Particle model

Answers

KS3 science quick questions

This topic online

Activate 1: Particles and their behaviour; Activate 3: Particle model and state change | Exploring Science 7G

Q	Answer	Remember
1	solid	Solids keep their own shape because the particles are locked in place.
2	gas	Gas particles spread out to fill whatever container they are in.
3	liquid	Liquids flow because particles can move around each other while staying close.
4	melting	Heat gives the particles enough energy to break out of their fixed pattern.
5	evaporation	Evaporation happens from the surface at any temperature - boiling happens all through the liquid.
6	condensation	Water vapour cools on the cold glass, slows down and clumps back into a liquid.
7	sublimation	Sublimation skips the liquid stage altogether - dry ice does this too.
8	diffusion	Particles move randomly, so over time they spread out evenly - no stirring needed.
9	stays the same	No particles are added or lost - they are just arranged differently.
10	faster	Heating gives particles more energy, so they move about more.
11	g/cm3	Density = mass / volume, so the unit is a mass unit over a volume unit.
12	2.5 g/cm3	30 / 12 = 2.5. Each cubic centimetre of pebble has 2.5 g of mass.
13	gas	Big gaps between gas particles mean very little mass in each cm^3.
14	colliding with it	Billions of tiny collisions every second add up to a steady push.
15	boiling point	For pure water at sea level, the boiling point is 100 °C.
16	increases	Hotter particles move faster, so they hit the inside of the ball harder and more often.
17	0.9 g/cm3	0.18 kg = 180 g, then 180 / 200 = 0.9.
18	30 g	0.6 × 50 = 30. Rearranging density = mass / volume gives mass = density × volume.

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Q	Answer	Remember
19	Gas particles have large gaps between them so they can be pushed closer together, but the particles in a solid are already touching.	Squashing only works if there is empty space between the particles to close up.
20	hot	Hotter particles move faster, so diffusion speeds up as temperature rises.

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