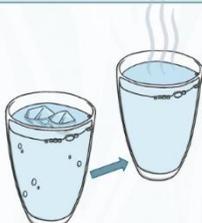


## LKS2 Science – Y4 States of Matter

<p>Session 1</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases</p>	<p>Can they compare and group materials together, according to whether they are solids, liquids or gases?</p>	<p><b>Solids</b> Solids are one of the three states of matter and, unlike liquids or gases, they have a definite shape that is not easy to change. Different solids have particular properties such as stretch, STRENGTH, or hardness.</p> <p><b>Liquids</b> A liquid takes the shape of the container it is in. It is a fluid material and is able to flow.</p> <p><b>Gases</b> Gas is a state of matter that has no fixed shape and no fixed volume. Gases have lower density than other states of matter, such as solids and liquids.</p>
<p>Session 2</p> <p>To answer questions about gas using evidence from scientific enquiries and to record findings using drawings</p>	<p>Can they record data using diagrams, labels, classification keys, tables, scatter graphs, bar graphs and line graphs?</p>	<p>Gases are found inside fizzy drinks. Carbon Dioxide (Co2) is the gas found inside them which causes them to fizz!</p>
<p>Session 3</p> <p>To understand, through practical tasks, that materials change state when they are heated or cooled and to describe this process using scientific language</p>	<p>Can they explain what happens to materials when they are heated or cooled?</p> <p>Can they measure or research the temperature at which different materials change state in degrees Celsius?</p>	<p>When you apply heat, the temperature will increase. At certain points materials will melt or evaporate. Water turns to steam at 100°C and many solids turn to liquid at this temperate as well. Many liquids turn to solids at 0°C for example water turns to ice at this temperature</p>
<p>Session 4</p> <p>To ask a question about evaporation and set up a practical enquiry that will provide the scientific evidence to answer it</p>	<p>Can they use a range scientific equipment to take accurate measurements or readings?</p>	<div style="border: 1px solid black; padding: 5px;"> <p>Evaporation is the process of a liquid changing into a gas.</p> <p>When clothes dry on the washing line, it is evaporation that causes the liquid on the wet clothes to turn into gas, leaving the clothes dry.</p> <p>But how is the water evaporated from the wet clothes? Around the room are some children's ideas about what makes this happen. Have a look at each statement, think about whether you agree or disagree with it, and write your ideas around it.</p>  </div>
<p>Session 5</p> <p>Identify the part played by evaporation and associate the rate of evaporation with temperature.</p>	<p>Can they describe how materials change state at different temperatures?</p>	
<p>Session 6</p> <p>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Can they explain everyday phenomena including the water cycle?</p>	<p>The <b>water cycle</b> describes the continuous movement of water on, above and below the surface of the Earth. The water moves from one place to another, such as from river to ocean, or from the ocean to the atmosphere, by the physical processes of evaporation, condensation, precipitation, infiltration, surface runoff, and subsurface flow. In doing so, the water goes through different forms: liquid, solid (ice) and vapor.</p>

### Key vocabulary

Properties	An attribute, quality, or characteristic of something.
condensation	When a gas changes back into a liquid through cooling
Celsius (°C)	A unit of measure to measure the temperature (how hot or cold)
evaporation	When a liquid changes to a gas for example when water changes to steam, this process is called evaporation
change of state	When a solid changes to a liquid or vice versa. When a liquid changes to a gas or vice versa
states of matter	Everything in the world is either in the state of a solid, liquid or gas.

### Progression strands

Can they compare and group materials together, according to whether they are solids, liquids or gases?
Can they explain what happens to materials when they are heated or cooled?
Can they measure or research the temperature at which different materials change state in degrees Celsius?
Can they describe how materials change state at different temperatures?
Can they use measurements to explain changes to the state of water?
Can they explain everyday phenomena including the water cycle?
Can they record data using diagrams, labels, classification keys, tables, scatter graphs, bar graphs and line graphs?
Can they evaluate and communicate their methods and findings?
Can they use a range scientific equipment to take accurate measurements or readings?