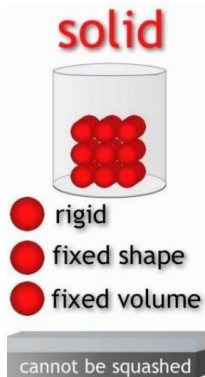

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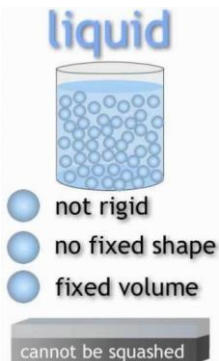
Knowledge Organiser Science: States of Matter

Solids, Liquids and Gases

Solids stay in one place and can be held. They do not flow like liquid (some solids like sand or salt can be poured). Solids always take up the same amount of space. They do not spread out like gases.



Liquids can flow or be poured easily. They are not easy to hold. Liquids can their shape depending on the container they are in.



Changing State

Some materials change state when they are heated or cooled and some of these changes can be reversed.



Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like in a kettle, but it can also happen slowly, like a puddle evaporating in the warm air

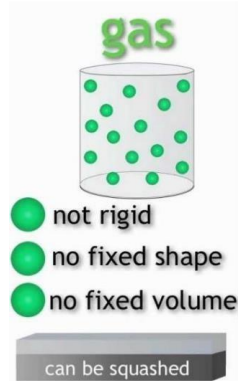
Everyday examples of evaporation: washing drying, water boiling, puddles evaporating on a hot day.



Key Vocab

Matter	Any solid, liquid or gas that exists in the universe
Solid	Substance that stays the same shape whether in a container or not
Liquid	Substance that can flow and take on the shape of a container
Gas	Substance that has no fixed shape, like oxygen
Temperature	How hot or cold something is, normally measured in degrees Celsius (°C)
Evaporation	The process of liquid heating and changing into a gas
Condensation	The process of a gas cooling and changing into a liquid
Water cycle	The process of water being recycled over and over again
Particle	An extremely small unit of matter

Gases are often invisible. Gases do keep their shape. They spread out and change their shape and volume to fill up whatever container they are in.



Solid (at room temperature)	Liquid (at room temperature)	Gas (at room temperature)
Wood Iron Copper Plastic	water milk blood oil	oxygen carbon dioxide nitrogen steam

The Water Cycle

Condensation and **evaporation** both happen within the **water cycle**

A) Water from lakes, puddles, rivers and seas is **evaporated** by the sun's heat, turning it into water vapour.

B) This water vapour rises, then cools down to form water droplets in clouds (**condensation**).

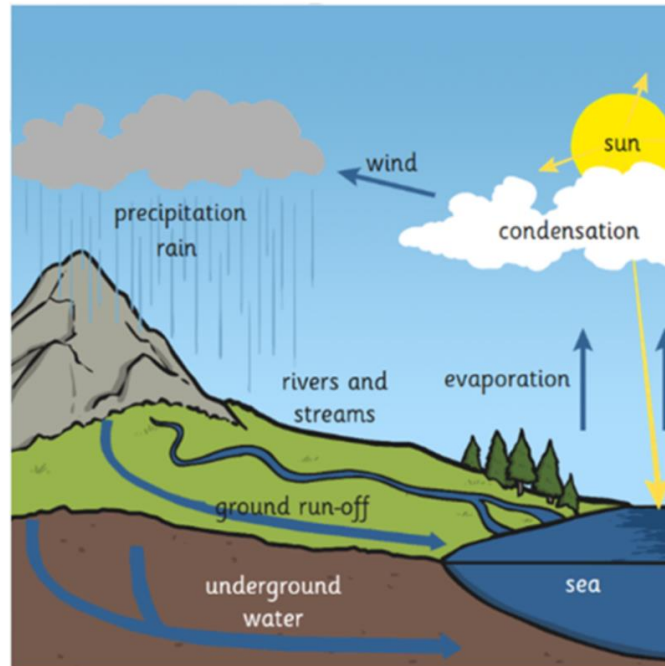
C) When the droplets get too heavy, they fall back to the earth as rain, sleet, hail or snow (**precipitation**).

D) Water returns to the sea. Rain water runs over the land and **collects** in lakes or rivers, which take it back to the sea. The cycle starts all over again.

Condensation is when **water vapour** is cooled down and turns into water. The water vapour in the air cools when it touches the cold surface. Everyday examples of **condensation**: water droplets forming inside windows or on a cold glass.



Water has a boiling point of 100 degrees however it both freezes and melts at 0 degrees.



Water vapour

This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour

Precipitation

Rain, snow, sleet or hail. Anything that falls from the clouds.

Collection

Water that falls on lakes, rivers, oceans or on the ground

Freezing

The process of a liquid cooling and changing into a solid.

Melting

The process of a solid heating and changing into a liquid

Boiling

Water boils at exactly 100 degrees Celsius (100°C)

Celsius (°C)

The measurement of temperature.

