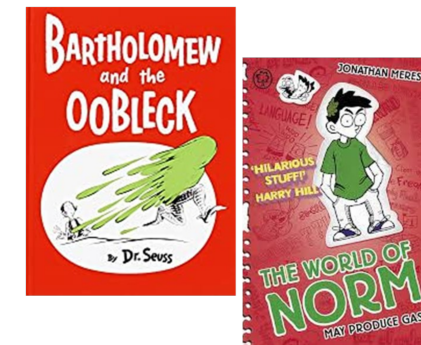
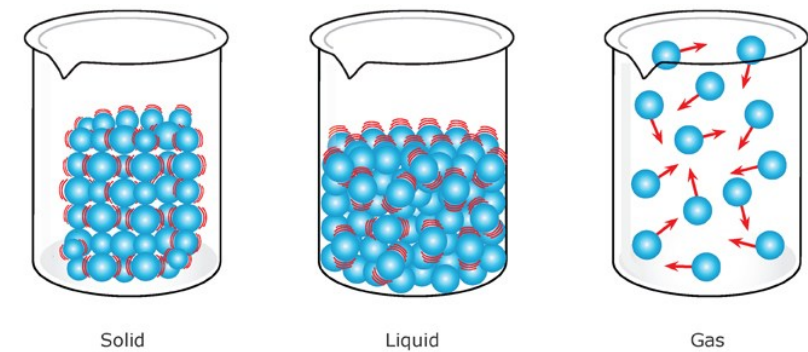


Year 4

States of Matter



How are you working Scientifically?

Set up simple practical enquiries, comparative and fair tests
Make systematic and careful observations
Gather, record, classify and present data in a variety of ways
Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
Report on findings from enquiries
Use results to draw simple conclusions
Identify differences, similarities or changes related to simple scientific ideas and processes



Pre existing knowledge

- Why some materials are used for certain purposes because of their properties.
- The water cycle, and the processes of evaporation, condensation and precipitation.

Vocabulary	
States of matter	Materials can be one of the 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. Solids take up the same amount of space no matter what has happened to them.
Liquids	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 and can be poured.
Gases	Gases can spread out to completely fill the container or room they are in. they do not have any fixed shape but they do have a mass.
Water vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.
Melt	This is when a solid changes to a liquid.
Freeze	Liquid turns to a solid during the freezing process.
Evaporate	Turn a liquid into a gas.
Condense	Turn a gas into a liquid.
Precipitation	Liquid or solid particles that fall from a cloud as rain, sleet, hail or snow.

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).

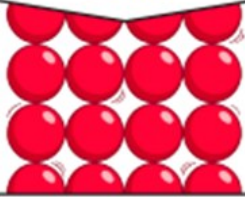
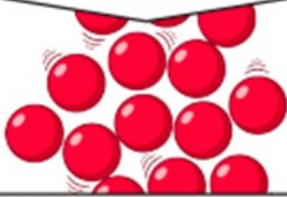
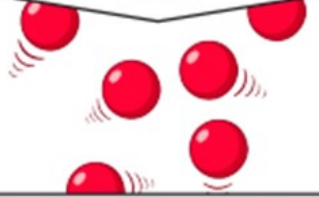
3. When the droplets get too heavy, they fall back to the Earth as rain, sleet, hail or snow (precipitation).

Particles are what materials are made from.

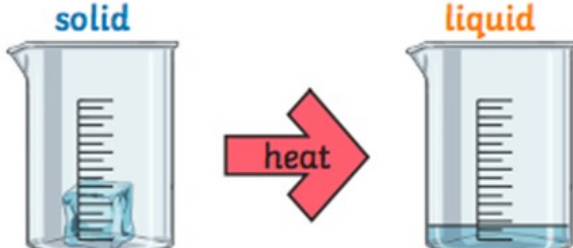
They are so small that we cannot see them with our eyes.

The properties of a substance depend on what its particles are like, how they move and how they are arranged.

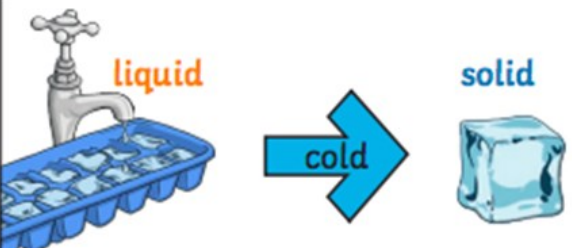
Particles behave differently in solids, liquids and gases.

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.

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.