

Science Curriculum Overview – 2022-2023

Investigation titles in red

	<u>Aut 1</u>	<u>Aut 2</u>	<u>Sp1</u>	<u>Sp2</u>	<u>Sum1</u>	<u>Sum2</u>
<u>R</u>	U+W: W Change Melting Chocolate	U+W:W Patterns Gingerbread men	U+W:W Materials Ice melting			U+W:W Change Making ice-lollies
<u>Yr1</u>	Seasonal change Hot and cold	Animals including humans	Plants Plants: survival	Seasons	Everyday materials Waterproof Jackets	(Seasonal change - revisit)
<u>Yr2</u>	Animals including humans Food Chains		Living things and their habitats Minibeasts		Uses of everyday materials Exploring the use of materials. Floating/sinking	Plants Growing
<u>Yr3</u>	Animals including humans Bones		Forces and magnets Ramps	Light Shadows	Plants Plants	Rocks
<u>Yr4</u>	Living things and their habitats Habitats	Electricity Circuits	States of matter Changing States	Sound	Animals including humans Teeth	
<u>Yr5</u>	Properties and changes of material Lunchbox design	Forces Parachutes	Earth and space Fruit Solar System		Living things and their habitats	Animals including humans Chicks

<u>Yr6</u>	Animals including humans	Animals including humans Examining heart rates	light Spectrum colours	Living things and their habitats Plants	Electricity Circuits	Evolution and inheritance
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### Science Investigations and Wider Learning Links (WL)

Year	Intention	Implementation (Key Question for investigations)	Impact	Next steps
R	<ul style="list-style-type: none"> <li>WL Topic “Ourselves”. Key Knowledge includes: similarities/differences and likes/dislikes. Address children’s desire to explore chocolate</li> <li>WL –Celebrations. Children will have the opportunity to develop communications in making gingerbread men.</li> <li>WL –Enchanted worlds: “Frozen”. Investigate which material will keep Mr. Frosty’s ice hand cold.</li> <li>WL- Summer topic. Children will know how to keep cool and be safe in hot weather.</li> </ul>	<p>Which chocolate button will melt the quickest?</p> <p>Which material is the best to stop the gingerbread men from going soggy?</p> <p>Which material is the best to stop Mr. Frosty’s hand from melting?</p> <p>What happens to the juice when we put it in the freezer?</p>	<p>Children will have an insight into how the planning boards work. They will begin to increase their scientific vocabulary.</p> <p>Know about different materials and the uses.</p> <p>Related this to keeping hands warm in winter by wearing gloves – they stop cold air getting in. Mr. Frosty’s best material stops the warm air getting in.</p> <p>Children will know that liquid will freeze in freezing temperatures and that ice-lollies can cool you down in hot weather. Record findings using simple sentences.</p>	
1	<ul style="list-style-type: none"> <li>WL – Hot and cold. Children will deepen their knowledge of countries and the weather, looking at seasonal changes.</li> <li>wL- Food. Children will explore a variety of food and know how to be healthy.</li> </ul>	<p>How do Polar bears keep warm?</p>	<p>Children will be able to describe conditions of the Artic and be able to relate this knowledge to polar bears keeping warm.</p>	

	<ul style="list-style-type: none"> <li>WL- Plants. Children will explore the environment identifying plants.</li> <li>WL- Victorians. Knowing about Victorian clothing and explore different materials.</li> </ul>	<p>Which spoon holds the most rice?</p> <p>What does a plant need to survive?</p> <p>Which waterproof coat is the best for Mrs' Hayes to stop the rain getting in?</p>	<p>Be aware of the importance of staying healthy. Links to capacity.</p> <p>Children will know how to care for the world and understand why we need plants.</p> <p>Make links that the Victorians didn't have waterproof clothing.</p> <p>Begin to use some sub headings to record their work.</p>	
2	<ul style="list-style-type: none"> <li>WL_ Aldridge. Children will know about local habitats, visit the woods make links with minibeats and food chains.</li> <li>WL – pirates. Children will learn how pirates lived and how they travelled. They will explore materials to make a ship.</li> <li>observe and describe how seeds and bulbs grow into mature plants. find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul>	<p>Which micro habitat do woodlouse prefer and why?</p> <p>Which material is the best to prevent the pirate ship from sinking?</p> <p>What will the plant look like?</p>	<p>Children will be able articulate and be familiar with local habitats and know the cycles in food chains and why food chains are needed.</p> <p>Children will be able to explain and justify why some materials float and some sink.</p> <p>Deepen scientific vocabulary and explain the different steps in plant growth.</p> <p>Use subheadings to record work</p>	
3	<ul style="list-style-type: none"> <li>Children will explore their shadows at different times of the day and observe what happens.</li> <li>Children explore materials, friction and forces.</li> <li>Children will explore the skeletal bones, name them and know the purpose of the skeleton.</li> </ul>	<p>Is your shadow bigger or smaller at noon?</p> <p>Which material is best to prevent you from slipping?</p> <p>Does the tallest child have the longest leg bone?</p>	<p>Children will know that shadows will appear in different places at different times of the day due to the earth orbiting the sun.</p> <p>Children will be able to explain about friction and make links to suitable footwear in different situations.</p> <p>Children will know about the skeleton and growth. They will use scientific vocabulary to articulate findings.</p>	

