

States of Matter — Year 4 (Also taught in Y5 2020-21)

Previous Learning reminder:

Words to describe properties of materials might include:

Hard, soft, rough, smooth, shiny, dull, absorbent, waterproof, transparent, translucent or opaque.

The shape can be changed through squashing, twisting, bending or stretching.

Solid

Ice is solid water. It keeps its shape.



Liquid

We drink liquid water. The surface stays flat.



Gas

We see water as gas when it is steam. It travels through the air.



Water freezes and melts at **0°C**. This is the temperature at which ice turns into a liquid, and when liquid water becomes solid.



Water boils at **100°C**. This is the temperature at which liquid water turns into gas **and bubbles of gas are seen in the liquid.**



Liquid water can turn into gas at a lower temperature (for example, when clothes dry). This is called evaporation.



Water condenses when water gas becomes cool. This might be a steamed up window or a cloud.



Key Vocabulary

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| solid | A solid stays the same shape whether it is in a container or not. |
| liquid | A liquid can be poured and keeps a level, horizontal surface |
| gas | A gas fills all available space and is not liquid or solid. |
| state | Whether something is a solid, liquid or gas. |
| melt | Change from solid to liquid. |
| freeze | Change from liquid to solid. |
| boil | Change from liquid to gas at a certain temperature. Bubbles can be seen in the liquid. |
| evaporate | Change from liquid to gas but at a lower temperature and only at the surface. |
| condense | Change from gas to liquid. |
| water cycle | The circulation of the Earth's water. |

Objectives

We are learning to:

- 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 link the rate of evaporation with temperature

Working Scientifically

We can be scientists by:

- Testing the melting points of different solids

Which melts at a lower temperature?
Do clothes dry quicker on a hot or cold day?

We will use these enquiry skills:

- Observing
- Classifying and comparing
- Measuring

The Water Cycle

