

Science Curriculum Progression

Year	Term	Topic	Key Learning Outcomes	Activities
R	Autumn 1	What Makes Me Marvellous?	<p>30-50 – Developing and understanding of growth, decay and changes over time.</p> <p>30-50 – Shows care and concern for living things and the environment.</p> <p>40-60+ They manage their own basic hygiene and personal needs successfully, including dressing and going to the toilet independently.</p> <p>40-60+ - Eats a healthy range of foodstuffs and understands the need for eating a variety of foods.</p> <p>Shows some understanding that good practices re exercise, eating, sleeping and hygiene can contribute to good health.</p> <p>40-60 – Looks closely at similarities, differences, patterns and change. (Senses)</p> <p>ELG – Knows the importance of physical exercise and a healthy diet for good health. (P.E.)</p>	Explore our families, People Who Help us in our community, Diwali
R	Autumn 2	What Makes Me Marvellous?	<p>40-60 – Looks closely at similarities, differences, patterns and change.</p> <p>ELG – Make observations of animals and plants and explain why some things occur and talk about changes.</p> <p>(Walk around village, Early Years garden preparation)</p>	Explore Bonfire Night, Nativity, signs of Autumn, walk around village, nocturnal animals
R	Spring 1 Spring 2	Can Tell Me a Story? (Traditional Tales, Variation of Traditional Tale)	<p>ELG – Make observations of animals and plants and explain why some things occur and talk about changes.</p> <p>ELG – Children know about similarities and differences re materials.</p>	Explore appropriate materials to construct Chinese Dragon, homes for the pigs, superhero jet packs
R	Summer 1 Summer 2	Oh What a Wonderful World! (Muddy Education, Signs of Spring, plants, growth)	ELG - Know about similarities, differences in relation to places, objects, materials and living things.	Muddy Education visit, Early Years Garden Explore Minibeasts, bees, wildlife homes

1	Autumn 1	The Enchanted Woodland Animals including humans	<ul style="list-style-type: none"> Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> Animal 'Who am I' game Make friends with a tree and identify it by looking at its leaves. Observe bird life Sort animal and habitat pictures Identify the structure of a plant – flower and tree Woodland walk – what treasures can you find? Use torches to investigate holes, hollows and tree stumps. Sort items into living, dead or never been alive. Describe British woodland flowers. Explore the British Woodland. Read and research woodland animals. Plant saplings Observe how flowers and saplings grow after planting.
	Autumn 2	Weather and Seasons Seasonal Changes	<ul style="list-style-type: none"> Observe changes across the four seasons. Describe weather associated with the seasons and how day length varies. Ask simple questions and recognise that they can be answered in different ways. Observe closely, using simple equipment. Perform simple tests. Identify and classify Use their observations and ideas to suggest answers to questions. Gather and record data to help in answering questions. 	<ul style="list-style-type: none"> Understand how trees change over a year – linked to each season. Create season fact files. 'Do pine cones know it's raining?' – experiment Sort animals into hot and cold places. Ice experiment – keeping insulated.
	Spring 1	Dinosaur Planet Animals including humans	<ul style="list-style-type: none"> Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. 	<ul style="list-style-type: none"> Reptile expert – invite an expert into school and find out about the creatures care needs and how they move, eat and behave. Draw and label some common reptiles based on their observations and locate on a world map where they come from. Look at images of different dinosaur teeth. Sort them into groups of meat eaters and plant eaters. Find out about the teeth of modern day carnivores, omnivores and herbivores. Label the parts of a dinosaur's body – compare to the parts of a lizard's body discussing any differences.

	Spring 2	Paws, Claws and Whiskers Animals including humans	<ul style="list-style-type: none"> Identify and classify gather and record data to help in answering questions. Perform simple tests. Identify and name a variety of common animals that are carnivores, herbivores and omnivores. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals. Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals). 	<ul style="list-style-type: none"> Understand what herbivore, omnivore and carnivores mean. Sort animals into herbivores, omnivores and carnivores. Sort animals into their species e.g fish, mammals, birds, reptiles and amphibians. 'Who's poo is who?' – investigation 'What is camouflage for?' - investigation Investigate variation amongst classmates. Compare the body of a human to the body of an animal.
	Summer 1	Bright Lights, Big City Substances, matter and materials	<ul style="list-style-type: none"> Distinguish between an object and the material from which it is made. Identify the name of a variety of everyday materials, including wood, plastic, glass, and metal. 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. Use their observations and ideas to suggest answer to questions. 	<ul style="list-style-type: none"> Material hunt around the school Sort materials and identify some of their basic properties. Describe the properties of a common material. Identify what the houses from 'The Great Fire of London' were made out of.
	Summer 2	Moon Zoom Working Scientifically	<ul style="list-style-type: none"> Use their observations and ideas to suggest answers to questions, Ask simple questions and know that they can be answered in different ways. Gather and recording data to help in answering questions. 	<ul style="list-style-type: none"> Make a Circuit to help Beegu get home – sending a light signal Ordering the planets. Understand the composition and properties of the planets. Make an air-propelled rocket – which material worked the best?
2	Autumn 1	Wriggle and Crawl Animals including humans	<ul style="list-style-type: none"> Biology - Differentiate living, dead and non-living • Basic needs of animals & offspring Simple food chains & habitats Chemistry 	<ul style="list-style-type: none"> Sorting into categories Mini-beast hunt and follow up/habitats/look at offspring across a range of animals and humans Exploring foods eaten by minibeasts – create a wormery Explanation text – T4W

