

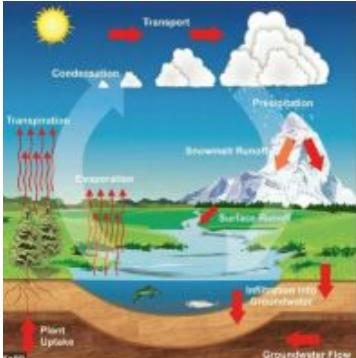
Goonhavern Primary School- Science

TOPIC: States of Matter

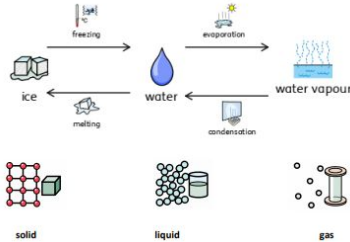
YEAR: 4

STRAND: Physics

What should I know already?	What will I know by the end of the unit?	
<p>Why certain materials are used for certain purposes because of their properties.</p> <p>The water cycle, and the processes of evaporation, condensation and precipitation.</p>	<p>What is a particle?</p>	<ul style="list-style-type: none"> ● Particles are what materials are made from. ● They are so small that we cannot see them with our eyes. ● The properties of a substance depend on what its particles are like, how they move and how they are arranged ● Particles behave differently in solids, liquids and gases.
	<p>What is a solid?</p>	<ul style="list-style-type: none"> ● In a solid state, the material holds its shape. ● Solids have vibrating particles which are closely packed in and form a regular pattern. ● This explains the fixed shape of a solid and why it can't be poured. ● Solids always take up the same amount of space.
	<p>What is a liquid?</p>	<ul style="list-style-type: none"> ● In the liquid state, the material holds the shape of the container it is in. ● This means that liquids can change shape, depending on the container. ● Liquids have particles which are close together but random. ● Liquid particles can move over each other. Liquids can be poured.
	<p>What is a gas?</p>	<ul style="list-style-type: none"> ● In the gas state, particles can escape from open containers. ● Gases have particles which are spread out and move in all directions.
	<p>What happens to the particles in water when it is heated and cooled?</p>	<ul style="list-style-type: none"> ● When water (in its liquid form) is heated, the particles start to move faster and faster until they have enough energy to move about more freely. The water has evaporated into a water vapour. ● When water is cooled, the particles start to slow down until a solid structure (ice) is formed. The water has frozen. ● The temperature at which water turns to ice is called the freezing point. This happens at 0o C.

	<p>What is the water cycle? (See Geography - water cycle)</p>	
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Vocabulary	
Condensation	Small drops of water which form when water vapour or steam touches a cold surface, such as a window.
Cooling	Lowering the temperature of something.
Evaporation	To turn from liquid into gas; pass away in the form of vapour.
Freezing	If a liquid or a substance containing a liquid freezes, it becomes solid because of low temperatures.
Freezing point	The freezing point of a particular substance is the temperature at which it freezes. The freezing point of water is 0°C.
Gas	A form of matter that is neither liquid nor 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 gas or solid.
Melting	To change from a solid to a liquid through heat or pressure.
Melting point	The temperature of which something melts.
Particles	A particle is something that is so tiny we can't see it. Scientists are continuously investigating matter and the particles from which matter is made.
Precipitation	Rain, snow, sleet etc formed from condensation of water vapour in the atmosphere.
Properties	The way an object behaves.
Solid	Having a firm form or shape.
Temperature	A measure of how hot or cold something is.
Vibrations	Shaking with repeated small, quick movements.
Water vapour	Water in a gaseous state.

Image/diagram that helps me to articulate my knowledge/understanding	Investigate!
 <p>The diagram illustrates the water cycle and states of matter. It shows ice, water, and water vapour. Processes include freezing, melting, evaporation, and condensation. Below the cycle are particle diagrams for solid, liquid, and gas states.</p>	<ul style="list-style-type: none"> • Group materials according to their states. • Explain the particle structure of solids, liquids and gases. • Explore the effect of temperature on substances such as chocolate, butter, cream. Compare their melting points and place them in a table. • Research the temperature at which materials change state, for example, when iron melts or when oxygen condenses into a liquid. • Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting. • Analyse and interpret different forms of data (tables, graphs) to show the effects of temperature on states of matter. • Present what you know about the water cycle using a variety of skills using appropriate vocabulary (The Water Cycle Knowledge Organiser). • Observe evaporation and condensation in action by using bowls of water and mirrors /glass (The Water Cycle Knowledge Organiser).

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TOPIC:	YEAR:	STRAND:

Q1	Start of Unit	End of Unit	Q3	Start of Unit	End of Unit
Q2	Start of Unit	End of Unit	Q4	Start of Unit	End of Unit

