

INTENT**Science Curriculum Year B: Planning, Progress and Long-Term Knowledge Growth**

YEAR 3/4	Substantive scientific content What you are going to teach	Recurring substantive themes, ideas and language (Key Concepts) Why you are going to teach it	Subject rationale: Supporting pupils' wider science curriculum journey How it links through the school	Basic disciplinary training in science
Autumn Term Animals including humans	Biology: Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat. Identify that humans and some other animals have skeletons and muscles for support, protection and movement Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions.	This study of 'Animals including humans' gives the children further understanding of the key concept of life processes . They will develop their skills in scientific method through asking questions and carrying out investigations that seek patterns. They will make predictions, measure results, record and communicate their findings. During this unit, pupils will embed their understanding of key words, such as digestive system, digestion, oesophagus, stomach, small intestines, nutrients, large intestines, rectum, anus, mouth, teeth, saliva, incisor, canine, molar, premolar, herbivore, carnivore, omnivore, Nutrition, nutrients, carbohydrates, sugars, protein, vitamins, minerals, fibre, fat, water, skeleton, bones, muscles, support, protect, move, skull, ribs, spine, joints	This unit consolidates and builds upon the prior learning in KS1 ' Animals, including humans ' that includes; identifying carnivores, herbivores and omnivores, finding out about the basic needs of all living things, the importance for humans of exercise, hygiene and healthy nutrition. Understanding of the skeleton and its role in protecting vital organs prepares pupils for learning about the human circulatory system in UKS2. It also prepares pupils for UKS2 learning – ' Animals, including humans ' which includes recognising the impact of diet, exercise, drugs and lifestyle on the way their bodies function, describing the ways in which nutrients and water are transported within animals. Further links throughout the curriculum include identifying how human skeletons have evolved from the Stone Age to the modern day. This	Asking questions Such as, 'Do taller people have larger feet?' Pattern seeking Investigating whether longer legged people can jump further, identifying patterns in the results. Communicating findings Using appropriate methods to show the results of their investigations eg bar chart, table.

			closely links to the history taught across KS2.	
<p>Spring Term</p> <p>Materials and changes of properties (States of matter)</p>	<p>Chemistry</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when they are heated or cooled, measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>Identify the part played by evaporation and condensation in the water cycle.</p> <p>Associate the rate of evaporation with temperature.</p>	<p>This unit explores the key concepts of ‘Materials’ as being solids, liquids and gases, and changes in states of matter. Pupils will continue to develop their understanding of the world around them and how properties of materials can be utilised for a purpose. Studying the water cycle enables pupils to make links with their learning in geography (rivers, seas, climate). By working scientifically, pupils will have opportunities to plan, experiment, record evidence and report and evaluate findings.</p> <p>Key vocabulary includes Solid, liquid, gas, state, change, melting, freezing, melting point, boiling point, evaporation, temperature, water cycle, condensation.</p>	<p>This unit builds upon and consolidates KS1 learning ‘Everyday materials’ that includes identifying and distinguishing objects from the material they are made from, naming everyday materials and comparing/grouping them according to their properties. Also it build upon prior learning about how materials can be changed (Uses of everyday materials)</p> <p>This unit also prepares pupils for future learning in studying materials for properties such as solubility, transparency, magnetism and conductivity and exploring how solutions can separated through filtering, sieving and evaporating. It also prepares pupils for understanding reversible and irreversible changes.</p>	<p>Plan and set up a fair test</p> <p>To investigate how different materials change when heated and cooled.</p> <p>Record evidence</p> <p>Pupils will decide how to record and present their findings.</p> <p>Evaluate findings</p> <p>Pupils will be able to explain how temperature impacts on the rate of evaporation</p>

<p>Summer Term</p> <p>Plants</p>	<p>Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</p> <p>· Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p>Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>This unit explores the key concept of Life processes</p> <p>Growing and changing.</p> <p>Through this unit pupils will deepen their knowledge of plants, their lifecycle and growth. They will develop an understanding that plants can make their own food, whereas humans don't and therefore plants are primary producers. By working scientifically, pupils will develop skills in asking questions, making predictions, observing and evaluating. Key vocabulary will include: Photosynthesis, pollen, insect/wind pollination, seed formation, seed dispersal, wind dispersal, water dispersal, animal dispersal, stamen, stigma, carpel, fertilisation, dispersal, pollen, nectar, ovule, ovary, anther, filament.</p>	<p>This unit builds upon and consolidates KS1 learning about 'Plants' where pupils observe, find out about and describe how plants grow and stay healthy.</p> <p>This unit also prepares pupils for future learning in studying reproduction including a more detailed look into the structure and purpose of parts of a plant. This unit also closely links with our Eco school ethos and Forest School sessions, as well our school values of Care, Aspire and Belong.</p>	<p>Ask questions</p> <p>Such as 'what do plants need to grow healthily?'</p> <p>Make predictions</p> <p>Pupils may predict which conditions a plant will survive to be the most healthy.</p> <p>Observe</p> <p>For example see how coloured water travels through a celery stick</p> <p>Evaluate</p> <p>Using observations pupils can explain why and how a plant remains healthy.</p>
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