

What should I already know?

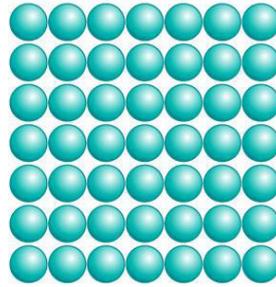
- Materials can be hard, soft, strong, weak, absorbent, heavy, light, solid, runny, smooth and rough.
- Why some materials are used for certain purposes because of their **properties**.
- The **water cycle** and the **processes** of **evaporation, condensation** and **precipitation**.

Let's investigate!

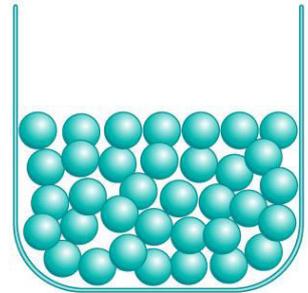
Vocabulary

Absorb	Take in or soak up.
Boiling point	The temperature at which a liquid boils and turns into vapour.
Condensation	Small drops of water which form when water vapour or steam touches a cold surface.
Cooling	Lowering the temperature of something.
Evaporation	To turn from a liquid into a gas .
Freezing	When a liquid becomes a solid due to low temperatures. E.g. water to ice.
Freezing point	The temperature at which a substance freezes . The freezing point of water is 0°C.
Gas	A form of matter that is neither liquid or solid . A gas rapidly spreads out when it is warmed and contracts when it is cooled.
Heating	Raising the temperature of something.
Liquid	In a form that flows easily and is neither a solid or gas.
Matter	Anything that takes up space.
Melting	To change from solid to liquid state through heating or pressure.
Melting point	The melting point of a particular substance is the temperature at which it melts .
Particles	A tiny amount.
Precipitation	Rain, snow, sleet etc, formed by condensation of water vapour in the atmosphere.
Process	A series of actions used to produce something or reach a goal.
Properties	The ways in which an object behaves.
Solid	Having a firm shape or form that can be measured in length, width and height; not like a liquid or a gas .
Sublimation	When a solid turns into a gas without passing through the liquid state.
Surface runoff	The flow of water on the earth's surface, for example rivers and streams.
Temperature	A measure of how hot or cold something is.
Transpiration	When water on the Earth's surface moves to the air in a process called transpiration in which water turns into water vapour (gas) on the surface of leaves on plants
Vibrations	When something vibrates , it shakes with repeated small, quick movements.
Water cycle	The process by which water on the earth evaporates , then condenses in the atmosphere, and then returns to earth in the form of precipitation .
Water vapour	Water in the gaseous state, especially when due to evaporation at a temperature below the boiling point.

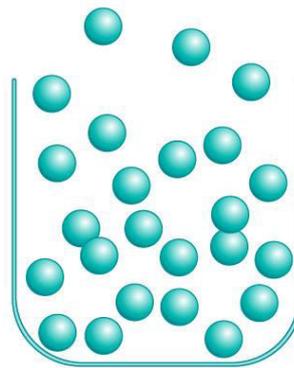
- Explore the effect of **temperature** on substances such as chocolate, butter and cream. Compare **melting points**.
- Observe and record **evaporation** over a period of time, for example, a puddle in your garden, or washing on the line.
- Investigate the effect of **temperature** on drying objects, such as your washing.
- Observe **evaporation** and **condensation** in action by using bowls of water and a glass or mirror.



Solid



Liquid



Gas

What I will learn in this topic?

Compare and group materials together, according to whether they are solids, liquids gases.

Things are composed of a material in one of three states: solid, liquid or gas. Everything is made of particles and they are organised differently depending in their state of matter. There are bonds between the particles in a solid.

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

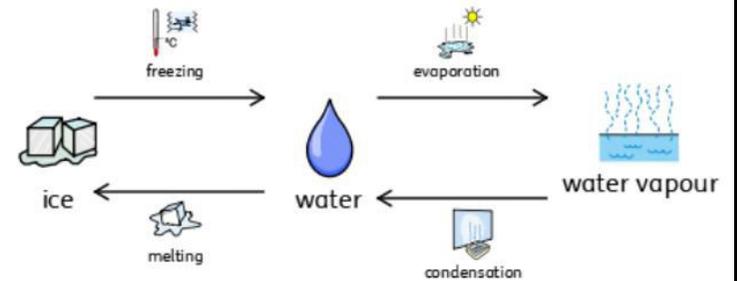
Materials can change their state of matter. As temperature increases, the bonds between the particles are somewhat overcome as the particles absorb energy and solids can change into liquids; with a further increase in temperature, the particles become even more energetic and the bonds are overcome entirely so the liquid changes into a gas.

Melting = when a solid turns into a liquid (reverse process is freezing).

Freezing = when a liquid turns into a solid. (Reverse process is melting).

Evaporation = when a liquid becomes a gas. (Reverse process is condensation).

Condensation = when a gas becomes a liquid. (Reverse process is evaporation).



The melting point of water (ice as a solid) is 0°C, and the boiling point of water is 100°C.

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

Water flows around the world in a continuous process called the water cycle.

Water from the earth's surface moves into the air through evaporation. It also does this through a process called transpiration – water from the surface of plants leaves moves into the air.

Water vapour in the air creates clouds, and when this condenses, it falls to the earth as rain, snow, hail or sleet (precipitation).

Water that flows across the land in rivers and streams. This is called surface runoff.

Water that flows under ground is known as ground water.

