Linked learning theme: Wonderful World

Summer term, Year 4

Science – States of matter

Prior knowledge

In KS1, children have described different materials and grouped them according to their properties.

Core knowledge

- Materials can be classified as solids, liquids and gases.
- Solids keep their own shape and that shape can be changed by applying a force.
- Liquids can be poured and take the shape of the container they are in.
- Gases spread out to fill all available space.
- Solids consisting of very small pieces can behave like liquids.
- The same material can exist in different states.
- Materials change state when they are heated or cooled.
- Melting happens when a solid is heated and is a change from solid to liquid.
- Freezing or solidifying happens when a liquid is cooled and is a change from liquid to solid.
- Different materials have different melting points which is the temperature at which they melt/solidify.
- Evaporation happens when a liquid is heated and is a change from liquid to gas.
- Condensation happens when a gas is cooled and is a change from gas to liquid.
- The rate of evaporation varies with temperature.
- Evaporation and condensation are part of the water cycle.

Key skills

- Ask relevant questions and use scientific enquiry to answer them.
- Make systematic and careful observations.
- Set up simple practical enquiries.
- Gather, record, classify and present information.
- Record findings using scientific language.
- Relate changes to scientific ideas and processes.
- Use straightforward scientific evidence to answer questions and support findings.

Vocabulary

solid	melting	evaporation	heating
liquid	freezing	condensation	cooling
gas	solidifying	water cycle	

Learning outcomes

- I can compare and group materials together, according to whether they are solids, liquids or gases.
- I can 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).

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