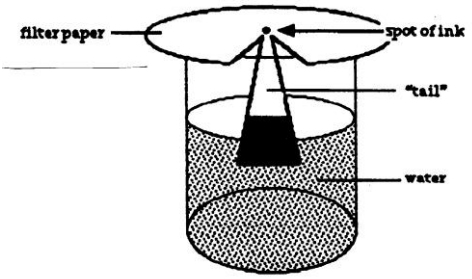
14. Chromatography & Distillation

Chromatography

We have used filtration to separate a solid from a liquid and sieving to separate solids of different size How do we separate two or more liquids mixed together?
One method is **chromatography**.

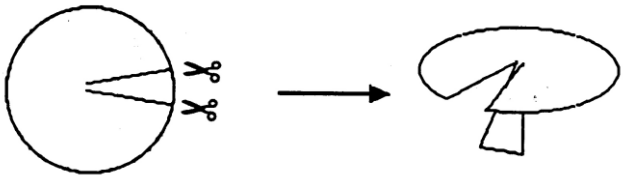


There are several different ways chromatography can be done. You are going to use paper chromatography, which relies on how strongly the different coloured chemicals stick to the paper. That is, some stick more strongly than others and so are slower to move across the paper. This is particularly useful for separating coloured inks.

Collect: 100cm^3 beaker felt tip pen (black or brown)
filter paper
scissors

Activity:

1. Cut the filter paper as shown below.



2. Put a spot at the top of the 'tail' and allow it to dry as shown by your teacher.
3. Half fill the beaker with water.
4. Place the filter paper on top of the beaker with the 'tail' dipping into the water as shown in the diagram at the top of the page and allow the water to move over the paper.
5. Remove the paper before the water goes over the outside edge of the filter paper.

Notes Copy the heading and the diagram at the top of the previous page.
Draw a 'before' and 'after' for your filter paper or stick the dry paper into your jotter.

Copy and complete:-
Coloured inks or dyes can be separated using _____. This happens because the different _____ move across the paper at _____ speeds.

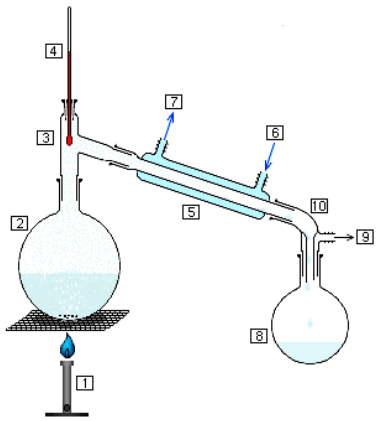
Distillation

Another way to separate two liquids is to use the technique **distillation.** This method can also be used to separate a soluble solid from a solution of solute and solvent.

Demonstration:

Your teacher will demonstrate the technique distillation.

1 Bunsen burner
2 Round bottomed flask
3 Still head
4 Thermometer
5 Condenser



Notes: Collect a cut out sheet of the distillation set up and label numbers 1 to 5. Stick this into your note book.

Copy the Information Below:

Distillation can be used to separate a mixture of two liquids, which have different boiling points. An example of this is in a whisky distillery, where alcohol is separated from a water and alcohol mixture.
It can also be used to separate a solvent from a mixture of a solvent and dissolved solids. An example of this is in water purification, where pure water can be made from sea water, because dissolved salt makes it undrinkable.