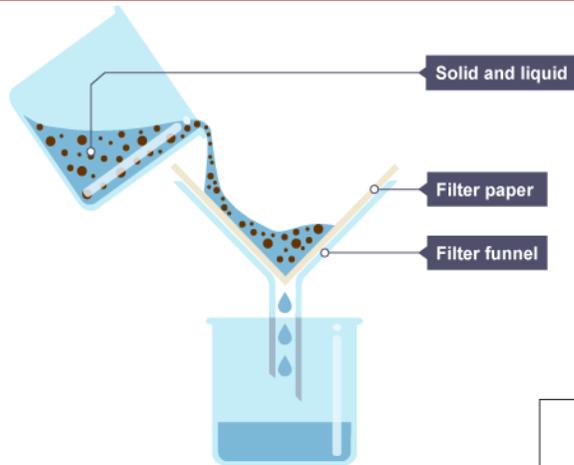


Separation techniques

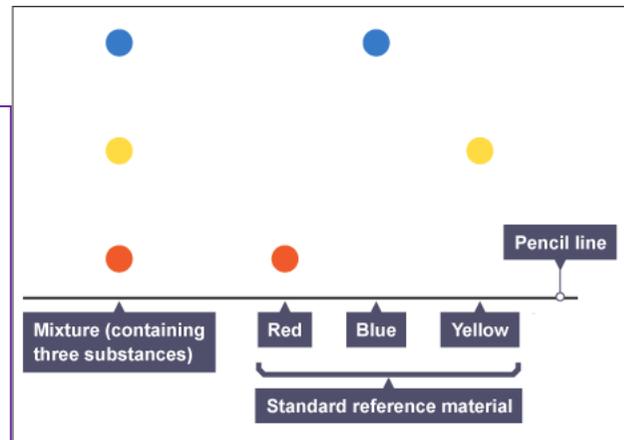
Know the facts		Key words	
1	A mixture is made up of substances that are not chemically joined.	1	Solute: the solid or gas that dissolves in a liquid.
2	In a mixture the substances keep their own properties. You can change the amount of the substances.	2	Solvent: the liquid part of a solution.
3	A pure substance has a sharp melting point. An impure substance does not.	3	Solution: a mixture of a liquid with a soluble solid or gas.
4	A solution is a mixture of a liquid with a solid or a gas. All parts of the solution are the same. You cannot see the separate substances.	4	Pure: a substance is pure if it has no other substance mixed with it.
5	In a solution, the substance that dissolves is called the solute.	5	Soluble: describes a substance which dissolves in a solvent.
6	In a solution, the liquid in which the solute dissolves is called the solvent.	6	Impure: a substance is impure if it has other substances mixed with it.
7	Solvents include water, propanone and ethanol.	7	Solubility: different substances are more or less soluble than others, e.g. sugar is more soluble than salt.
8	A saturated solution is a solution in which no more solute can dissolve.	8	Filtering: the separation of an insoluble solid from a liquid.
9	Solubility of a substance changes with temperature.	9	Distillation: a process that uses evaporation and condensation to separate a mixture
10	Filtration separates a liquid from and insoluble solid.	10	Chromatogram: an image obtained from chromatography.
11	You can separate a solute from its solution by evaporation.	11	Residue: the substance that remains on the filter paper after filtering a mixture.
12	You can separate a solvent from its solution by distillation.	12	Rf = distance moved by the compound ÷ distance moved by the solvent
13	You can separate substances in a mixture by chromatography.		

Filtration is a method for separating an insoluble solid from a liquid. When a mixture of sand and water is filtered:

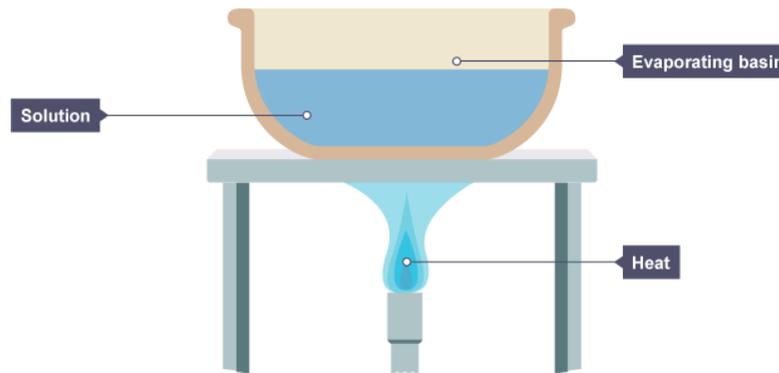
- the sand stays behind in the filter paper (it becomes the residue)
- the water passes through the filter paper (it becomes the filtrate)



Paper chromatography is a method for separating dissolved substances from one another. It is often used when the dissolved substances are coloured, such as inks, food colourings and plant dyes. It works because some of the coloured substances dissolve in the solvent used better than others, so they travel further up the paper.



Evaporation is used to separate a soluble solid from a liquid.



Simple distillation is a method for separating the solvent from a solution. For example, water can be separated from salt solution by simple distillation. This method works because water has a much lower boiling point than salt. When the solution is heated, the water evaporates. It is then cooled and condensed into a separate container. The salt does not evaporate and so it stays behind.

