



## Knowledge and Concepts Map for Science

<b>Year D Autumn</b>	<b>States of Matter (Yr 4)</b>  	<b>Properties and Changes of Materials (Yr 5)</b>  
<b>Key Concepts</b>	States of matter, melting , freezing, evaporation, condensing, water cycle	Melting, freezing, evaporating, condensing, dissolving
<b>Key Vocabulary</b>	Solids, liquids, gases, water vapour, melt, freeze, evaporate, condense, precipitation	Materials, solids, liquids, gases, melting, freezing, evaporating, condensing, insulator, transparency, dissolving
<b>Sticky Knowledge</b>	<ul style="list-style-type: none"> <li>● Particles in a solid are close together and cannot move</li> <li>● Particles in a liquid are close together, but can move around each other easily</li> <li>● Particles in a gas are spread out and can move around quickly</li> <li>● When water and other liquids reach a certain temperature they change state</li> <li>● Evaporation occurs when water turns into water vapour</li> <li>● Condensation occurs when water vapour is cooled down</li> </ul>	<ul style="list-style-type: none"> <li>● Different materials are used for particular jobs based on their properties: electrical conductivity, flexibility, hardness, insulators, magnetism, solubility, thermal conductivity, transparency.</li> <li>● Reversible changes, such as mixing and dissolving solids and liquids together, can be reversed by: sieving, filtering, evaporating</li> <li>● Irreversible changes often result in a new product being made from the old materials EG burning wood produces ash</li> <li>● Melting is when a solid changes to a liquid</li> <li>● Freezing is when a liquid turns into a solid</li> <li>● Evaporation is when a liquid turns into a gas</li> <li>● Condensing is when a gas turns into a liquid</li> <li>● Materials that will dissolve are known as soluble.</li> <li>● Materials that won't dissolve are known as insoluble</li> </ul>





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	<p>diagrams, keys, bar charts and tables.</p> <p><b>Drawing Conclusions, Noticing Patterns and Presenting Findings</b></p> <p>draw simple conclusions from their results; make predictions; suggest improvements to investigations; raise further questions which could be investigated; first talk about, and then go on to write about, what they have found out; report and present their results and conclusions to others in written and oral forms with increasing confidence</p> <p><b>Using Scientific Evidence and Secondary Sources of Information</b></p> <p>make links between their own science results and other scientific evidence; use straightforward scientific evidence to answer questions or support their findings; identify similarities, differences, patterns and changes relating to simple scientific ideas and processes;</p>	<p><b>Drawing Conclusions, Noticing Patterns and Presenting Findings</b></p> <p>notice patterns; draw conclusions based in their data and observations; use their scientific knowledge and understanding to explain their findings; read, spell and pronounce scientific vocabulary correctly; look for different causal relationships in their data; independently report and present their conclusions to others in oral and written forms.</p> <p><b>Using Scientific Evidence and Secondary Sources of Information</b></p> <p>use primary and secondary sources evidence to justify ideas use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas;</p>





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		<b>Information</b>



<b>Year D Summer</b>	<b>Animals including Humans (Yr 3)</b> 	<b>Evolution and Inheritance (Yr 6)</b> 
<b>Key Concepts</b>	Healthy eating food groups, support and movement	Adaption, evolution, natural selection, inheritance
<b>Key Vocabulary</b>	Healthy, nutrients, energy, saturated fats, unsaturated fats, vertebrate, muscles, tendons, joints	Offspring, inheritance, variations, characteristics, adaption, habitat, environment, evolution, natural selection, traits
<b>Sticky Knowledge</b>	<ul style="list-style-type: none"> <li>● Living things need food to grow and to be strong and healthy</li> <li>● Plants can make their own food, but animals cannot</li> <li>● To stay healthy, humans need to exercise, eat a healthy diet and be hygienic.</li> <li>● Animals, including humans, need food, water and air to stay alive.</li> <li>● Skeletons do three important jobs: - protect organs inside the body; - allow movement; - support the body and stop it from falling on the floor</li> <li>● vertebrate have an endoskeleton – a skeleton on the inside of the body that supports and protects it</li> <li>● Invertebrates have an exoskeleton – a skeleton on the outside of the body that supports and protects it (some invertebrates have a hydrostatic skeleton eg Jellyfish)</li> </ul>	<ul style="list-style-type: none"> <li>● Animals and plants produce offspring that are similar but not identical</li> <li>● Offspring often look like their parents because features are passed on</li> <li>● Adaptations can develop as a result of many things such as food and climate</li> <li>● Eye colour is an example of an inherited trait</li> <li>● A polar bear with white fur is an example of an adaptive trait (it's white fur enables it to camouflage in the snow)</li> <li>● Evolution is the gradual process by which living organisms have developed over time.</li> <li>● An example of natural selection is that giraffes have long necks</li> </ul>





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	<p>record findings using scientific language, drawings, labelled diagrams, keys, bar charts and tables.</p> <p><b>Drawing Conclusions, Noticing Patterns and Presenting Findings</b></p> <p>draw simple conclusions from their results; make predictions; suggest improvements to investigations; raise further questions which could be investigated; first talk about, and then go on to write about, what they have found out; report and present their results and conclusions to others in written and oral forms with increasing confidence</p> <p><b>Using Scientific Evidence and Secondary Sources of Information</b></p> <p>use straightforward scientific evidence to answer questions or support their findings; identify similarities, differences, patterns and changes relating to simple scientific ideas and processes;</p>	<p><b>Using Scientific Evidence and Secondary Sources of Information</b></p> <p>use primary and secondary sources evidence to justify ideas; identify evidence that refutes or supports their ideas; recognise where secondary sources will be most useful to research ideas and begin to separate opinion from fact;</p> <p>use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas;</p> <p>talk about how scientific ideas have developed over time.</p>