

The Particle Model

<u>Question</u>	<u>Answer</u>
Define particle	A very tiny object such as an atom or molecule, too small to be seen with a microscope.
Describe the arrangements of particles in a solid	Close together, regular arrangement in rows
Describe the movement of particles in a solid	Vibrating on the spot
Describe the arrangements of particles in a liquid	Close together, irregular arrangement
Describe the movement of particles in a liquid	Able to move freely past each other
Describe the arrangements of particles in a gas	Spread out, random
Describe the movement of particles in a gas	Moving fast in all directions
Define evaporating	Change from liquid to gas at the surface of a liquid, at any temperature.
Define boiling	Change from liquid to a gas of all the liquid when the temperature reaches boiling point.
Define condensing	Change of state from gas to liquid when the temperature drops to the boiling point.
Define melting	Change from solid to liquid when the temperature rises to the melting point.
Define freezing	Change from liquid to a solid when the temperature drops to the melting point.

Define sublimation	Change from a solid directly into a gas.
Describe what happens to temperature during a change of state	Stays the same
Explain what happens when a substance is heated	Particles have more energy and spread out more. Material expands. Eventually the density will change. Particles stay the same size
Explain what happens when a substance is cooled	Particles have less energy and move closer together. Material contracts. Eventually will change density.
Define diffusion	The spreading out of a substance from an area of high concentration to an area of low concentration.
Explain how temperature affects the rate of diffusion	If temperature is increased, the particles have more kinetic energy so therefore spread out quicker.
Define gas pressure	Caused by collisions of particles with the walls of a container.
Define density	Density is a measure of how many particles of a substance are in a given area/volume.
Give the equation used to calculate density	Density (g/cm ³) = $\frac{\text{mass (g)}}{\text{volume (cm}^3\text{)}}$

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Question	Answer
Define particle	A very _____ object such as an atom or molecule, too small to be seen with a microscope.
Describe the arrangements of particles in a solid	Close together, regular arrangement in _____
Describe the movement of particles in a solid	V_____ on the spot
Describe the arrangements of particles in a liquid	C_____ together, irregular arrangement
Describe the movement of particles in a liquid	Able to _____ freely past each other
Describe the arrangements of particles in a gas	Spread out, r_____
Describe the movement of particles in a gas	Moving _____ in all directions
Define evaporating	Change from _____ to ___ at the s_____ of a liquid, at any temperature.
Define boiling	Change from _____ to a ___ of all the liquid when the temperature reaches boiling point.
Define condensing	Change of state from ___ to _____ when the temperature drops to the boiling point.
Define melting	Change from _____ to _____ when the temperature rises to the melting point.
Define freezing	Change from _____ to a _____ when the temperature drops to the melting point.

Define sublimation	Change from a s_____ directly into a g_____.
Describe what happens to temperature during a change of state	Stays the _____
Explain what happens when a substance is heated	Particles have more _____ and spread out more. Material expands. Eventually the _____ will change. Particles _____ the _____ size
Explain what happens when a substance is cooled	Particles have _____ energy and move _____ together. Material contracts. Eventually will change _____
Define diffusion	The spreading out of a substance from an area of _____ concentration to an area of _____ concentration.
Explain how temperature affects the rate of diffusion	If temperature is _____, the particles have more k_____ e_____ so therefore spread out quicker.
Define gas pressure	Caused by c_____ of p_____ with the walls of a container.
Define density	Density is a measure of how many _____ of a substance are in a given area/_____.
Give the equation used to calculate density	Density (g/cm ³) = $\frac{\text{(g)}}{\text{(cm}^3\text{)}}$