There are two or more different elements which are not chemically combined

Chemical and Physical Reaction

Chemical changes happen when chemical reactions occur. They involve the formation of new chemical elements or compounds.
e.g. Iron will react with oxygen to form Iron Oxide (rust)

Physical changes do not lead to new chemical substances forming. In a physical change, a substance simply changes physical state.
e.g. A solid to a liquid

Chemical Reactions and Equations

The changes in a chemical reaction can be modelled using equations. In general we write

Reactants → Product

The reactants are shown on the left of the arrow, and the products are shown on the right. The arrow tells us a chemical reaction has taken place.

e.g. Iron + Oxygen → Iron Oxide

The iron and oxygen react together (reactants) to produce Iron Oxide (product)

Naming Compounds:

Metal + No-Metal (which contain 2 elements)
1. The metal always goes first
2. The ending of the non-metal changes to 'ide'

e.g. Copper + Oxygen → Copper Oxide
Lithium + Fluorine → Lithium Fluoride

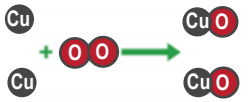
To name compounds which have a metal, non-metal and oxygen (3 or more elements)
1. The metal always goes first
2. The ending of the non-metal changes to 'ate'

e.g. Copper, Sulphur, Oxygen
Copper Sulphate

Conservation of Mass

No atoms are created or destroyed in a chemical reaction. Instead, they just join together in a different way than they were before the reaction, and form products. This means that the total mass of products in a chemical reaction will be the same as the total mass of the reactants.

Copper + Oxygen → Copper Oxide
10g 0.5g 10.5g



Balancing Equations

A balanced equation gives more information about a chemical reaction because it gives the symbols and formulae of the substances involved.
$Cu + O_2 \rightarrow CuO$
The above equation is not balanced because there is one copper atom on both sides of the arrow, but two oxygen atoms on the left hand side, and only one on the right.
You need to adjust the number of units of some substances until you have equal numbers or atoms on both sides of the arrow. You cannot change the formulae of a substance (you can't change the small number)
$2Cu + O_2 \rightarrow 2CuO$

Year 7 – Chemistry / Elementary – HT4