

Science Long Term Plan 2024-2025

Year group	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
N	Talk about what they see through various science experiments.	Talk about how we change and how our family changes over time.	Explore how vehicles work. Look at pull/push vehicle toys	Explore and talk about different textures. Understand how we care for animals.	Plant seeds and care for plants. Understand life cycle of a plant and caterpillar.	Explore different forces, such as pushing boats under water and seeing how they pop back up. Thing about different materials and how they change, ie melting ice in the sun.
R	Woodland Animals Nocturnal Animals Trees Local Area Understand the effect of changing seasons on the natural world around them.	Local Area Changes in materials Understand the effect of changing seasons on the natural world around them.	Understand the effect of changing seasons on the natural world around them.	Changes in food (noticing and commenting on changes) Understand the effect of changing seasons on the natural world around them.	Understand the effect of changing seasons on the natural world around them.	Contrasting Localities: Recognise some environments that are different from the one in which they live. (Comparing Wrose with Africa) Understand the effect of changing seasons on the natural world around them.
1	Animals, including humans Five senses. Identify and label basic body parts.	Animals, including humans Sorting and classifying herbivores, omnivores and carnivores. What is a mammal, fish, amphibian and reptile? Comparing animals	Everyday materials Materials and their properties Identifying and sorting Exploring the properties and materials Performing tests: What is the best material for an umbrella?	Plants Grow plants from seeds Group and classifying Identify and describe basic plant structure. Deciduous and evergreen trees. Local plants and trees.		
<p>Seasonal changes Observe changes across the four seasons Observe and describe weather associated with the seasons and how day length varies</p>						

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2	<p>Uses of everyday materials Comparing everyday materials Materials change shape by squashing, bending, twisting and stretching.</p>		<p>Animals, including humans Exercise and healthy living What animals and humans need to survive Importance for humans of exercise and nutrition.</p>	<p>Plants How seeds grow What plants need to live and grow</p>	<p>Living things and their habitats Differences between things that are living, dead, and things that have never been alive Habitats Early food chains</p>
3	<p>Animals, including humans Nutrition, linked to what we eat Skeletons and muscles</p>	<p>Forces and magnets Compare how things move on different surfaces. Magnetic poles. How magnets attract materials. Compare and group together a variety of everyday materials.</p>	<p>Rocks How rocks are formed Sorting and comparing different kinds of rocks Fossil formation Paleontologist Mary Anning Soil</p>	<p>Plants Function of different parts of flowering plants What different plants need to flourish Water transportation within plants. The part flowers play in the life cycle of flowering plants.</p>	<p>Light Sources of light Dangers of sunlight Shadows</p>
4	<p>Sound Sources, Vibration, Loud and faint, pitch, volume</p>	<p>States of matter Solids, liquids and gases Heating and cooling (no baking, etc). Evaporation and condensation.</p>	<p>Electricity Precautions of electricity. Simple circuits. Basic parts of a circuit. Switches. Common conductors and insulators.</p>	<p>Animals, including humans Digestive system. Teeth. Food Chains.</p>	<p>Living things and their habitats Local and wider environment Environments can change</p>

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5	<p>Living things and their habitats Life cycles of a mammal, an amphibian, an insect and a bird.</p>	<p>Forces Gravity Air resistance Water resistance Friction Gears, pulleys, levers and springs</p>	<p>Earth and space Earth relative to the sun. Moon relative to the Earth. Relationship between sun, earth and moon. Earth's rotation. Day and night.</p>	<p>Properties and changes of materials Comparing and grouping together everyday materials on properties. Dissolving Evaporating Filtering Reversible and irreversible changes How chemists create new materials (Spencer Silver, who invented the glue for sticky notes)</p>	<p>Animals, including humans Changes as humans develop from birth to old age</p>	<p>Living things and their habitats Birth, growth, development and reproduction in some plants and animals.</p>
6	<p>Living things and their habitats Classification of living things Vertebrates and invertebrates Classifying reptiles, amphibians, mammals, insects. Carl Linnaeus</p>	<p>Evolution and inheritance Importance of fossils. Living things produce offspring of the same kind. Adaptation of plants and animals to their environment. Idea of evolution. Charles Darwin.</p>	<p>Electricity Representing simple circuits using recognised symbols. Construct simple series circuits. Design burglar alarm</p>	<p>Light How light travels. How we see things. Shadows Reflection</p>	<p>Animals including humans Circulatory system Heart, blood vessels Impact of diet, exercise and drugs Transport of nutrients through the body</p>	

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Science Curriculum progression map

	Nursery	Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically	See EYFS Understanding the World – Science Planning		<ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways observing closely, using simple equipment performing simple tests identifying and classifying using their observations and ideas to suggest answers to questions gathering and recording data to help in answering questions. 	<ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions identifying differences, similarities or changes related to simple scientific ideas and processes using straightforward scientific evidence to answer questions or to support their findings. 	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs using test results to make predictions to set up further comparative and fair tests reporting and presenting 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 identifying scientific evidence that has been used to support or refute ideas or arguments. 			
Animals including humans	See EYFS Understanding the World – Science Planning		<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, 	<ul style="list-style-type: none"> notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air) describe the importance for humans of 	<ul style="list-style-type: none"> 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 	<ul style="list-style-type: none"> 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 construct and interpret a variety of food chains, identifying producers, predators and prey. 	<ul style="list-style-type: none"> describe the changes as humans develop to old age. 	<ul style="list-style-type: none"> identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function describe the ways in which nutrients and water are transported within animals, including humans.

