

# Year 4 Spring Term

## Materials / states of matter

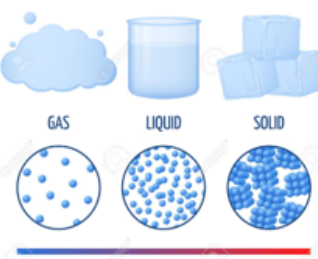
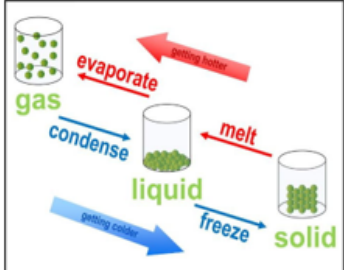
### Prior knowledge learned in year 1

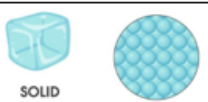
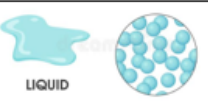

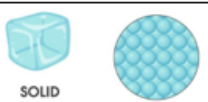
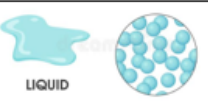

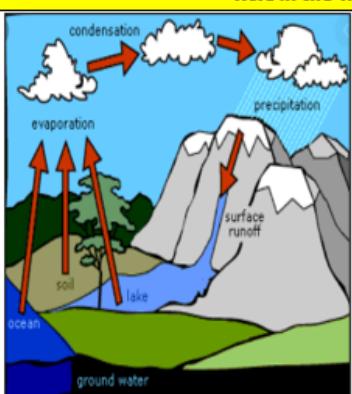
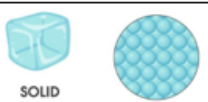
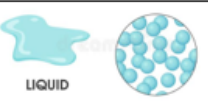

distinguish between an object and the material from which it is made, identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock, describe the simple physical properties of a variety of everyday materials, compare and group together a variety of everyday materials on the basis of their simple physical properties **year 2** - identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses, find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching

### National Curriculum for year 4

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

## STATES OF MATTER KNOWLEDGE ORGANISER

Overview	Changing States of Matter
 <ul style="list-style-type: none"> <li>-Matter makes up our planet and the whole Universe.</li> <li>-There are three main states of matter – solids, liquids and gases.</li> <li>-Matter can change state, depending on its temperature.</li> <li>-Several processes describe the processes of changing states, e.g. melting, evaporation, freezing and condensation.</li> <li>-The water cycle depends upon some of these processes.</li> </ul>	 <p>States of matter can change, depending upon the temperature of the matter.</p> <ul style="list-style-type: none"> <li>-<b>Melting</b> is the process of changing a solid into a liquid.</li> <li>-<b>Evaporation</b> is the process of changing a liquid into a gas.</li> <li>-<b>Condensation</b> is the process of changing a gas into a liquid.</li> <li>-<b>Freezing</b> is the process of turning a liquid into a solid.</li> </ul>

Solids, Liquids and Gases	Role in the Water Cycle						
<p>All matter exists in three states: solids, liquids and gases.</p> <table border="1"> <tr> <td> <p><b>SOLIDS</b></p> <ul style="list-style-type: none"> <li>-Solids hold their shape</li> <li>-Solids are rigid</li> <li>-Solids have a fixed volume</li> </ul> <p>Examples include ice cubes, rock, glass and most metals.</p> </td> <td>  </td> </tr> <tr> <td> <p><b>LIQUIDS</b></p> <ul style="list-style-type: none"> <li>-Liquids do not hold their shape</li> <li>-They are not rigid</li> <li>-However, they have a fixed volume.</li> </ul> <p>Examples include water, oil, blood and milk</p> </td> <td>  </td> </tr> <tr> <td> <p><b>GASES</b></p> <ul style="list-style-type: none"> <li>-Gases do not hold their shape</li> <li>-They are not rigid</li> <li>-They do not have a fixed volume.</li> </ul> <p>Examples include oxygen, carbon dioxide and helium.</p> </td> <td>  </td> </tr> </table>	<p><b>SOLIDS</b></p> <ul style="list-style-type: none"> <li>-Solids hold their shape</li> <li>-Solids are rigid</li> <li>-Solids have a fixed volume</li> </ul> <p>Examples include ice cubes, rock, glass and most metals.</p>		<p><b>LIQUIDS</b></p> <ul style="list-style-type: none"> <li>-Liquids do not hold their shape</li> <li>-They are not rigid</li> <li>-However, they have a fixed volume.</li> </ul> <p>Examples include water, oil, blood and milk</p>		<p><b>GASES</b></p> <ul style="list-style-type: none"> <li>-Gases do not hold their shape</li> <li>-They are not rigid</li> <li>-They do not have a fixed volume.</li> </ul> <p>Examples include oxygen, carbon dioxide and helium.</p>		 <p>Changing states of matter play an important part in the water cycle:</p> <p><b>EVAPORATION</b></p> <p>Energy from the sun heats up the surface of the Earth. This causes the temperature in rivers, lakes and oceans to rise, and evaporate into the air.</p> <p><b>CONDENSATION</b></p> <p>As the water vapour rises, it cools in the higher air and turns back into liquid – condensation. This creates clouds.</p> <p><b>PRECIPITATION</b></p> <p>When too much water has condensed, the clouds become too big for air to hold them. Precipitation occurs.</p>
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### Key vocabulary

Solid, liquid, gas, evaporation, condensation, particles,

### Suggested texts

Foxton – states of matter – solids, liquids

Solids	Liquids	Gases
Wood	Ice Cube	Gas
	Coffee	
	Water	
	Shower Gel	
	Carbon Dioxide	
	Air	
	Oxygen	

### Scientists

Joseph Priestly, Lord Kelvin - Absolute zero (temperature), Anders Celsius -Temperature Scale, Daniel Fahrenheit-Temperature Scale / Invention of the

condensation in the water cycle and associate the rate of evaporation with temperature.

What is a solid /  
liquid / gas?

What happens  
to... (water /  
chocolate)

What is  
evaporation/

What is a water  
cycle and how  
does it take