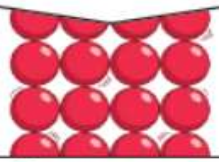
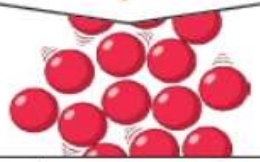
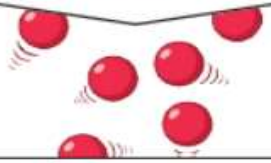
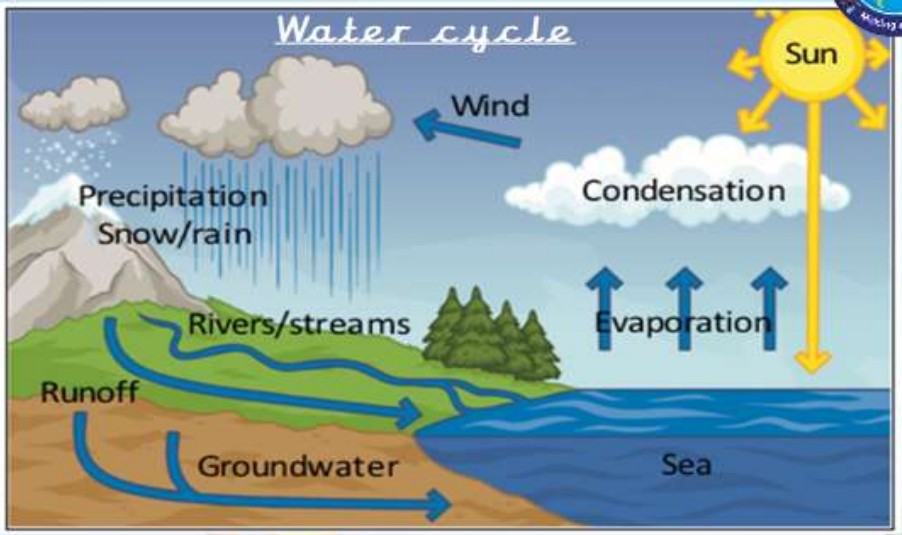
Knowledge Organiser: States of matter

Key Knowledge

There are 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.

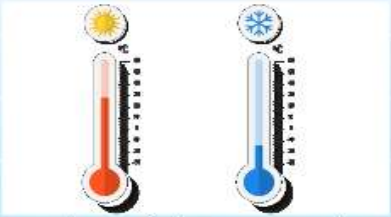


Changing State

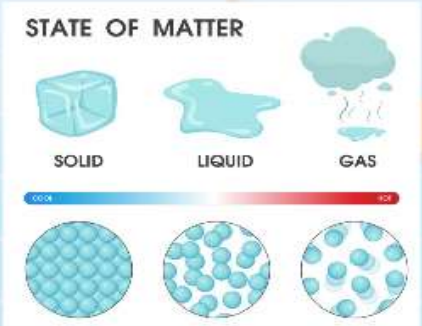
Evaporation	Condensation	Melting	Freezing
Evaporation occurs when a liquid changes into a gas or water vapour. 	Condensation is when a gas cools and changes to a liquid. 	This is when a solid is heated and changes to a liquid. 	Freezing is the process of a liquid cooling and changing to a solid. 

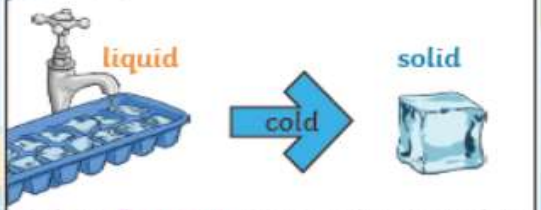
- Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
- This water vapour rises, then cools down to form water droplets in clouds (condensation)
- When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (precipitation)

Celsius

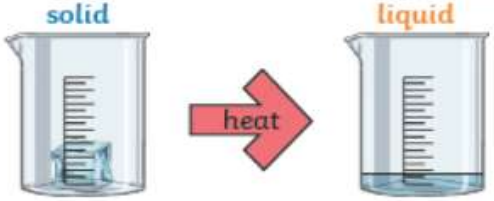


A scale of temperature on which water freezes at 0° and boils at 100°





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.



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.

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Vocabulary

- **Boiling** - the action of bringing a liquid to the temperature at which it bubbles and turns to vapour.
- **Collection** - when water that falls from the clouds as rain, snow, hail or sleet, collects in the oceans, rivers, lakes, streams.
- **Condensation** - the conversion of a vapour or gas to a liquid.
- **Carbon dioxide** - a colourless, odourless gas that is naturally present in air (about 0.03 per cent) and is absorbed by plants in photosynthesis.
- **Evaporation** - the process of turning from liquid into vapour by increasing the temperature.
- **Freezing** - the process of turning a liquid into a solid by reducing the temperature.
- **Gases** - substances that escape from an unsealed container.
- **Liquids** - substances that form a pool not a pile.
- **Melting** - substances becoming liquefied by heat.
- **Particles** - a minute portion of matter.
- **Precipitation** - rain, snow, sleet, or hail that falls to or condenses on the ground.
- **Solids** - substances that hold their shape.
- **Transpiration** - the passage of watery vapour from a living body like a plant into the atmosphere.
- **Water vapour** - water in the gaseous state, especially when due to evaporation at a temperature below the boiling point.
- **Water cycle** - the cycle of processes by which water circulates between the earth's oceans, atmosphere, and land.