

## Science Progression of Skills

	Year 1/2	Year 3/4
<b>Working Scientifically</b>	Explore the world around them and raise their own simple questions	Raise their own relevant questions about the world around them
	Experience different types of science enquiries, including practical activities	Should be given a range of scientific experiences including different types of science enquiries to answer questions
	Begin to recognise different ways in which they might answer scientific questions	Start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions
	Carry out simple tests Set up simple practical enquiries, comparative and fair tests	Recognise when a simple fair test is necessary and help to decide how to set it up
	Use simple features to compare objects, materials and living things and, with help, decide how to sort and group them (identifying and classifying)	Talk about criteria for grouping, sorting and classifying; and use simple keys
	Ask people questions and use simple secondary sources to find answers	Recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations
	Observe closely using simple equipment with help, observe changes over time	Make systematic and careful observations  Help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used
	With guidance, they should begin to notice patterns and relationships	Begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them
	Use simple measurements and equipment (e.g. hand lenses, egg timers) to gather data	Take accurate measurements using standard units  Learn how to use a range of (new) equipment, such as data loggers / thermometers appropriately
	Record simple data	Collect and record data from their own observations and measurements in a variety of ways: notes, bar charts and tables, standard units, drawings, labelled diagrams, keys and help to make decisions about how to analyse this data
	Use their observations and ideas to suggest answers to questions	With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and answer questions
	Talk about what they have found out and how they found it out With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language	Use relevant simple scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences, including oral and written explanations, displays or presentations of results and conclusions  With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected and finding ways of improving what they have already done

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<b>Materials</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• distinguish between an object and the material from which it is made;</li> <li>• identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock;</li> <li>• describe the simple physical properties of a variety of everyday materials;</li> <li>• compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> <li>• identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses;</li> <li>• find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• compare and group together different kinds of rocks on the basis of their appearance and simple physical properties;</li> <li>• describe in simple terms how fossils are formed when things that have lived are trapped within rock;</li> <li>• recognise that soils are made from rocks and organic matter.</li> <li>• compare and group materials together, according to whether they are solids, liquids or gases;</li> <li>• 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);</li> <li>• identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>
	<p><b>Key Vocab:</b> materials, wood, plastic, glass, metal, water, rock, rubber, fabric, transparent, opaque, waterproof, absorbent, properties, suitability, recycle</p>	<p><b>Key Vocab:</b> sedimentary, igneous, metamorphic, permeable, durable, erosion, natural, human-made, fossilisation, palaeontology, solids, liquids, gases, particles, evaporate, condense, melt, freeze, precipitation</p>
<b>Living Things &amp; Their Habitats</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• explore and compare the differences between things that are living, dead, and things that have never been alive;</li> <li>• 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;</li> <li>• identify and name a variety of plants and animals in their habitats, including microhabitats;</li> <li>• 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.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• recognise that living things can be grouped in a variety of ways;</li> <li>• explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment;</li> <li>• recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>
	<p><b>Key Vocab:</b> living, dead, never living, habitats, microhabitats, shelter, survive, food source, life processes - movement, sensitivity, growth, reproduction, nutrition, excretion, respiration</p>	<p><b>Key Vocab:</b> organisms, species, classification, characteristics, environment, adapt, endangered, extinct, pollution, climate change</p>

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<b>Animals including Humans (Human Body)</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals;</li> <li>• identify and name a variety of common animals that are carnivores, herbivores and omnivores;</li> <li>• describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets);</li> <li>• identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</li> <li>• notice that animals, including humans, have offspring which grow into adults;</li> <li>• find out about and describe the basic needs of animals, including humans, for survival (water, food and air);</li> <li>• describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• 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;</li> <li>• identify that humans and some other animals have skeletons and muscles for support, protection and movement.</li> <li>• describe the simple functions of the basic parts of the digestive system in humans;</li> <li>• identify the different types of teeth in humans and their simple functions;</li> <li>• construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>
	<p><b>Key Vocab:</b> fish, amphibians, reptiles, birds, mammals, carnivore, herbivore, omnivore, sight, hearing, touch, smell, taste, offspring, life cycle, exercise, diet, nutrition, hygiene, germs</p>	<p><b>Key Vocab:</b> nutrients, muscles, tendons, joints, vertebrate, invertebrate, energy, digest, oesophagus, stomach, small/large intestine, molar, premolar, incisor, canine, producer, prey, consumer</p>
<b>Plants</b>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees;</li> <li>• identify and describe the basic structure of a variety of common flowering plants, including trees.</li> <li>• observe and describe how seeds and bulbs grow into mature plants;</li> <li>• find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers;</li> <li>• 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;</li> <li>• investigate the way in which water is transported within plants;</li> <li>• explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</li> </ul>
	<p><b>Key Vocab:</b> evergreen, deciduous, flower, fruit, leaf/leaves, petal, stem, root, seed, bulb, germination, shoot, seed, dispersal, sunlight, nutrition</p>	<p><b>Key Vocab:</b> evaporation, nutrients, pollination, reproduce, fertilisation, stamen, anther, filament, carpel, stigma, ovary, ovule, carbon dioxide</p>

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Seasonal Changes	<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• observe changes across the 4 seasons;</li> <li>• observe and describe weather associated with the seasons and how day length varies.</li> </ul>	
	<p><b>Key Vocab:</b> spring, summer, autumn, winter, weather, temperature, wind direction, forecast, thermometer, daylight</p>	
Light		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• recognise that they need light in order to see things and that dark is the absence of light;</li> <li>• notice that light is reflected from surfaces;</li> <li>• recognise that light from the sun can be dangerous and that there are ways to protect their eyes;</li> <li>• recognise that shadows are formed when the light from a light source is blocked by an opaque object;</li> <li>• find patterns in the way that the size of shadows changes.</li> </ul>
		<p><b>Key Vocab:</b> light source, shadow, translucent, reflect, visible, illuminate, surface, ray, UV light</p>
Forces		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• compare how things move on different surfaces;</li> <li>• notice that some forces need contact between 2 objects, but magnetic forces can act at a distance;</li> <li>• observe how magnets attract or repel each other and attract some materials and not others;</li> <li>• 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;</li> <li>• describe magnets as having 2 poles;</li> <li>• predict whether 2 magnets will attract or repel each other, depending on which poles are facing.</li> </ul>
		<p><b>Key Vocab:</b> push, pull, surface, force, friction, magnetic, magnetic poles, attract, repel, compass,</p>

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<b>Sound</b>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify how sounds are made, associating some of them with something vibrating;</li> <li>• recognise that vibrations from sounds travel through a medium to the ear;</li> <li>• find patterns between the pitch of a sound and features of the object that produced it;</li> <li>• find patterns between the volume of a sound and the strength of the vibrations that produced it;</li> <li>• recognise that sounds get fainter as the distance from the sound source increases.</li> </ul>
		<p><b>Key Vocab:</b> eardrum, vibration, vocal chords, particles, pitch, volume, amplitude, sound wave, distance, soundproof, absorb</p>
<b>Electricity</b>		<p><b>Pupils should be taught to:</b></p> <ul style="list-style-type: none"> <li>• identify common appliances that run on electricity;</li> <li>• construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers;</li> <li>• 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;</li> <li>• recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit;</li> <li>• recognise some common conductors and insulators, and associate metals with being good conductors.</li> </ul>
		<p><b>Key Vocab:</b> electricity, appliances, circuit, battery, bulb, cell, switch, motor, buzzer, conductor, insulator</p>

