

## Science End Points - Overview

Science End Points	
EYFS	<p><b>F2</b></p> <ul style="list-style-type: none"><li>• Know that some environments are different to the one in which they live.</li><li>• Know about members of their immediate family and community.</li><li>• Know how to name and describe people who are familiar to them.</li><li>• Know how to draw information from a simple map.</li><li>• Know how to explore the natural world around them.</li><li>• To know how to describe what they see, hear and feel whilst outside.</li><li>• To know the effect of changing seasons on the natural world around them.</li></ul>
	<p><b>Disciplinary Concepts</b></p> <ul style="list-style-type: none"><li>• Show curiosity and ask questions</li><li>• Make observations using their senses and simple equipment</li><li>• Make direct comparisons</li><li>• Use equipment to measure</li><li>• Record their observations by drawing, taking photographs, using sorting rings or boxes and, in Reception, on simple tick sheets</li><li>• Use their observations to help them to answer their questions</li><li>• Talk about what they are doing and have found out</li><li>• Identify, sort and group.</li></ul> <p><b>The Natural World (ELG)</b></p> <ul style="list-style-type: none"><li>• 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.</li><li>• Understand some important processes and changes in the natural world around them, including the seasons.</li></ul> <p><b>Prerequisite skills for Science at KS1</b></p> <ul style="list-style-type: none"><li>• Explore the natural world around them.</li><li>• Describe what they see, hear and feel whilst outside.</li><li>• Recognise some environments that are different to the one in which they live.</li><li>• Understand the effect of changing seasons on the natural world around them.</li></ul>

Year	Seasonal Changes	Plants	Animals including humans	Everyday materials	KS1 Disciplinary concepts							
1	<ul style="list-style-type: none"> <li>To know that there are changes across the four seasons.</li> <li>To know what weather is associated with what season.</li> <li>To know how the length of day varies depending on the season.</li> </ul>	<ul style="list-style-type: none"> <li>To know about a variety of common wild and garden plants, including deciduous and evergreen trees.</li> <li>To know the basic structure of a variety of common flowering plants, including trees.</li> </ul>	<ul style="list-style-type: none"> <li>To know the names of, and be able to identify, a variety of <b>common animals</b> including fish, amphibians, reptiles, birds and mammals.</li> <li>To know the names of, and be able to identify, a variety of common animals that are carnivores, herbivores and omnivores.</li> <li>To know about the structure of a variety of <b>common animals</b> (see above) and pets.</li> <li>To know the basic parts of the human body, to the point of being able to identify, name, draw and label the parts.</li> <li>To know which part of the human body is associated with each sense.</li> </ul>	<ul style="list-style-type: none"> <li>To know how to distinguish between an object and the material from which it is made.</li> <li>To know the names of, and be able to identify, a variety of everyday materials including; wood, plastic, glass, metal, water and rock.</li> <li>To know the simple physical properties of a variety of everyday materials.</li> <li>To know how to compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul>	<ul style="list-style-type: none"> <li>To ask simple questions and recognise that they can be answered in different ways</li> <li>To observe closely, using simple equipment.</li> <li>To be able to: <ul style="list-style-type: none"> <li>Perform simple tests.</li> <li>Identify and classify.</li> </ul> </li> <li>To gather and record data to help in answering questions.</li> <li>Use observations and ideas to suggest answers to questions.</li> </ul>							
2	<th>Animals including humans</th> <td> <ul style="list-style-type: none"> <li>To know that animals, including humans, have offspring which grow into adults.</li> <li>To know about, and to describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>To know about the importance of human exercise, eating the right</li> </ul> </td> <td> <th>Everyday materials</th> <td> <ul style="list-style-type: none"> <li>To know how to 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>To know how the shapes of solid objects made from some materials can be changed by squashing,</li> </ul> </td> <td> <th>Living things and their habitats</th> <td> <ul style="list-style-type: none"> <li>To know the differences between things that are living, dead and things that have never been alive.</li> <li>To know 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</li> </ul> </td> <td> <th>Plants</th> <td> <ul style="list-style-type: none"> <li>To know how seeds and bulbs grow into mature plants.</li> <li>To know that plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> </td> </td></td></td>	Animals including humans	<ul style="list-style-type: none"> <li>To know that animals, including humans, have offspring which grow into adults.</li> <li>To know about, and to describe the basic needs of animals, including humans, for survival (water, food and air).</li> <li>To know about the importance of human exercise, eating the right</li> </ul>	<th>Everyday materials</th> <td> <ul style="list-style-type: none"> <li>To know how to 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>To know how the shapes of solid objects made from some materials can be changed by squashing,</li> </ul> </td> <td> <th>Living things and their habitats</th> <td> <ul style="list-style-type: none"> <li>To know the differences between things that are living, dead and things that have never been alive.</li> <li>To know 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</li> </ul> </td> <td> <th>Plants</th> <td> <ul style="list-style-type: none"> <li>To know how seeds and bulbs grow into mature plants.</li> <li>To know that plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> </td> </td></td>	Everyday materials	<ul style="list-style-type: none"> <li>To know how to 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>To know how the shapes of solid objects made from some materials can be changed by squashing,</li> </ul>	<th>Living things and their habitats</th> <td> <ul style="list-style-type: none"> <li>To know the differences between things that are living, dead and things that have never been alive.</li> <li>To know 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</li> </ul> </td> <td> <th>Plants</th> <td> <ul style="list-style-type: none"> <li>To know how seeds and bulbs grow into mature plants.</li> <li>To know that plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> </td> </td>	Living things and their habitats	<ul style="list-style-type: none"> <li>To know the differences between things that are living, dead and things that have never been alive.</li> <li>To know 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</li> </ul>	<th>Plants</th> <td> <ul style="list-style-type: none"> <li>To know how seeds and bulbs grow into mature plants.</li> <li>To know that plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul> </td>	Plants	<ul style="list-style-type: none"> <li>To know how seeds and bulbs grow into mature plants.</li> <li>To know that plants need water, light and a suitable temperature to grow and stay healthy.</li> </ul>