		<ul style="list-style-type: none"> To use straight forward scientific evidence to support their findings. To describe the simple functions of the basic parts of the digestive system in humans. To identify the different types of teeth in humans and their simple functions. 	<p>Identify functions Label teeth and explain the function of each tooth</p>
Spring 1	<p>Blue Abyss</p> <p>Animals including humans</p>	<ul style="list-style-type: none"> To recognise that living things can be grouped in a variety of different ways. To explore and use classification keys to group, identify and name a variety of things. To recognise that environments can change and that this can sometimes pose dangers to living things. To construct and interpret a variety of food chains, identifying producers, predators and prey. 	<p>Grouping living things.</p> <p>Fact file focus on one animal.</p> <p>Look at layers of the ocean and how the animals have adapted to live there.</p>
Summer 1	<p>Misty Mountain Sierra</p> <p>Substances, matter and materials</p>	<ul style="list-style-type: none"> To identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. To set up simple practical enquiries, comparative and fair tests. To record findings using simple scientific language and bar charts/tables. To compare and group materials together, according to whether they are solids, liquids or gases. To 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. To set up simple practical enquiries, comparative and fair tests. To record findings using simple scientific language and bar charts/tables. 	<p>Evaporation experiment – using chalk to create a puddle experiment. Learn about the water cycle.</p> <p>Compare household items.</p> <p>Runny liquid experiment</p> <p>Frozen balloon experiment/tracking the cooling of liquid, cold, room temp and boiling.</p>

	Summer 1	Mini Science Topic Electricity	<ul style="list-style-type: none"> To identify common appliances that run on electricity. To identify and name the basic parts of a circuit. To recognise some common conductors and insulators, and associate metals with being good conductors. 	
5	Term 1	Peasants, Princes and Pestilence	<ul style="list-style-type: none"> Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary. Describe the life processes of reproduction in some plants 	Fair test – growing micro-organisms (mould – different temperatures) Rats Bacteria (Personification poetry)
	Term 2	Scream Machine	Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.	Centripetal force experiment Brainstorming rides and the materials' properties – buoyancy, waterproofness etc

	Term 3	<p>Stargazers</p> <p>Earth and space</p>	<p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</p> <p>Describe the movement of the earth, and other planets, relative to the Sun in the solar system</p> <p>Describe the Sun, Moon and Earth as approximately spherical bodies</p> <p>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>Take measurements using a range of scientific equipment with increasing accuracy and precision taking repeated readings when appropriate</p> <p>Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results in oral and written forms such as displays and other presentations.</p>	<p>Pendulums experiment Class based - orbits Class based – relative sizes of planets according to objects (fruit). Research</p> <p>Experiment with torches and globe/comparison of Australia and UK</p> <p>Force meters' experiment Gravity clips – creative writing</p> <p>(Extra English – Moon Myths) (Gravity rap) (Character description – Alien writing and T4W – Escape from a monster story) Spoken Language – extra writing – advertising their own rides – leading to radio advert.</p> <p>Force meter experiment</p> <p>Pendulums experiment</p> <p>Expert lectures – on a particular aspect of the topic (Express event)</p>
	Term 4	<p>Alchemy Island</p> <p>Substances, matter and materials</p>	<p>To compare and group together everyday materials on the basis of their properties</p> <p>To use knowledge of solids, liquids and gases to decide how mixtures might be separated</p> <p>To record data and results of increasing complexity using scientific diagrams, labels, classification keys etc.</p> <p>To describe what happens when a solute dissolves in a solvent to form a solution</p>	<p>Investigate samples in glass jars; coloured sand, lentils, cornflour and water etc. and group by characteristics such as transparency, hardness, electrical conductivity, thermal conductivity and magnetism.</p> <p>Investigate how mixtures could be decontaminated through filtration, sieving, evaporation etc.</p> <p>Crystal growing and monitoring changes over time. Line graphs to record results.</p> <p>Testing spoonful of gold dust.</p> <p>Plan investigation to recover gold nuggets from a soil sample. Separate the materials.</p>

	Term 4	Electricity	<p>To construct simple circuits, identifying and naming basic parts</p> <p>To identify whether or not a lamp will light in a simple series circuit</p> <p>To recognise that a switch opens and closes a circuit</p> <p>To describe what happens when a solute dissolves in a solvent form</p> <p>To plan a scientific enquiry, including comparative and fair tests</p>	<p>Build and use circuit to create a lamp for lighting their way to the shadowy cave.</p>
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6	Autumn 1	Hola Mexico	Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.	Find out about El Castillo, a pyramid shaded temple. Use torches to predict where shadows will form.
	Spring 1	Frozen Kingdom	Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals.	Choose an animal from a polar region. Research and create a fact file. Create 3D food chains. Find out about the biodiversity of the Arctic and Antarctic ocean.
	Spring 2	How have eyes evolved How does light travel Light and Sound	Recognise that light appears to travel in straight lines. Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye. Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.	Look at how light travels. Dissect an eye- look at the lens and other main features.
	5	Blood Heart Animals including humans	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. Report and present findings from enquires, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.	Identify the main parts of the human circulatory system (heart, arteries, veins, capillaries, blood and lungs). Identify the functions of blood. At the end of the topic create a fact file about the heart, blood and circulation. Measure heart rates (sprinting events). PE lesson- creating a circuit where children record heart rates. Compare how their heart rate differed on each activity. present information in graphs. Look at the effects how smoking, alcohol and drugs can affect their lifestyle. To create a life-sized human and annotate how the body is affected. Karl Landsteiner (research and collate information about him).