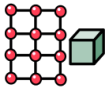
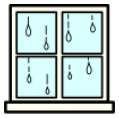
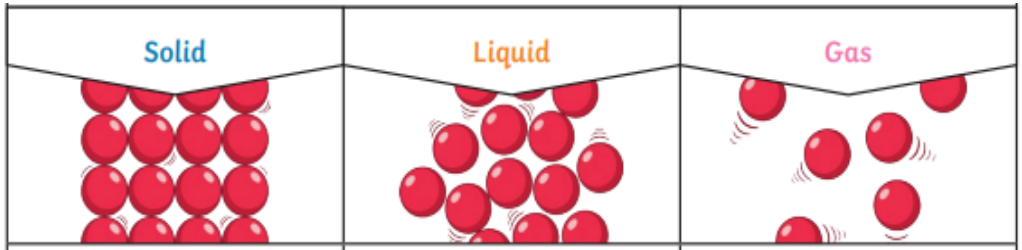
Changes of State

Year 4

Science

Solids 	Solid particles are very close together so they hold their shape.
Liquids 	Liquids can flow and take the shape of their container because the particles are more loosely packed.
Gases 	Gas particles are free to move around and will fill it container.
Water vapour 	This is water that takes the form of a gas. When water is boiled, it evaporates into water vapour.
Evaporate 	When a liquid is heated and turned into a gas or vapour.
Condense 	Turn a gas into a liquid.

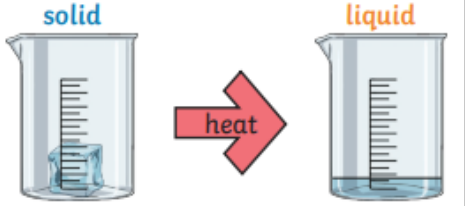
The Three States of Matter



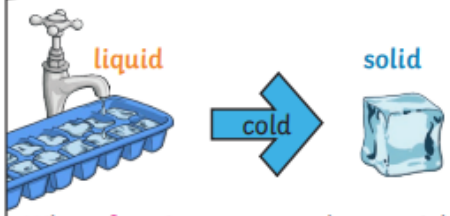
Solid	Liquid	Gas
Particles in a solid are close together and cannot move. They can only vibrate.	Particles in a liquid are close together but can move around each other easily.	Particles in a gas are spread out and can move around very quickly in all directions.

Changing States

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

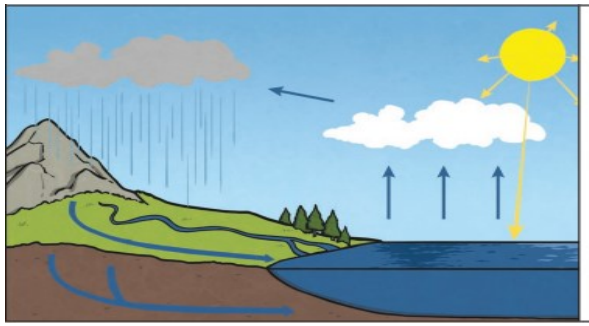


If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.



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.

The Water Cycle



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

Condensation and evaporation occur within the water cycle.