	amounts of different types of food, and hygiene.	bending, twisting and stretching.	plants and how they depend on each other. <ul style="list-style-type: none"> <li>To know the names of, and be able to identify, a variety of plants and animals in their habitats, including micro-habitats.</li> <li>To know 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>			
<b>Year 3</b>	<b>Forces and Magnets</b>	<b>Animals including humans</b>	<b>Rocks</b>	<b>Plants</b>	<b>Light and Shadows</b>	<b>LKS2 Disciplinary concepts</b>
	<ul style="list-style-type: none"> <li>To know how things move on different surfaces, and form comparisons between them.</li> <li>To know that some forces need contact between two objects, but magnetic forces can act at a distance.</li> <li>To know how to 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> </ul>	<ul style="list-style-type: none"> <li>To know 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>To know that humans and some other animals have skeletons and muscles for support, protection and movement.</li> </ul>	<ul style="list-style-type: none"> <li>To know how to compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</li> <li>To know how fossils are formed when things that have lived together are trapped within rock.</li> <li>To know that soils are made from rocks and organic matter.</li> </ul>	<ul style="list-style-type: none"> <li>To know the functions of different parts of flowering plants (roots, stem/trunk, leaves and flowers).</li> <li>To know what the requirements of plants are for life and growth (air, light, water, nutrients from soil and room to grow) and how they vary from plant to plant.</li> <li>To know the way in which water is transported within plants.</li> <li>To know the part that flowers play in the life cycle of flowering plants,</li> </ul>	<ul style="list-style-type: none"> <li>To know that light is needed in order to see things and that dark in the absence of light.</li> <li>To know that light is reflected from surfaces.</li> <li>To know that light from the sun can be dangerous and that there are ways to protect their eyes.</li> <li>To know that shadows are formed when the light from a light source is blocked by an opaque object.</li> <li>To know how to find patterns in the way that the size of shadows change.</li> </ul>	<ul style="list-style-type: none"> <li>To ask relevant questions and use different types of scientific enquiries to answer them</li> <li>To make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</li> <li>To set up simple practical enquiries, comparative and fair tests.</li> </ul>

