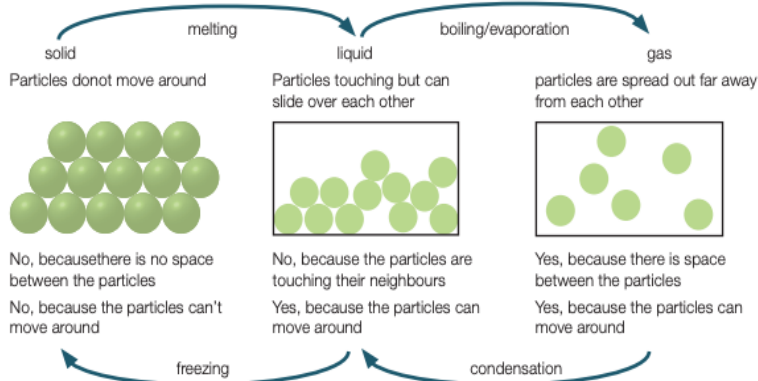


States of matter			Change of state			Glossary		
1	Which state of matter cannot flow?	Solid	1	The change of state from liquid to solid.	Freezing	1	Boiling	The change of state from liquid to gas that occurs when bubbles of the substance in its gas state form throughout the liquid. Boiling occurs at the boiling point of a substance.
2	Which state of matter will take the shape of the bottom of a container which it is in?	Liquid	2	The change of state from a liquid to gas that occurs when bubbles of the substance in its gas state form throughout the liquid.	boiling			
3	How do the particles in a solid move?	They vibrate around a fixed point	3	The movement of liquid or gas particles from a place of high concentration to a place of low concentration.	Diffusion			
4	What is the temperature known as when a gas turns into a liquid?	Boiling point	4	The change of state from liquid to gas that occurs when particles leave the surface of the liquid only. It can happen at any temperature	Evaporating			
5	A substance does not have a fixed boiling point. What does this tell you about the substance?	It is impure	5	What is made up of different substances not chemically joined together.	Mixture			
6	What is condensation?	The process by which a gas turns into a liquid	6	Substance A has a melting point of 114 °C and a boiling point of 184 °C. At 20 °C it is in what state?	solid			
7	State three factors which will decrease the speed of diffusion.	Lower temperature, heavier particles, a liquid rather than a gas	7	Substance B has a melting point of -7 °C and a boiling point of 59 °C. At 20 °C it is in what state?	Liquid			
			8	Substance C has a melting point of 0 °C and a boiling point of 100 °C. At 150 °C it is in what state?	Gas			
			9	Why can you not compress a solid?	Because the particles touch their neighbours			
			10	How does temperature affect solubility?	Most substances get more soluble as temperature increases.			
						2	Boiling point	The temperature at which a substance boils.
						3		The process by which a substance changes from one state to another
						4	Condensing	The change of state from gas to liquid. It can happen at any temperature below the boiling point.
						5	Density	The mass of a material in a certain volume
						6	Freeze	The change of state from liquid to solid at the melting point of a substance
						7	Particle	A very tiny object, such as an atom or molecule, that materials are made from. They are too small to be seen with a microscope.
						8	Property	A quality of a substance or material that describes its appearance, or how it behaves
						9	Pure substance	A single material with no other substances mixed with it
						10	Soluble/insoluble	A soluble substance can dissolve in a given solvent. An insoluble substance cannot dissolve in a given solvent.

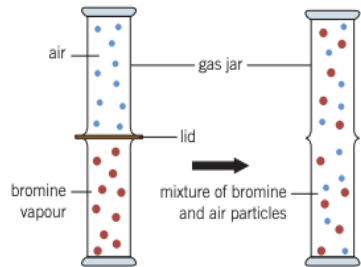
Changes of state

changes of state
state of matter
how do the particles move?
arrangement of particles
can it be compressed?
can it flow?
changes of state



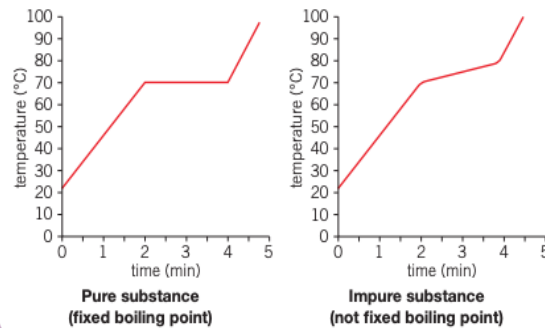
Diffusion

- **Diffusion** is the movement of particles from an area of high concentration (lots of the same particle) to an area of low concentration (not a lot of the same particle)
- It is a random process which does not need energy
- The speed of diffusion can be increased by:
 - A higher temperature
 - Smaller particles diffusing
 - A gas rather than a liquid
- Diffusion does not happen in a solid as the particles can't flow



Melting and boiling points

- The **melting point** of a substance is the temperature at which it turns from a solid to a liquid, or a liquid to a solid
- The **boiling point** of a substance is the temperature at which it turns from a liquid to a gas or a gas to a liquid
- **Pure substances** have a fixed (sharp) boiling or melting point, whereas **impure substances** have a range which appears as a diagonal line on a graph

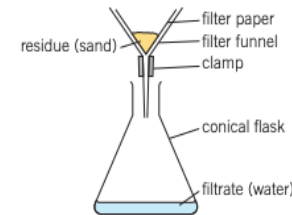


Mixtures

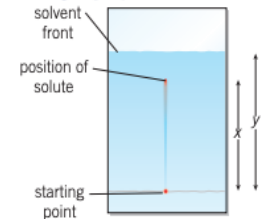
- **Mixtures** are different **substances** which are together, they are not chemically bonded and so are easy to separate
- The substances which make up a mixture keep their own **properties** unlike those in a compound
- A mixture is an **impure** substance as it does not have a fixed melting point, instead it has a range
- 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
- 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

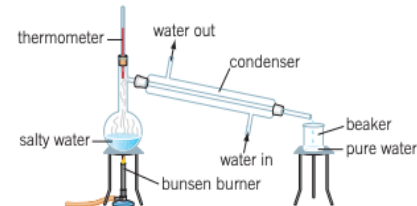
Filtration



Chromatography



Distillation



Evaporation

