

Particle model

Changes of state

Key term	Definition
Boil	when a liquid is heated, gains energy and turns into a gas, at its boiling point
Boiling point	the temperature at which a pure substance changes from a liquid to a gas or from a gas back to a liquid
Condense	when a gas is cooled, energy is transferred from the gas to the gas' surroundings and the gas turns into a liquid
Endothermic	a physical change or chemical reaction which transfers energy from its surroundings, causing the surroundings to get cooler
Evaporate	when the surface of a liquid gains energy and turns into a gas; this can happen below the boiling point
Exothermic	a physical change or chemical reaction which transfers energy to its surroundings, causing the surroundings to get hotter
Freeze	when a liquid is cooled, energy is transferred from the liquid to the liquid's surroundings and the liquid turns into a solid
Melt	when a solid is heated, gains energy and turns into a liquid, at its melting point
Melting point	the temperature at which a pure substance melts and changes from a solid to a liquid, or from a liquid back to a solid
Sublime	when a solid is heated, gains energy and turns into a gas, without turning into a liquid first

Diffusion

Key term	Definition
Concentration	the amount of solute present in a known volume of solution
Diffusion	the movement of a substance from an area of high concentration to an area of low concentration
High concentration	a large amount of solute present in a known volume of solution
Low concentration	a low amount of solute present in a known volume of solution

Solutions

Key term	Definition
Dissolve	when a solute is added to a solvent and the solute breaks into much smaller particles and spreads out
Insoluble	describes a substance which does not dissolve in a particular solvent
Miscible	when two liquids can mix and do not separate out into layers
Soluble	describes a substance which dissolves in a particular solvent
Solute	a substance that dissolves in a solvent to make a solution
Solution	the mixture produced when a solute dissolves in a solvent
Solvent	a substance that dissolves the solute to make a solution

States of matter

Key term	Definition
Atom	the smallest possible particle of an element; atoms are made up of protons, neutrons and electrons
Chemical bond	a strong (electrostatic) force of attraction holding atoms together
Flow	when a gas or liquid moves steadily and continuously
Force	the attraction (pull) and repulsion (push) between objects; in chemistry, these objects are particles
Gas	a state of matter with no defined shape or volume and where the particles move randomly and have a large distance between them
Ion	a charged particle formed when one or more electrons are lost or gained from an atom or molecule
Kinetic energy	the energy an object has because of its motion
Latent heat	energy transferred to or from a substance during a change in its physical state that occurs without changing its temperature
Liquid	a state of matter with a defined volume but not a defined shape and where the particles are touching and moving randomly
Molecule	two or more atoms connected by chemical bonds
Particle	a small portion of matter; examples include atoms, molecules or ions
Solid	a state of matter with a defined shape and volume and where the particles are touching and vibrating
Vibrate	move repetitively and rapidly to and fro