

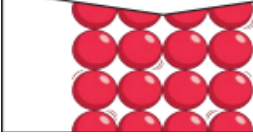
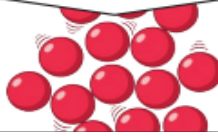
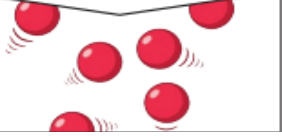


States of Matter

Useful vocabulary

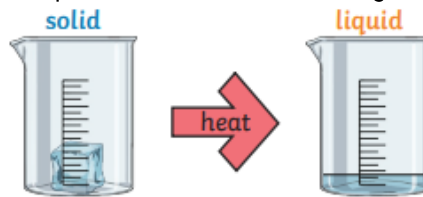
states of matter	Materials can be one of three states: solids, liquids or gases. Some materials can change from one state to another and back again.
solids	These are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy.
liquids	Take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow or be poured.
gases	Spread out to completely fill the container or room they are in. They do not have a fixed shape.
water vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into water vapour.
melting	When a solid changes to a liquid.
freezing	When a liquid turns to a solid.
evaporation	When a liquid turns into a gas
condensation	When a gas turns into a liquid.
precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.
boiling point	The temperature at which a liquid starts to turn into a gas. The boiling point of water is 100°C.
freezing point	The temperature at which a liquid starts to turn into solid. The freezing point of water is 0°C.

The 3 states of matter

Solid	Liquid	Gas
		
Particles in a solid are close together and can only vibrate.	Particles in a liquid are close together but can move around each other.	Particles in a gas are spread out and move quickly in all directions.

Changes of state

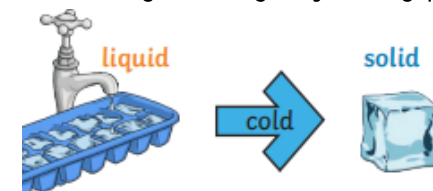
When water and other liquids reach a certain temperature, they change state into a solid or gas. The temperature that these changes happen at are called the boiling, melting or freezing point.



If a solid is heated to its melting point, it **melts** and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.



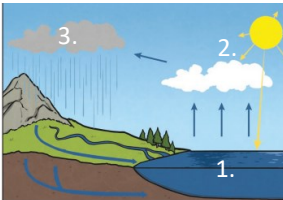
Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air.



When **freezing** occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.



Condensation is when water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches the cold surface.



Condensation and evaporation occur within the **water cycle**. The water cycle describes the journey that water takes as it moves from the land to the sky and back again.

1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. The water vapour rises, then cools and condenses to form water droplets in the clouds.
3. When the droplets get too heavy, they fall as rain, sleet, hail or snow (precipitation).