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		<p>herbivores and omnivores</p> <ul style="list-style-type: none"> 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. 	<p>exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>muscles for support, protection and movement.</p>			
<p>Plants</p>	<p align="center">See EYFS Understanding the World – Science Planning</p>	<ul style="list-style-type: none"> identify and name a variety of common wild and garden plants, including deciduous and evergreen trees identify and describe the basic structure of a variety of common flowering plants, including trees. 	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers 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 investigate the way in which water is transported within plants 			

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				<ul style="list-style-type: none"> • explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 			
<p>Living things and habitats</p>	<p style="text-align: center;">See EYFS Understanding the World – Science Planning</p>		<ul style="list-style-type: none"> • explore and compare the differences between things that are living, dead, and things that have never been alive • identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other • identify and name a variety of plants and animals in their habitats, including micro-habitats • describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food. 		<ul style="list-style-type: none"> • recognise that living things can be grouped in a variety of ways • explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment • recognise that environments can change and that this can sometimes pose dangers to living things. 	<ul style="list-style-type: none"> • describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird • describe the life process of reproduction in some plants and animals. 	<ul style="list-style-type: none"> • 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 • give reasons for classifying plants and animals based on specific characteristics.

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<p>Evolution and Inheritance</p>				<ul style="list-style-type: none"> • recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago • recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents • identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. 			
<p>Seasonal changes</p>	<p style="text-align: center;">See EYFS Understanding the World – Science Planning</p>	<ul style="list-style-type: none"> • observe changes across the four seasons • observe and describe weather associated with the seasons and how day length varies. 					
<p>Forces and Magnets</p>	<p style="text-align: center;">See EYFS Understanding the World – Science Planning</p>			<ul style="list-style-type: none"> • compare how things move on different surfaces • notice that some forces need contact between two objects, but magnetic forces can act at a distance • observe how magnets attract or repel each other and attract some materials and not others • compare and group together a variety of everyday materials on the 		<ul style="list-style-type: none"> • explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object • identify the effects of air resistance, water resistance and friction, that act between moving surfaces • recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. 	

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			<p>basis of whether they are attracted to a magnet, and identify some magnetic materials</p> <ul style="list-style-type: none"> describe magnets as having two poles predict whether two magnets will attract or repel each other, depending on which poles are facing. 		
Sound	See EYFS Understanding the World – Science Planning			<ul style="list-style-type: none"> identify how sounds are made, associating some of them with something vibrating recognise that vibrations from sounds travel through a medium to the ear find patterns between the pitch of a sound and features of the object that produced it find patterns between the volume of a sound and the strength of the vibrations that produced it recognise that sounds get fainter as the distance from the sound source increases. 	
Light	See EYFS Understanding the World – Science Planning		<ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be 		<ul style="list-style-type: none"> 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

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			<p>dangerous and that there are ways to protect their eyes</p> <ul style="list-style-type: none"> recognise that shadows are formed when the light from a light source is blocked by an opaque object find patterns in the way that the size of shadows change. 		<ul style="list-style-type: none"> use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.
Electricity	See EYFS Understanding the World – Science Planning			<ul style="list-style-type: none"> identify common appliances that run on electricity construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers identify whether or not a lamp will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit recognise some common conductors and insulators, and associate metals with being good conductors. 	<ul style="list-style-type: none"> associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches use recognised symbols when representing a simple circuit in a diagram.
Earth and Space				<ul style="list-style-type: none"> describe the movement of the Earth, and other planets, relative to the Sun in the solar system describe the 	

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					<p>movement of the Moon relative to the Earth</p> <ul style="list-style-type: none"> 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>Everyday Materials and States of Matter</p>	<p style="text-align: center;">See EYFS Understanding the World – Science Planning</p>	<ul style="list-style-type: none"> 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. 	<ul style="list-style-type: none"> 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. 		<ul style="list-style-type: none"> 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 condensation in the water cycle and associate the rate of evaporation with temperature. 	<ul style="list-style-type: none"> compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic demonstrate that dissolving, mixing 	

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						<p>and changes of state are reversible changes</p> <ul style="list-style-type: none"> • explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda. 	
Rocks	<p align="center">See EYFS Understanding the World – Science Planning</p>			<ul style="list-style-type: none"> • compare and group together different kinds of rocks on the basis of their appearance and simple physical properties • describe in simple terms how fossils are formed when things that have lived are trapped within rock • recognise that soils are made from rocks and organic matter. 			