



Year 7 Particles

Keyword	Definition
Attraction	The force that pulls particles towards each other.
Changes of state	Substance usually change state when they are heated or cooled (gain or lose thermal energy)
Condensing	When a gas is cooled, and it changes into a liquid.
Evaporating	When a liquid is heated, and it changes into a gas.
Evaporation	The process by which a soluble solid can be separated from a solvent (liquid).
Filtration	The process by which an insoluble solid can be separated from a solvent (liquid).
Freezing	When a liquid is cooled, and it changes into a solid.
Impure substance	A substance made up from two or more different types of particles (not the same as compound)
Insoluble	A substance which cannot be dissolved in a liquid.
Melting	When a solid is heated and it changes into a liquid.
Mixture	Impure substances which are not chemically joined together and can easily be separated.
Particle	Tiny things that all materials are made from.
Pure substance	A substance made up from one type of particle (an element or compound).
Soluble	A substance which can be dissolved in a liquid.
Solute	A solid dissolved in a solvent.
Solution	The mixture formed when solutes are dissolved in solvents.
Solvent	A liquid that dissolves a solute.
States of matter	There are three main states of matter; solid, liquid and gas.
Thermal energy	The energy stored in hot objects.

Useful YouTube links:



[States of matter](#)



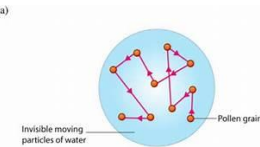
[Changing state](#)



[Separating mixtures](#)

Brownian motion

The random movement of particles in a fluid, due to colliding with particles in the surrounding medium.



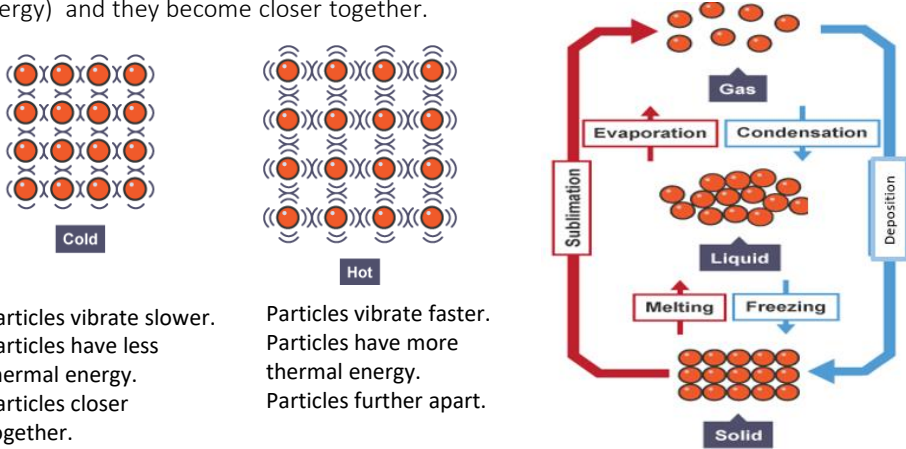
States of matter

Everything is made up of tiny particles and all particles attract each other. How much they are attracted and how much energy the particles have will determine the properties of the substance.

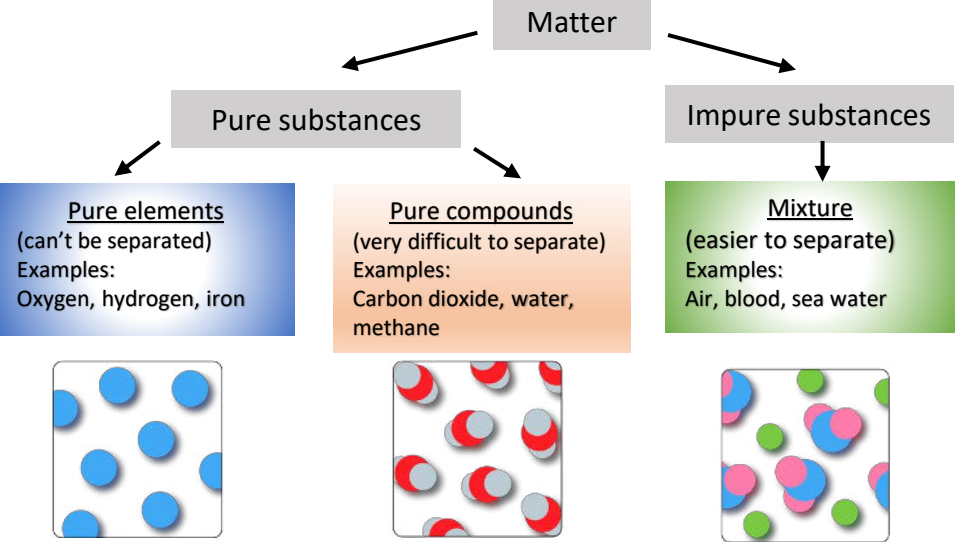
State	Solid	Liquid	Gas
Diagram			
Arrangement of particles	Regular arrangement	Randomly arranged	Randomly arranged
Movement of particles	Vibrate about a fixed position	Move around each other	Move quickly in all directions
Closeness of particles	Very close	Close	Far apart