	<ul style="list-style-type: none"> <li>Children will know parts of a plant and understand that plants draw minerals from the soil and water to grow.</li> </ul>	What conditions are needed for a plant to grow?	<p>Know that different variables affect plant growth. Embed using subheadings into written work and use scientific vocabulary.</p> <p>GD children will generate their own investigation question using the given question as a prompt.</p>	
4	<ul style="list-style-type: none"> <li>Children will identify electrical conductors and insulators and which works best. They will explain how a circuit works and design their own Christmas flashing light circuit.</li> <li>Explore how different states of matter and know how a liquid turns into solids and vice versa.</li> <li>Children will explore the structure of human teeth and name key parts. Look at the effect of different drinks on tooth decay. Know what happens on tooth decay.</li> </ul>	<p>Which electrical component should I use in my circuit? Which materials best conduct electricity? How can I make a complete circuit?</p> <p>What temperature does a solid turn to a liquid at? What temperature does a liquid turn to solid? How does a solid turn into a liquid? When does evaporation occur? Condensation?</p> <p>Which drink is best for your teeth? What affects the rate of tooth decay? What is the importance of enamel?</p>	<p>Know about different conductivity of different materials. Explain how a circuit works using scientific vocabulary.</p> <p>Children will know a solid turn to liquid at its freezing point. Know how and when evaporation and condensation occurs.</p> <p>Children will know the structure of human teeth and label them using scientific vocabulary. They will know that the loss of enamel happens during tooth decay and why this is important.</p> <p>Record observations and conclude which drink is the healthiest for teeth.</p> <p>Children will write investigations using subheadings and incorporate age appropriate scientific vocabulary.</p> <p>GD children will generate their own investigation question using the given question as a prompt</p>	
5	<ul style="list-style-type: none"> <li>Visualise the scale of the planets using fruit.</li> <li>Children will explore gravity and create detailed diagrams showing the theory of gravity. Use a parachute and different size balls to explore gravity.</li> </ul>	<p>Which fruit is the best to replica the planets?</p> <p>Which ball will fall the quickest to the ground?</p>	<p>Wider knowledge of the solar system. Describe the movement of the moon relative to the Earth. Describe the sun, Earth and moon as approximately spherical bodies. Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p>Use scientific vocabulary to explain that unsupported objects fall towards the Earth</p>	

	<ul style="list-style-type: none"> <li>Explore the life cycle of chicks, through monitoring incubated eggs.</li> </ul>	How will chicks survive?	<p>because of the force of gravity acting between the Earth and the falling object</p> <p>Children will produce good quality written work using different genres and scientific vocabulary, explaining the life cycle of chicks</p> <p>GD children will generate their own investigation question using the given question as a prompt.</p>	
6	<ul style="list-style-type: none"> <li>Explore the effect of exercise on the heart rate. Cross reference heart rate in soldiers in the War. – WL topic</li> <li>Explore how light travels to our eyes so that we can see colour.</li> <li>Explore and build circuits using a variety of bulbs and batteries</li> </ul>	<p>What happens to our heart after exercise?</p> <p>How do our eyes see colour?</p> <p>Does the size of the battery affect the bulb brightness?</p>	<p>Produce quality written work, using planning board subheadings and scientific vocabulary, explain the heart rate after exercise.</p> <p>Work will be presented in a variety of ways explain key knowledge. The children will be able to explain links from parts of the eye to how light travels.</p> <p>Embed key knowledge of circuits and explain finding thinking critically.</p> <p>GD children will generate their own investigation question using the given question as a prompt using scientific vocabulary.</p>	