

Science Progression Document

		EYFS 3-4	EYFS Reception	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Biology	Plants	<p>DM - Plant seeds and care for growing plants (<i>Show and explain the concepts of growth, change and decay with natural materials.</i>)</p> <p>DM - Understand the key features of the life cycle of a plant (<i>plant seeds and bulbs so children observe growth and decay over time</i>)</p>	<p>DM - Explore the natural world around them. (<i>After close observation, draw pictures of the natural world, including plants.</i>)</p> <p>DM - Describe what they see, hear and feel whilst outside. (<i>Name and describe some plants children are likely to see, encouraging children to recognise familiar plants whilst outside.</i>)</p> <p>ELG - Explore the natural world around them, making observations and drawing pictures of plants.</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees. (<i>roots, stem/trunk, leaves and flowers.</i>)</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</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>			
	Plants Vocabulary	<p>New Vocabulary: Plant, seed, bulb, grow, decay, life cycle.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Natural, world, root, stem, leaf, flower.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Tree, deciduous, evergreen, shoot, trunk, branches, bud, blossom, petals, fruit.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Germination, growth, survival, reproduction, water, light, temperature.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Air, nutrients, pollination, seed formation, seed dispersal, reproduce, fertiliser, transported.</p>			

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Animals inc. Humans	<p>DM - Talk about what they see, using a wide vocabulary. <i>(Plan and introduce new vocabulary, encouraging children to use it to discuss their findings and ideas.)</i></p> <p>DM - Understand the key features of the life cycle of an animal. <i>(Help children to care for animals and take part in first-hand scientific explorations of animal life cycles, such as caterpillars or chick eggs)</i></p> <p>DM PSED- Make healthy choices about food, drink, activity and toothbrushing <i>(Talk to children about the importance of eating healthily and brushing their teeth. Consider how to support oral health. For example, some settings use a toothbrushing programme.)</i></p>	<p>DM - Explore the natural world around them. <i>(After close observation, draw pictures of the natural world, including animals.)</i></p> <p>DM - Describe what they see, hear and feel whilst outside. <i>(Name and describe some animals children are likely to see, encouraging children to recognise familiar animals whilst outside.)</i></p> <p>ELG - Explore the natural world around them, making observations and drawing pictures of animals.</p> <p>DM PSED - Know and talk about the different factors that support their overall health and well-being:</p> <ul style="list-style-type: none"> • Physical activity • Healthy eating • Toothbrushing • Sensible 'screen time' • Good sleep routine <p>ELG - Manage their own basic hygiene and personal needs, including dressing, going to the toilet and understanding the importance of healthy food choices.</p>	<p>Identify and group a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</p> <p>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>	<p>Notice that animals, including humans, have offspring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>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.</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	<p>Describe the changes as humans develop to old age.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>		
	Vocabulary	<p>New Vocabulary: Life, life cycle, animal, healthy, food, activity.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Senses, see, smell, touch, hear, body, physical.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Fish, amphibians, reptiles, birds and mammals, habitat, carnivores, omnivores, herbivores, human, head, neck, arms, elbows, legs, knees, face, ears, eyes, hair, mouth, teeth, textures, sounds, smells.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Offspring, baby, toddler, child, teenager, adult, basic needs, survival, water, food, air, exercise, nutrition, food, hygiene, reproduction, growth.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Diets, food groups, skeletons, muscles, support, protection, movement, functions.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Digestive system, tongue, oesophagus, stomach, and small and large intestine, food chains, producers, predators, prey.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Development, reproduction, embryo, puberty, gestation, length, mass.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Circulatory system, heart, blood vessels, blood, internal organs, nutrients, transported, drugs, substances, damage, harmful, lifestyle, health.</p>

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Living things and their environment	<p>DM - Begin to understand the need to respect and care for the natural environment and all living things. <i>(Plan and introduce new vocabulary related to the exploration. Encourage children to use it in their discussions, as they care for living things.)</i></p>	<p>DM - Recognise some environments that are different from the one in which they live. <i>(Teach children about a range of contrasting environments within both their local and national region.)</i></p> <p>ELG - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class.</p>		<p>Explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p>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.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats.</p> <p>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. (refer to Animals inc Humans)</p>		<p>Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p>	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals. (refer to Animals inc Humans)</p>	<p>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</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>
	Vocabulary	<p>New Vocabulary: Living, alive, natural, environment, plants, animals, care.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Same, different, hot, cold, dry, wet, land, water/sea, farmland, woods, seaside.</p>		<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Dead, healthy, habitat, microhabitats, food chain, source, food, shelter, sorting, classifying.</p>		<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Changes, grouping, flowering, non-flowering, vertebrate, invertebrate, human impact, positive, negative, nature reserves, ecologically planned parks, garden ponds, population, development, litter, deforestation.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Life cycle, mammal, amphibian, insect, bird, naturalists, animal behaviourists, reproduction, sexual, asexual, tuber, hatching.</p>

