



Be the best that we can be.

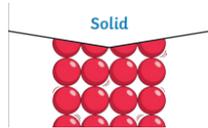
EBJ Knowledge Organiser Science Year 4

Spring 1 States of matter

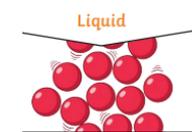


What are the states of matter?

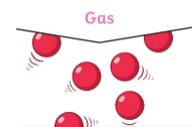
Materials can be one of three states: **solids**, **liquids** or **gases**. Some materials can change from one state to another and back again.



Solid – these are materials that keep their shape unless a force is applied to them. They can be hard, soft or even squashy. **Solids** take up the same amount of space no matter what has happened to them. Particles in a **solid** are close together and cannot move. They can only vibrate.



Liquid – take the shape of their container. They can change shape but do not change the amount of space they take up. They can flow and be poured. Particles in a **liquid** are close together but can move around each other easily.

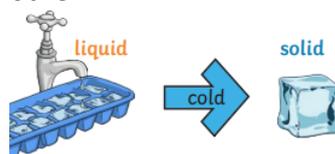


Gas – can spread out to completely fill the container or room they are in. Particles in a **gas** are spread out and can move very quickly in all directions.

How can we change states of matter?

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.



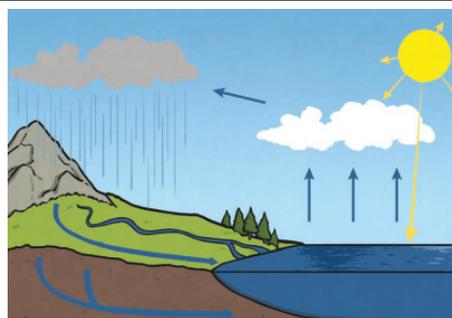
When freezing occurs, the particles in the **liquid** begin to

slow down as they get colder and colder. They can then only move gently on the spot, giving them a **solid** structure.

Key Vocabulary

boiling, boiling point, condense, condensation, condensing, evaporate, evaporation, freeze, freezing point, gas, liquid, matter, material, melting, melting point, solid

The water cycle



Condensation and **evaporation** occur within the water cycle.

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**).

Evaporation and condensation



Evaporation occurs when water turns in 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 the cold surface.

Read all about it. Can you find these books in the local library?

