Belmont Primary School

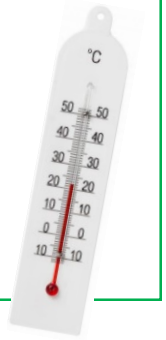
Science Year 3/4

States of matter

We are scientists

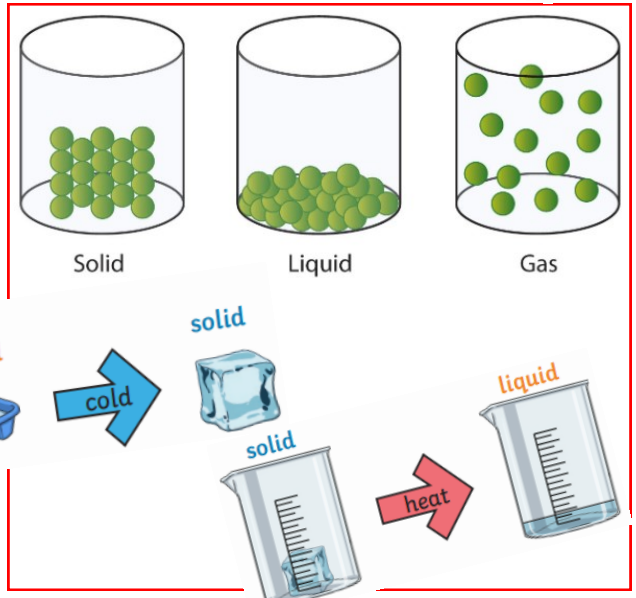
Resources

- Solids
- Liquids
- Gases
- Thermometers
- Heat and cool



Sticky Knowledge

* Solids are rigid, fixed shape and volume and cannot be squashed.
* Liquids are not rigid, don't have a fixed shape, have a fixed volume and cannot be squashed.
* Gases are not rigid, have no fixed shape or volume and can be squashed.
• Heating and cooling causes materials to melt and freeze.
• A material's melting and freezing point is the same temperature.
• Heating and cooling can cause materials to evaporate and condense.
• A higher temperature will speed up evaporation.



Key skills

explore a variety of everyday materials and develop simple descriptions of the states of matter (solids hold their shape; liquids form a pool not a pile; gases escape from an unsealed container).

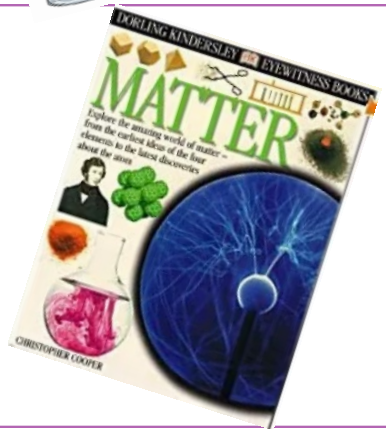
observe water as a solid, a liquid and a gas and note the changes to water when it is heated or cooled

compare and group materials together, according to whether they are solids, liquids or gases

observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C)

identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature

Book to enjoy



Key Vocabulary

Recap
Question - a query
Fair test - controlled with one variable, performed to answer a scientific question
Pattern —repeated observations
Evidence - facts to prove findings

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. 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 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 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.