Changing state

When changing state, the particles gain or lose thermal energy, but the size of the particles remains the same. Particles move slower when they are cooled (lose thermal energy) and they become closer together.



Pure and Impure substances



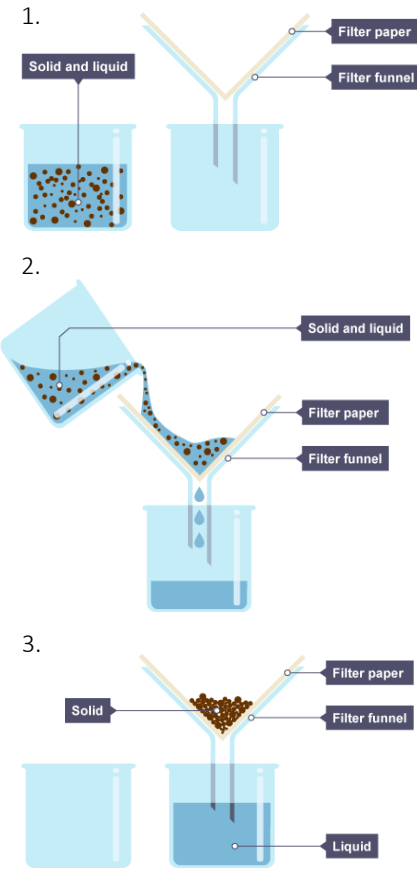
Dissolving

When a solute becomes evenly dispersed throughout a solvent, we say it has dissolved. Some substances dissolve easily such as sugar in water, whereas some do not dissolve at all such as sand.



Filtration

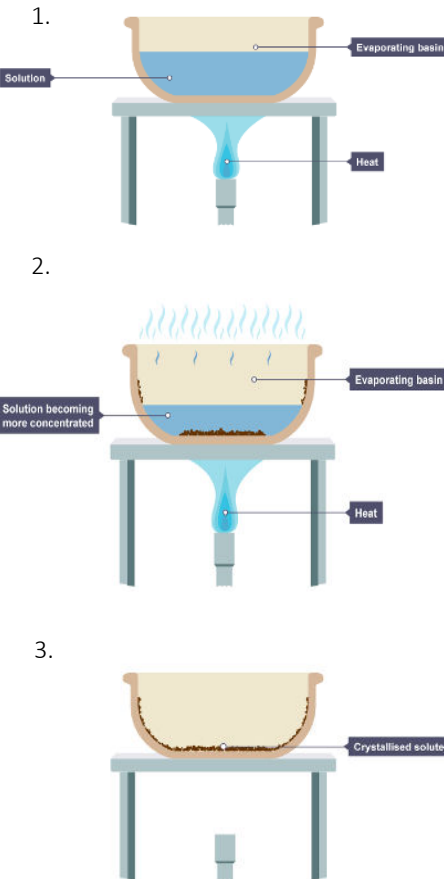
Filtration is a process in which an insoluble solid can be separated from a solvent (liquid). An example of sand and water is below:



The solvent will filter through the filter paper and the insoluble solid remains on the filter paper.

Evaporation

Evaporation is a process in which a soluble solid can be separated from the solvent (liquid). An example of copper sulphate solution is below:



The solvent will evaporate and the soluble solid remains in the evaporating basin.