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Chemistry	Materials	<p>DM - Talk about the differences between materials and changes they notice <i>(Provide children with opportunities to change materials from one state to another.)</i></p> <p>DM - Use all their senses in hands-on exploration of natural materials. <i>(Provide interesting natural environments for children to explore freely outdoors.)</i></p> <p>DM - Explore collections of materials with similar and/or different properties. <i>(Make collections of natural materials to investigate and talk about.)</i></p>	<p>DM - Explore the natural world around them. <i>(Observe and interact with natural processes, such as ice melting)</i></p> <p>ELG - Understand some important processes and changes in the natural world around them, including changing states of matter.</p>	<p>Everyday materials:</p> <p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Uses of everyday materials:</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Rocks:</p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>States of matter:</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, and 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 and associate the rate of evaporation with temperature.</p>	<p>Properties and changes of materials:</p> <p>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.</p> <p>Know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>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.</p>

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	Vocabulary	<p>New Vocabulary: Material, solid, liquid, gas, cooking, cooling, heating, melting.</p> <p>New Vocabulary: Freezing, boiling.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Object, wood, plastic, glass, metal, water, rock, brick, paper, fabrics, elastic, foil, physical properties, hard/soft, stretchy/stiff, shiny/dull, rough/smooth, bendy/not bendy, waterproof/not waterproof, absorbent/not absorbent, opaque/transparent.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Cardboard, squashing, bending, twisting, stretching, properties.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Appearance, classify, fossils, soils, grains, crystals, sedimentary, microscope.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Temperature, degrees Celsius (°C), evaporation, condensation, water cycle.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Hardness, solubility, transparency, conductivity (electrical and thermal), magnetism, liquid, solution, substance, separated, filtering, sieving, dissolving, mixing, changes of state, reversible, irreversible, burning, rusting.</p>	
Physics	Forces	<p>DM - Explore how things work (Provide mechanical equipment for children to play with and investigate. Suggestions: wind-up toys, pulleys, sets of cogs with pegs and boards)</p> <p>DM - Explore and talk about different forces they can feel. (Draw children's attention to forces. Plan and introduce new vocabulary related to the exploration and encourage children to use it.)</p> <p>DM - Talk about the differences between materials and changes they notice (Explore how different materials sink and float.)</p>	<p>DM - Explore the natural world around them. (Observe and interact with natural processes, such as a magnet attracting an object and a boat floating on water.)</p>		<p>Forces and magnets: Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction, that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>	
	Vocabulary	<p>New Vocabulary: Machine, push, pull, cog, forces, elastic, stretch, snap, bend, magnet, magnetic, attraction, repulsion, float, sink.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Force, magnet, poles, north, south, metal, object, floating, sinking.</p>		<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Move, surfaces, attract, repel, materials, direct contact, distance.</p>		<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Gravity, Earth, falling, air resistance, water resistance, friction, mechanisms, levers, pulleys, gears, springs, machines, gravitation, mass, weight.</p>	

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	Electricity					<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>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.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>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.</p> <p>Use recognised symbols when representing a simple circuit in a diagram.</p>
	Vocabulary					<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Electricity, appliances, series circuits, components, cells, wires, bulbs, switches, buzzers, loop, battery, conductors, insulators.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Voltage, brightness, volume, variations, components, function, motors.</p>

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Light and Sound		DM - Talk about the differences between materials and changes they notice. <i>(Explore how you can shine light through some materials, but not others. Investigate shadows.)</i>	DM - Explore the natural world around them. <i>(Observe and interact with natural processes, such as a sound causing a vibration, light travelling through transparent material, an object casting a shadow)</i>			<p>Light: Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>Sound: Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>		<p>Light: Recognise that light appears to travel in straight lines.</p> <p>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.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>
Vocabulary		New Vocabulary: Light, materials, shine, dark, solid, blocked, shadow.	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Travel, transparent, sound, vibration, volume, high, low.</p>			<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Absence, reflect, mirror, surfaces, sun, dangerous, protect, eyes, opaque, measure, distance.</p>	<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Medium, ear, pitch, strength, fainter, distance, source, patterns, insulation.</p>		<p><i>Review all previous vocabulary where applicable.</i></p> <p>New Vocabulary: Straight lines, cast.</p>

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	Other		<p>DM - Understand the effect of changing seasons on the natural world around them. <i>(Guide children's understanding by draw children's attention to the weather and seasonal features.)</i></p> <p>ELG - Understand some important processes and changes in the natural world around them, including the seasons.</p>	<p>Seasonal Changes: Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>				<p>Earth and Space: Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon 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>Evolution and inheritance: Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>
	Vocabulary		<p>New Vocabulary: Seasons, spring, summer, autumn, winter, day, weather, hot, cold, warm, sun, wind, rain, snow, hail, sleet, fog, animals, behave.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Changes, day length, sun, directly.</p>				<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Earth, planets, sun, star, solar system, movement, moon, spherical bodies, rotation, celestial body, orbit, geocentric model, heliocentric model, shadow clocks, sundials, astronomical clocks, phases of the moon, gibbous and crescent.</p>	<p>Review all previous vocabulary where applicable.</p> <p>New Vocabulary: Change, time, fossils, inhabited, produce, offspring, characteristics, identical, parents, variation, adapt, survive, conditions, environment, evolution, palaeontologists.</p>