	<ul style="list-style-type: none"> <li>● To know that magnets have two poles.</li> <li>● To know whether two magnets will attract or repel each other, depending on which poles are facing.</li> </ul>			including pollination, seed formation and seed dispersal.		<ul style="list-style-type: none"> <li>● To gather, record, classify and present data in a variety of ways to answer questions.</li> <li>● Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.</li> </ul>
<b>Year 4</b>	<b>Living things and their habitats</b>	<b>Sound</b>	<b>Changes of state</b>	<b>Electricity</b>	<b>Animals including humans</b>	
	<ul style="list-style-type: none"> <li>● To know that living things can be grouped in a variety of ways.</li> <li>● To know how to use classification keys to help group, identify and name a variety of living things in their local and wider environment.</li> <li>● To recognise that environments can change and that this can sometimes pose dangers to living things.</li> </ul>	<ul style="list-style-type: none"> <li>● To know how sounds are made, associating some of them with something vibrating.</li> <li>● To know that vibrations from sounds travel through a medium to the ear.</li> <li>● To know how to find patterns between the pitch of a sound and features of the object that produced it.</li> <li>● To know how to find patterns between the volume of a sound and the strength of the vibrations that produced it.</li> <li>● To know that sounds get fainter as the distance from the sound source increases.</li> </ul>	<ul style="list-style-type: none"> <li>● To know how to compare and group materials together, according to whether they are solids, liquids or gases.</li> <li>● To know that some materials change state when they are heated or cooled.</li> <li>● To know how to measure and research the temperature at which the changes in state happens in degrees Celsius (°C).</li> <li>● To know the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</li> </ul>	<ul style="list-style-type: none"> <li>● To know which common appliances run on electricity.</li> <li>● To know how to construct a simple series of electrical circuits, identifying and naming basic parts, including cells, wires, bulbs, switches and buzzers.</li> <li>● To know 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>● To know that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</li> </ul>	<ul style="list-style-type: none"> <li>● To know the simple functions of the basic parts of the digestive system in humans.</li> <li>● To know the different types of teeth in humans and their simple functions.</li> <li>● To know how to construct and interpret a variety of food chains, identifying producers, predators and prey.</li> </ul>	<ul style="list-style-type: none"> <li>● To use straightforward scientific evidence to answer questions or support findings.</li> <li>● Use results to draw simple conclusions and make predictions.</li> <li>● Report on findings from enquiries using oral and written explanations.</li> </ul>

				<ul style="list-style-type: none"> <li>To know some common conductors and insulators, and associate metals with being good conductors.</li> </ul>		
<b>Year 5</b>	<b>Materials</b>	<b>Earth and Space</b>	<b>Forces</b>	<b>Living things and their habitats</b>	<b>Animals including humans</b>	<b>UKS2 Disciplinary concepts</b>
	<ul style="list-style-type: none"> <li>To know how to 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.</li> <li>To know that some materials will dissolve in liquid to form a solution and describe how to recover a substance from a solution.</li> <li>To know how mixtures might be separated, including through filtering, sieving and evaporating, using knowledge of solids, liquids and gases to decide.</li> </ul>	<ul style="list-style-type: none"> <li>To know about the movement of the Earth and other planets, relative to the Sun in the solar system.</li> <li>To know about the movement of the Moon relative to the Earth.</li> <li>To know that the Sun, Earth and Moon are approximately spherical bodies</li> <li>To know how the Earth's rotation affects day and night and the apparent 'movement' of the Sun across the sky.</li> </ul>	<ul style="list-style-type: none"> <li>To know that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</li> <li>To know the effects of air resistance, water resistance and friction that act between moving surfaces.</li> <li>To know that some mechanisms, including levels, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>	<ul style="list-style-type: none"> <li>To know the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</li> <li>To know the life process of reproduction in some plants and animals.</li> </ul>	<ul style="list-style-type: none"> <li>To know what changes occur in humans as they develop to old age.</li> </ul>	<ul style="list-style-type: none"> <li>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>To take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.</li> <li>To plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</li> <li>Record data and results of increasing complexity using</li> </ul>

	<ul style="list-style-type: none"> <li>To know the uses of everyday materials, including metals, wood and plastic.</li> <li>To know that dissolving, mixing and changes of state are reversible changes.</li> <li>To know that some changes result in formation of new materials that that this kind of change is not usually reversible, including changes associated with burning and the action of acid on bicarbonate of soda.</li> </ul>					<p>scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <ul style="list-style-type: none"> <li>Identify scientific evidence that has been used to support or refute ideas or arguments.</li> <li>Report and present findings from enquiries.</li> </ul>
<b>Year 6</b>	<b>Light and Sight</b>	<b>Electricity</b>	<b>Animals including humans</b>	<b>Living things and their characteristics</b>	<b>Evolution and inheritance</b>	
	<ul style="list-style-type: none"> <li>To know that light appears to travel in straight lines.</li> <li>To know that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</li> <li>To know that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</li> </ul>	<ul style="list-style-type: none"> <li>To know the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</li> <li>To know how to compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the</li> </ul>	<ul style="list-style-type: none"> <li>To know the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</li> <li>To know the impact of diet, drugs, exercise and lifestyle on the way bodies function.</li> <li>To know the ways in which nutrients and water are transported within</li> </ul>	<ul style="list-style-type: none"> <li>To know 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.</li> <li>To know how to classify plants and animals based on specific characteristics,</li> </ul>	<ul style="list-style-type: none"> <li>To know that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</li> <li>To know that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</li> <li>To know how animals and plants</li> </ul>	

	<ul style="list-style-type: none"><li>● To know that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li></ul>	<p>on/off position of switches.</p> <ul style="list-style-type: none"><li>● To know how to use recognised symbols when representing a simple circuit in a diagram.</li></ul>	<p>animals, including humans.</p>	<p>giving reasoning for choices made.</p>	<p>are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	
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