6. Compounds and Mixtures

Are Compounds and Mixtures the Same?

Notes:

Mixtures and compounds both contain more than one substance.

Atoms in a mixture are not joined together.

Atoms in compound are joined together.

Atoms in a mixture are easily separated.

Air is a mixture because it contains compounds, elements and atoms not joined together.

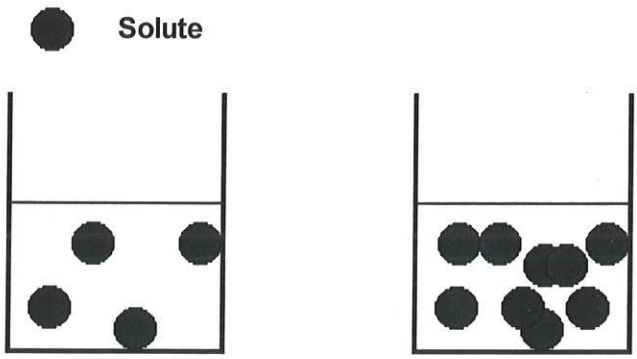
dissolves.

9. Measuring Solubility

Solid	Tally of Number of Spatulafuls	Total Number of Spatulafuls
Sodium hydrogencarbonate	lll etc.	e.g 2
Potassium nitrate		e.g 6
Ammonium nitrate		e.g 12
Sodium chloride		e.g 9

10 Concentration and Saturated Solutions

Concentration



Saturated Solutions

A saturated solution is one which contains the maximum quantity of solute which can dissolve at that temperature.

Growing Crystals

If a saturated solution is heated more solute can dissolve. When a hot saturated solution is cooled the extra solid comes out of solution and forms crystals. All the crystals of a substance have the same basic shape.

11. Alternative Solvents

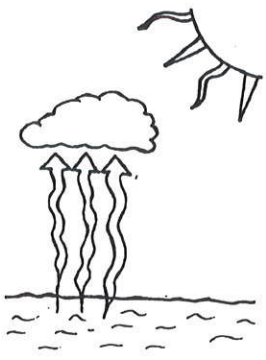
Iodine Solubility

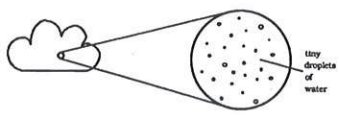
Solvent	Observation	Soluble/Insoluble
KI solution	Brown solution	Soluble
Propanone	Light Brown	Soluble
Water	Colourless	Insoluble

Iodine is soluble in KI solution and propanone

12. Water Cycle

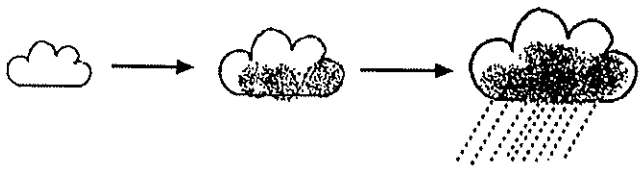
Why do clouds form?





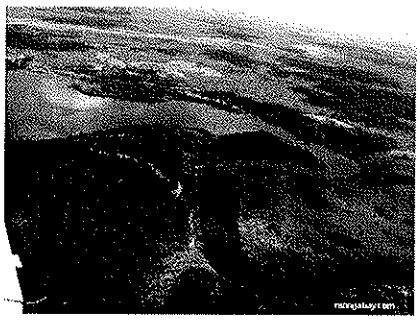
The heat of the sun shining on the sea makes some water evaporate. This water vapour, which is invisible, rises into the air. As it gets higher it also gets colder and at a certain height water vapour starts to condense, forming tiny water droplets. This is how clouds form.

Why does rain fall?



As more and more water evaporates, the clouds get bigger and darker and more filled with water droplets. As this happens the tiny water droplets coalesce (that means join together) to make bigger droplets. Eventually they are too heavy to stay in the cloud so they fall to the ground as rain.

Why does the sea not empty?



After the rain falls to the ground it forms streams and the streams meet together to form bigger streams and eventually the streams are big enough to be called rivers. Again these rivers join together to form bigger rivers, which flow into the seas or oceans.

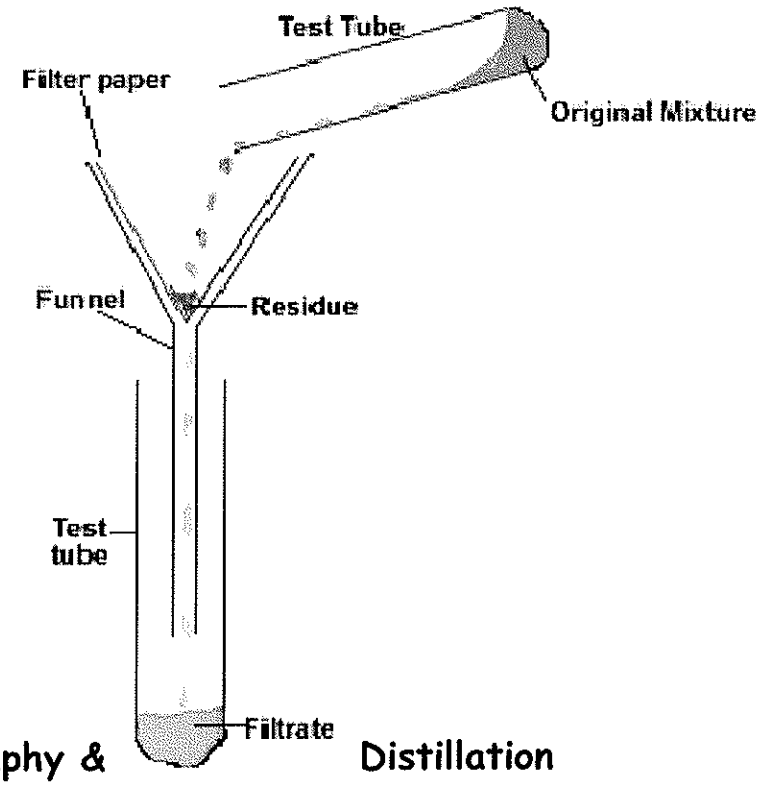
13. Separation Techniques

Sieving

When mixture A was shaken in a Sieve, the rice passes through the sieve while the peas Stay in the sieve.
This is because the holes in the sieve are too small to let the peas through but big enough to let the rice through. Both flour and salt in mixture B have too small particles to be held in the sieve so ~~can~~/can not be separated by this method.

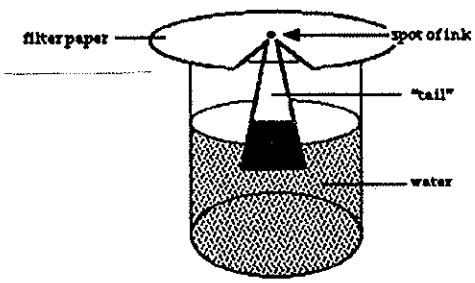
Filtering

Solids can be separated from liquids by filtration. This is because the holes in the filter paper are small enough not to let the solid material through but large enough to let the liquid through.



14. Chromatography & Distillation

Chromatography



Coloured inks or dyes can be separated using Chromatography. This happens because the different dyes move across the paper at different speeds.

Distillation

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.