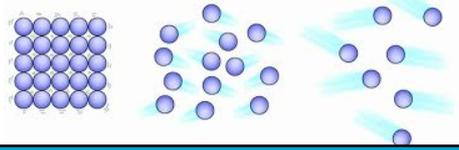


# Chemistry

## Models

Models are used to make ideas easier to understand.

## Particle Model

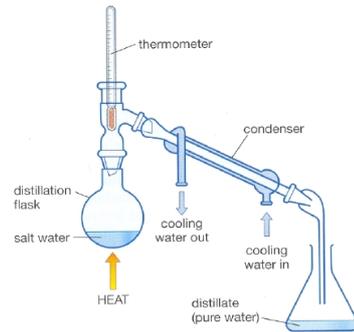


## Dissolving

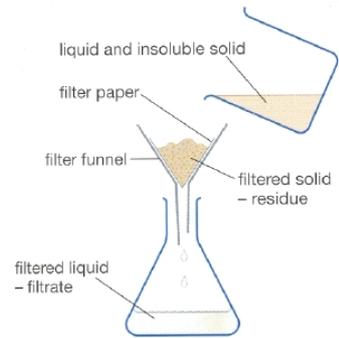
Solids are broken up into particles and mix in with liquid particles to make a **solution**. A solid that can dissolve is **soluble**

**Solid** - particles are held together by bonds. They do not flow and have fixed shape  
**Liquids** - particles are close together, arranged in a random way and can move around, they can flow  
**Gas** - particles are far apart, arranged in a random way and can move quickly, they can flow

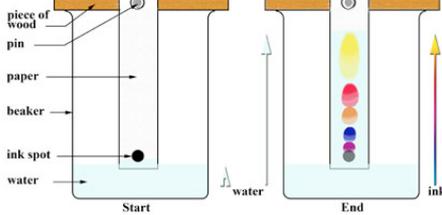
**Distillation.** Used to separate a solvent from a solution. The solution is heated and the solvent **evaporates**. It is cooled in the condenser and drips into the beaker



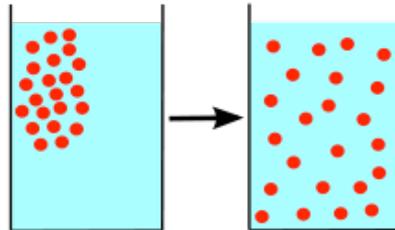
**Filtration.**  
**Insoluble** solids can be separated from a liquid using filtration. The liquid is called a **solvent**.



## Simple chromatography



**Chromatography**  
 Used to separate mixtures of coloured dyes

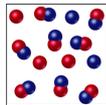
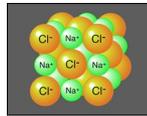
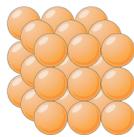


**Diffusion.**  
 When substances spread out and mix together. Only happens in liquids and gases.

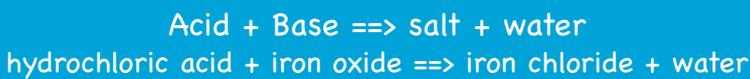
**Elements** - made of one type of atom

**Compounds** - made of two or more types of atoms bonded together

**Mixtures** - different atoms not bonded together



**Chemical Reactions.**  
 Metal react and create new substances. They are irreversible

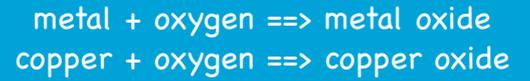


**Alloys**  
 A mixture of different metals

**Very reactive metals.**

**Non-metals** on right hand side

**strong metals** in middle used for building



Reactivity Series



**Biofuels**  
 Fuel from plants. e.g. wood, oil from plants, plants fermented to form alcohol

**Fossil fuels.** Coal oil and natural gas. They are found under the ground and take millions of years to form. They are non-renewable

**Renewable** - can be replaced  
**Non-renewable** - once they are used up it takes millions of years to reform

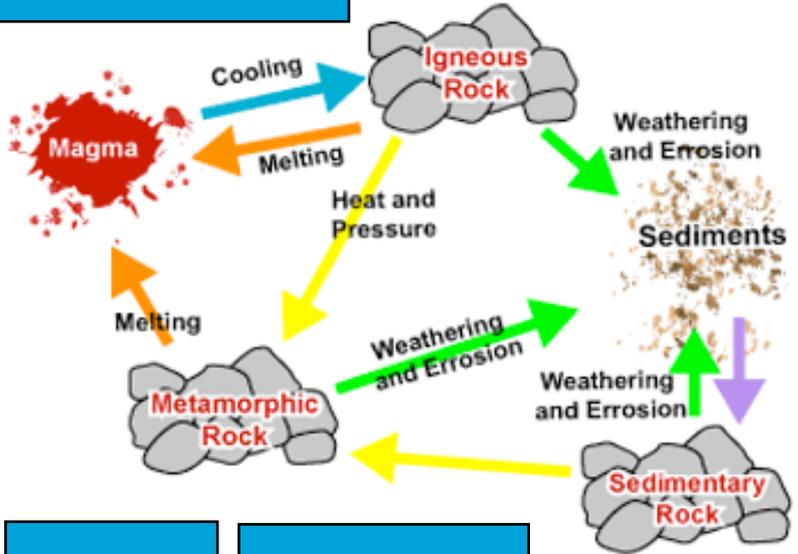
**Carbon Dioxide**  
 Levels are increasing because of combustion of fossil fuels

**Atmosphere**  
 In the past it was water vapour, carbon dioxide, and some other gases. We think it came from volcanoes.

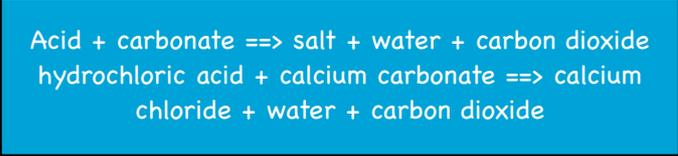
**Global Warming**  
 is caused by increasing amounts of carbon dioxide.

**Atmosphere**  
**NOW** it is made of Nitrogen, Oxygen and Water vapour

Rock Cycle



**Weathering**  
 Chemical weathering - rocks worn down by acid rain  
 Physical weathering - rock worn down by wind and sea  
 Biological weathering - roots of plants grow into cracks in the rock and break up the rock



**Igneous Rock**  
 Granite is igneous rock. It is very hard

**Metamorphic Rock**  
 Slate is made from mudstone. It is stronger than limestone

**Sedimentary rock**  
 Limestone is made from skeletons and shells of sea creatures. It contains fossils

**Advantages of having a limestone quarry**

- Jobs for the local people
- money into the economy
- building material for local people easily obtainable and cheap

**Disadvantages of having a limestone quarry**

- very noisy
- dust pollution
- extra traffic from lorries
- loss of animal habitat

