



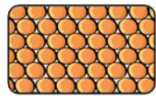
Solids

Characteristics

- solids stay in one place and **you can hold them** in your hand.
- solids **keep their shape**. They **do not flow** like liquids.
- solids always take up the **same amount of space**.
- they **do not spread** out like gases.
- solids **can be cut or shaped**.



Heating some solids can turn them into liquids. Can you think of an example?



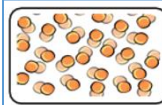
In a solid, the particles are closely packed together.

States of Matter

Liquids

Characteristics

- liquids **can flow or be poured easily**. They are **not easy to hold**.
- liquids **change their shape** depending on the container they are in.
- even when liquids change their shape, **they always take up the same amount of space**. Their volume stays the same.



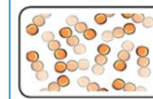
In a liquid the particles are close together but free to move about.



Gases

Characteristics

- gases are **often invisible**.
- gases **do not keep their shape** or always take up the same amount of space. They spread out and change their shape and volume to fill up whatever container they are in.
- gases can be **squashed**.

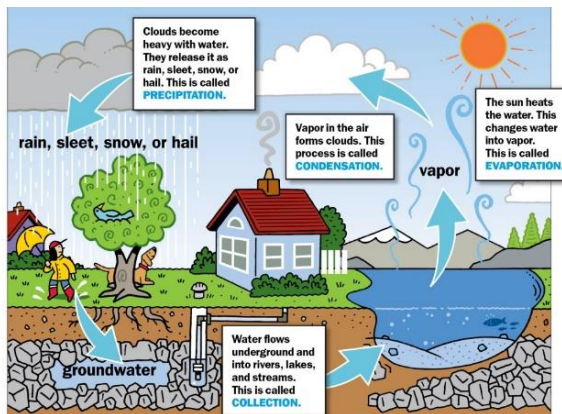


In a gas, the particles are widely separated and can move freely.

Prior Learning

- identify and compare and group together different kinds of rocks on the basis of their appearance and simple physical properties
- describe in simple terms how fossils are formed when things that have lived are trapped within rock
- recognise that soils are made from rocks and organic matter

The Water Cycle



The water cycle is the continuous journey water takes from the sea, to the sky, to the land and back to the sea.

Year 4 Learning

- 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

Key Vocabulary

solid	Firm and stable in shape; not liquid or fluid.
liquid	A substance that flows freely but is of constant volume, having a consistency like that of water or oil.
gas	A substance or matter in a state in which it will expand freely to fill the whole of a container, having no fixed shape (unlike a solid) and no fixed volume (unlike a liquid).
state	The three most familiar forms, or states, of matter are solid, liquid, and gas
particles	A particle is an extremely tiny piece of matter, and scientists believe that everything in the universe is made up of particles.
temperature	Intensity of heat present in a substance or object
boil	The process by which a liquid turns into a gas when it is heated to its boiling point.
freeze	A change of state from liquid to solid.
substance	A substance is simply a pure form of matter.
condensation	Condensation is the process by which water vapor in the air is changed into liquid water.
evaporation	Evaporation is the process that changes liquid water to gaseous water (water vapor).
precipitation	Precipitation is water released from clouds in the form of rain, freezing rain, sleet, snow, or hail.
water cycle	The water cycle shows the continuous movement of water within the Earth and atmosphere.
Celsius	The Celsius scale, also known as the centigrade scale, is a temperature scale based on 0° for the freezing point of water and 100° for the boiling point of water.