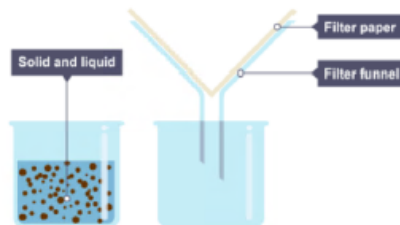


# C3a – Separating mixtures

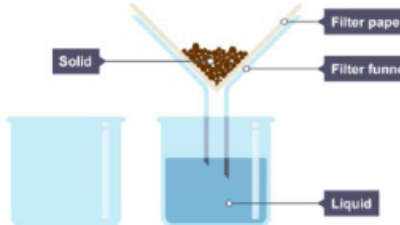
Keyword	Definition
Element	A substance made of atoms all of the same type
Compound	A substance made of 2 or more different types of atoms chemically bonded together
Pure substance	A single element or compound
Mixture	A substance made of two or more different types of particles, not chemically bonded.
Solute	A solid that dissolves in a solvent
Solvent	The liquid in which a solute dissolves
Solution	A mixture of a solvent and solute
Solubility	How much of a substance will dissolve in a solution
Soluble	A substance is soluble if it will dissolve in a solvent
Saturated	A solution in which no more solute will dissolve
Insoluble	A substance that is not capable of dissolving in a solvent

## 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.

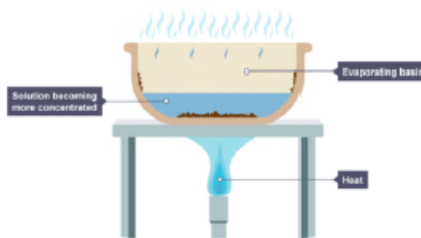


- The mixture of insoluble solid and liquid is poured into the filter funnel.
- The liquid particles are small enough to pass through the paper as a filtrate. The solid particles are too large to pass through the filter paper and stay behind as the residue.



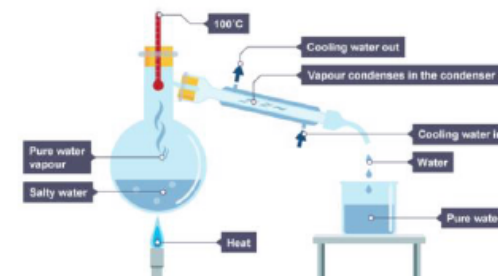
## Evaporation:

- 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.



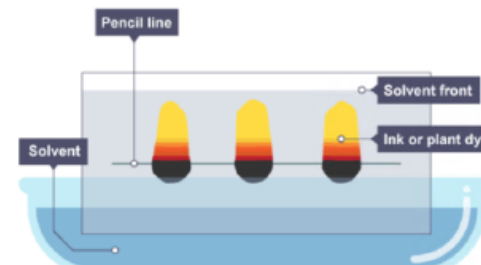
## Distillation:

- 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 substance from one another. Often used when the dissolved substance 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 substances with it.
- As the solvent travels up the paper, the different coloured substances are spread apart.



Further Reading:  
<https://www.bbc.com/bitesize/guides/zgvc4wx/revision/1>

