

# Topic Overview

## Separating Mixtures



### KNOW IT

I know how [pure substances and mixtures](#) are different  
I know what a [solution](#) is  
I know what factors affect how [quickly a substance dissolves](#)  
I know what [factors affect solubility](#)  
I know what filtration is and why it [separates mixtures](#)  
I know how to [separate salt from water](#)  
I know how to separate water from salty water  
I know what [chromatography](#) is and how it is used to separate mixtures of colours



### LINK IT

This topic links to the work you did in Year 5 when you learnt that some materials will dissolve in liquid to form a solution, and described how to recover a substance from a solution. You used knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. You demonstrated that dissolving, mixing and changes of state are reversible changes



### PROVE IT

- DIRT task - Separating salt from rock salt
- End of unit test



### SAY IT

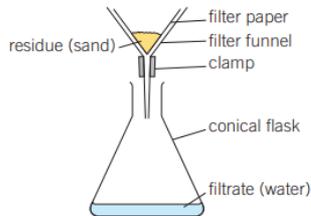
VOCABULARY	DEFINITION
Chromatography	A method for separating dissolved substances from one another. It is often used when the dissolved substances are coloured, such as inks, food colourings and plant dyes.
Condensation	The change of state from a gas to a liquid
Dissolve	When a solute is added to a solvent and it disappears
Distillation	A method for separating the solvent from a solution
Boiling	The change of state from a liquid to a gas
Filtration	A method for separating an insoluble solid from a liquid
Mixture	Different substances which are together. Not chemically bonded so they are easy to separate
Saturated solution	A solution where the maximum amount of solute is dissolved in it
Soluble	Substances which dissolve
Insoluble	Substances which do not dissolve
Solubility	A measure of how much of a substance will dissolve
Solute	The substance that dissolves
Solution	A mixture made up of a solute and a solvent
Solvent	The liquid that a solute dissolves in

## Mixtures

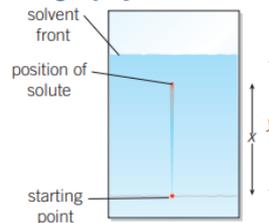
- **Mixtures** are different **substances** which are together, they are not chemically bonded and so are easy to separate
  - The substances which make up a mixture keep their own **properties** unlike those in a compound
  - A mixture is an **impure** substance as it does not have a fixed melting point, instead it has a range
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- A **solution** is a type of mixture which is made up of two parts
  - A **solute** is the part which has dissolved in the solution
  - A **solvent** is the liquid part which the solute has dissolved into
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- The **solubility** of a substance is a measure of how much of it will **dissolve**
  - Not all solutes will dissolve in all solvents
  - Solutes which do not dissolve are known as **insoluble**
  - Substances which do dissolve are known as **soluble**
  - The **solubility** of a substance can be increased by increasing the temperature of the solution or by stirring the solution
  - A **saturated solution** is one where the maximum amount of solute has dissolved in it, no more solute will be able to dissolve

## Separating Mixtures

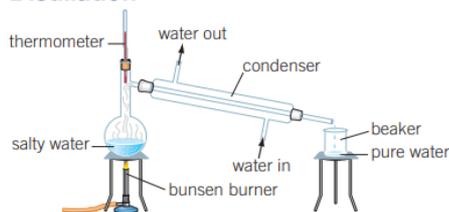
### Filtration



### Chromatography



### Distillation



### Evaporation



Key terms: chromatography  
condensation dissolve  
distillation evaporation  
filtration insoluble mixture  
saturated solution soluble  
solubility solute solution  
solvent