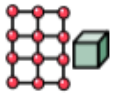
Year 4 - Science Knowledge Organiser - States of Matter

At the end of this topic I will be able to understand the difference between solids, liquids and gasses and how materials can change states.

Key Vocabulary

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.
Solids 	These are materials that keep their shape unless a force is applied to them. 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 or 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
Freeze 	Liquid turns to a solid during the freezing process.
Evaporate 	Turn a liquid into a gas.
Condense 	Turn a gas into a liquid

Jobs related to chemistry

 Scientist

 Engineer

 Teacher

Key knowledge

States of matter

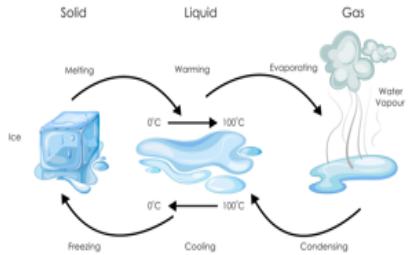
Everything in our universe is made of matter. There are 3 states of matter:

Solid Liquid Gas

Solid particles have strong bonds so solids have a fixed shape. Liquid particles have weaker bonds and more energy so liquids can change shape. Gas particles have really weak bonds so gases can spread out and move freely.

Changes of state

States of matter can change. Substances can be heated or cooled to change from one state to another.



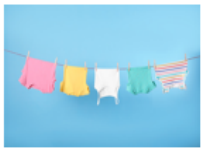
Ice Water Water Vapour

In water, the melting and freezing point is 0°C and the boiling point is 100 °C. Different substances have different melting, freezing and boiling points.

Condensation

When water vapour (gas) touches a cold surface, the particles lose energy and the bonds become stronger, turning the gas into a liquid.

Evaporation



Heating liquid water increases the particle's energy and the bonds become weaker, turning it into a gas. The hotter the temperature, the faster the rate of evaporation.

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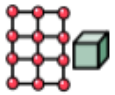
Solids 	These are materials that keep their shape unless a force is applied to them. Solids take up the same amount of space no matter what has happened to them.
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