



Prior Knowledge Retrieval

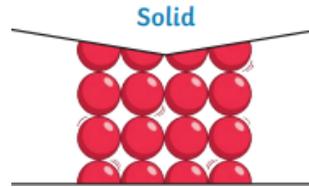
This unit builds upon work in:

Year 1 Comparing Materials

Year 2 Uses of Materials

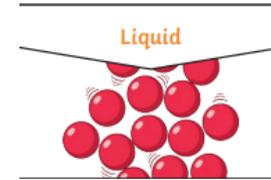
Year 2 Changing Shape

Solids



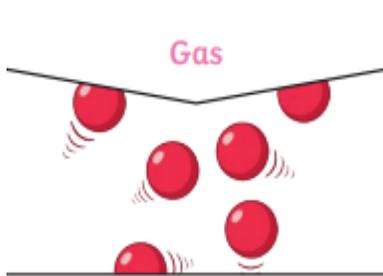
Particles in a solid are close together and can not move. They can only vibrate.
Particles are strongly attracted to each other (bonds) and held together.

Liquids



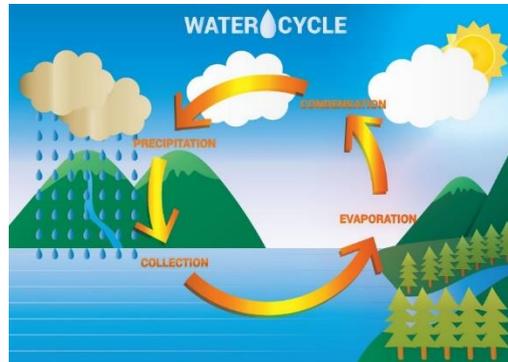
Particles in a liquid are close together but can move around each other easily.
Particles roll around each other.
Liquids can flow into any shape and will take the shape of their container.

Gas



Particles in a gas are spread out and can move around very quickly in all directions allowing them to collide with each other and with the walls of the container.
There is very little attraction between particles so large amount of movement and space takes place. No fixed shape and no fixed volume.

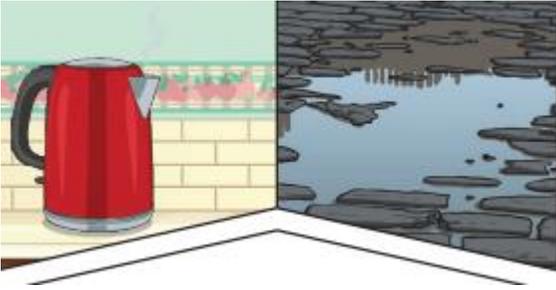
The water cycle



In the water cycle, water is warmed by the Sun. It evaporates from the sea, rivers and lakes. It turns to vapour and rises in the air. Water vapour in the air becomes cold and changes back into a liquid, forming clouds. As the clouds cool down, the water droplets join together to form rain. Rain falls on the land and eventually runs back into the sea. Then the cycle starts again.

solid	liquid	gas
● rigid	● not rigid	● not rigid
● fixed shape	● no fixed shape	● no fixed shape
● fixed volume	● fixed volume	● no fixed volume
cannot be squashed	cannot be squashed	can be squashed
Solid (at room temperature)	Liquid (at room temperature)	Gas (at room temperature)
Wood Iron Copper Plastic	water milk blood oil	oxygen carbon dioxide nitrogen steam

Evaporation and condensation

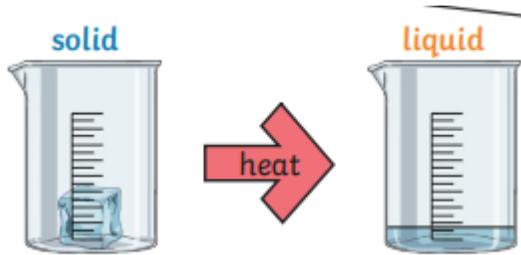


Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air.

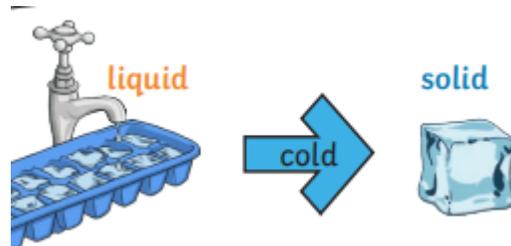


Condensation is when water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches a cool surface.

Melting and Freezing



If a solid is heated to its melting point, it melts and changes into 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 older and colder. They can then only move gently on the spot, giving them a solid structure.

Key Vocabulary

Solid - Firm and stable in shape.

Liquid - A substance that flows freely but is consistent in volume.

Gas - A substance or a mixture in a state where it expands to fill the volume of the container.

Melting - Becoming liquified by heat.

Freezing - Temperatures below 0° Celsius.

Melting point - The temperature at which a substance changes state from solid to liquid.

Boiling point - The temperature at which a liquid changes to a vapour.

Evaporate/evaporation - The process of turning from a liquid into a vapour.

Condensate/condensation - The process when water vapour in the air changes from a gas back into a liquid.

Precipitation- Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

Water vapour- This is water that takes state of a gas. When water is boiled it evaporates in water vapour.

States of matter- Materials can be one of three states: solids, liquids or gases. Some materials can change from one state and back again.