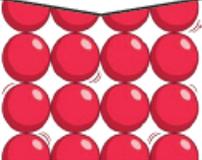
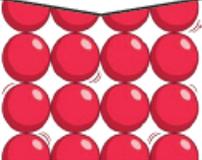
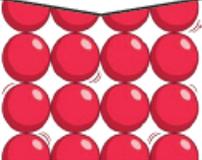
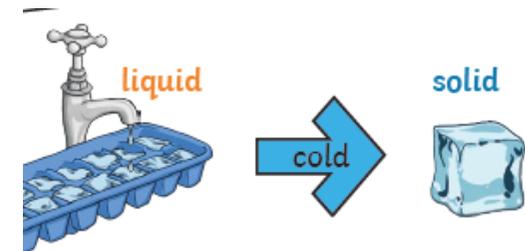


## Crofton Junior School – Curriculum Knowledge Organiser

<b>Unit of Work</b>	Science – Chemistry – Year 4										
<b>Key Strand</b>	Understand materials – States of Matter										
<b>Overview of the Unit of Work</b>	This concept involves becoming familiar with range of materials, their properties, uses and how they may be altered or changed.										
<b>Prior Learning &amp; Vocabulary</b>	<p>Year 1 Materials: objects, fabrics, materials, wood, plastic, glass, metal, water, rock, brick, paper, elastic, foil, card, rubber wool, clay, hard, soft. Properties: stretchy, stiff, bendy, waterproof, absorbent, breaks/tears, rough, smooth, shiny, dull</p> <p>Year 2 Materials: transparent, opaque, reflective, translucent, non-reflective, suitable/unsuitable, rigid, flexible, strong/weak, shape, changed, push, pull, twist, squash, bend, pinch, roll, squeeze</p> <p>Year 3 Materials: rock, stone, pebble, boulder, soil (sandy/clay/chalky), fossils, grains, crystals, hard/soft, texture, absorb water, permeable, impermeable, marble, chalk, granite, sandstone, slate, peat, igneous, sedimentary, metamorphic, fossilisation, sediment</p>										
<b>Sticky Knowledge</b>	<p>There are three states of matter.</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 33%;"><b>Solid</b></td> <td style="width: 33%;"><b>Liquid</b></td> <td style="width: 33%;"><b>Gas</b></td> </tr> <tr> <td></td> <td></td> <td></td> </tr> <tr> <td>Particles in a <b>solid</b> are close together and cannot move. They can only vibrate.</td> <td>Particles in a <b>liquid</b> are close together but can move around each other easily.</td> <td>Particles in a <b>gas</b> are spread out and can move around very quickly in all directions.</td> </tr> </table>	<b>Solid</b>	<b>Liquid</b>	<b>Gas</b>				Particles in a <b>solid</b> are close together and cannot move. They can only vibrate.	Particles in a <b>liquid</b> are close together but can move around each other easily.	Particles in a <b>gas</b> are spread out and can move around very quickly in all directions.	<p>When water and other liquids reach a certain temperature, they change state into a solid or gas. The temperatures that these changes happen at are called the boiling, melting or freezing point.</p>
<b>Solid</b>	<b>Liquid</b>	<b>Gas</b>									
											
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	<div style="display: flex; align-items: center; justify-content: center;"> <div style="text-align: center; margin-right: 20px;"> <p><b>solid</b></p>  </div> <div style="text-align: center; margin-right: 20px;"> <p>heat →</p> </div> <div style="text-align: center;"> <p><b>liquid</b></p>  </div> </div>										

If a solid is heated to its melting point, it melts and changes to a liquid. This is because the particles start to move faster and faster until they are able to move over and around each other.

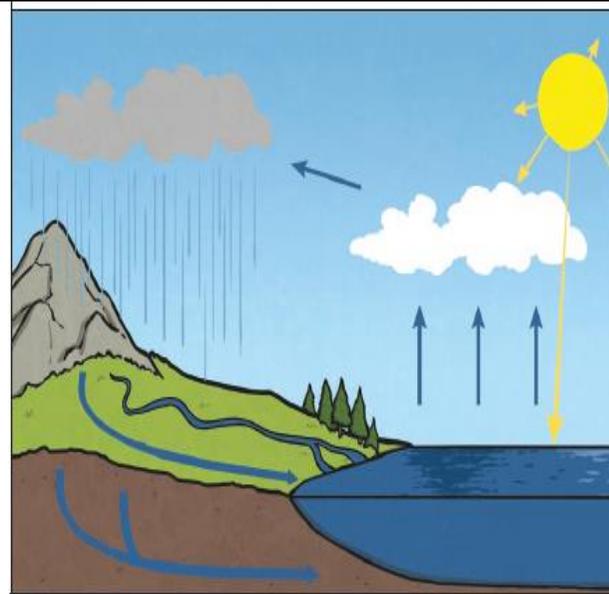
When freezing occurs, the particles in the liquid begin to slow down as they get colder and colder. They can then only move gently on the spot, giving them a solid structure.



Condensation and evaporation happen as part of the water cycle.

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

Condensation is when the water vapour is cooled down and turns into water. You can see this when droplets of water form on a window. The water vapour in the air cools when it touches cold surface.



1. Water from lakes, puddles, rivers and seas is evaporated by the sun's heat, turning it into water vapour.
2. This water vapour rises, then cools down to form water droplets in clouds (condensation).
3. When droplets become too heavy they fall back to the earth as rain, sleet, hail or snow (precipitation).

**New Vocabulary**

states of matter, solid, liquid, gas, air, oxygen, powder, grain/granular, change state, ice/water/steam, water vapour, heated, cooled, temperature, degrees Celsius °C, melt, freeze, solidify, melting point, molten, boil/boiling point, evaporate/evaporation, condense/condensation, water cycle, precipitation, transpiration

**Post Learning**

Year 5: Materials  
KS3: The nature of matter