

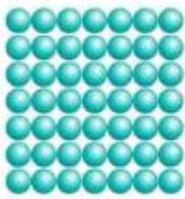
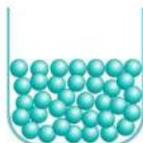
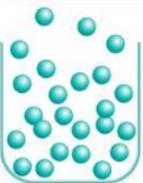


What I should know by the end of this unit:

- Materials can be grouped and compared according to whether they are a solid, liquid or a gas
- Some materials change state when they are heated or cooled. Temperature is measured in degrees Celsius (°C)
- Evaporation and condensing are main parts of the water cycle. The rate of evaporation changes according to the temperature

Key knowledge

Solids, liquids and gases

<p>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 gasses.</p>	
<p>Liquids can flow or be poured easily. They are not easy to hold. Liquids can change their shape depending on the container they are in.</p>	
<p>Gases are often invisible. Gases do not keep their shape. They spread out and change their shape and volume to fill up whatever container they are in.</p>	

Changing state

<p>Some materials change state when they are heated or cooled and some of these changes can be reversed</p>	
<p>Evaporation occurs when water turns into water vapour. This happens very quickly when the water is hot, like 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</p>	
<p>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.</p>	

Key Vocabulary

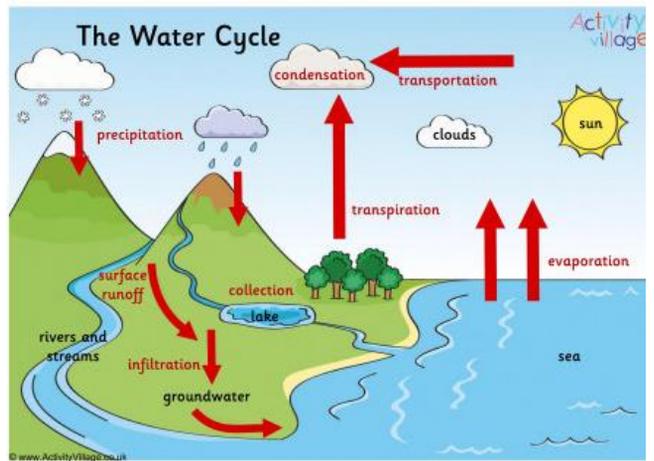
Spelling	definition
condensation	The process of a gas cooling and changing into a liquid
evaporation	The process of liquid heating and changing into a gas
gas	Substance that has no fixed shape, like oxygen
liquid	Substance that can flow and take on the shape of a container
matter	Any solid, liquid or gas that exists in the universe
particle	An extremely small unit of matter
solid	Substance that stays the same shape whether in a container or not
temperature	How hot or cold something is, normally measured in degrees Celsius (°C)
water cycle	The process of water being recycled over and over again.
water vapour	This is water that takes the form of a gas. When water is boiled, it evaporates into a water vapour.



The water cycle

Condensation and evaporation both happen within the water cycle.

- The water evaporates into the air. The sun heats up water on the land and in rivers, lakes and seas and turns into **water vapour**. The water vapour rises into the air.
- Water vapour condenses into clouds. Water in the air cools down and changes back into tiny droplets of liquid water, forming clouds.
- Water falls as rain. The clouds get heavy and water falls back to the earth in the form of rain or snow.
- 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.



Temperature

Boiling	Water boils at exactly 100 degrees Celsius (100°C)
Melting	Different solids melt at different temperatures. Ice melts at 0°C Chocolate melts at about 30°C
Freezing	Water freezes at 0°C
Evaporation and condensation	Water can evaporate and condense at any temperature, but the warmer it is the faster the evaporation takes place.



Meting chocolate



melting ice



melting ice cream



Topic: States of Matter

Year 4

Strand: Chemistry

The particles in a solid:	Start of unit	End of unit
are closely packed together and vibrate		
move freely over each other within a container in which they are held		
can be poured		
are very spread out and can escape an open container		

The particles in a liquid (tick two)	Start of unit	End of unit
are closely packed together and vibrate		
move freely over each other within a container in which they are held		
can be poured		
are very spread out and can escape an open container		

The particles in a gas	Start of unit	End of unit
are closely packed together and vibrate		
move freely over each other within a container in which they are held		
can be poured		
are very spread out and can escape an open container		

Name the process that describes the change from water to ice	Start of unit	End of unit

Label solid, liquid or gas to label each part of the diagram	Start of unit	End of unit
		

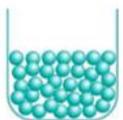
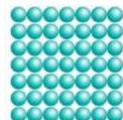


Topic: States of Matter

Year 4

Strand: Chemistry

Match these changes to the scientific name for the process	Start of unit	End of unit
Ice turns to water	condensation	
Water turns to water vapour	melting	
Water vapour turns to water	evaporation	

Match each state to the correct picture	Start of unit	End of unit
solid		
liquid		
gas		

What is the freezing point of water?	Start of unit	End of unit

Explain why puddles get smaller after it has rained	Start of unit	End of unit