



# Knowledge and Skills Progression Map – Science

	FS2	Y1/2	Y3/4	Y5/6
<u>Working Scientifically</u>	<ul style="list-style-type: none"> <li>• Ask simple questions</li> <li>• Make observations</li> </ul>	<ul style="list-style-type: none"> <li>• Ask simple questions and recognise that they can be answered in different ways</li> <li>• Observe closely using simple equipment</li> <li>• Perform simple tests</li> <li>• Identify and classify</li> <li>• Use their observations and ideas to suggest answers to questions</li> <li>• Gather and record data</li> </ul>	<p>Yr 3</p> <ul style="list-style-type: none"> <li>• Use standard measures to record findings</li> <li>• Read scales accurately and estimate between the numbers on a scale</li> <li>• Decide how to collect and present the data</li> <li>• Record results in a table</li> <li>• Record results in graph form</li> <li>• Answer questions around data presented in graphs</li> <li>• Decide what secondary information sources to use</li> <li>• Recognise when to use a fair test to answer a question</li> </ul> <p>Yr 4</p> <ul style="list-style-type: none"> <li>• Convert between different units of metric measure eg. m/km</li> <li>• Decide how accurate to make my measurements</li> <li>• Choose equipment with an appropriate data range</li> <li>• Construct and record results in a table</li> <li>• Present findings in graphs and charts</li> <li>• Choose an appropriate scale for the y axis</li> <li>• Answer questions of findings presented in graph form</li> <li>• Identify simple tests to carry out to identify differences and similarities</li> <li>• Identify the variable to keep the same (control)</li> <li>• Identify which variables cannot be controlled</li> </ul>	<p>Yr 5</p> <ul style="list-style-type: none"> <li>• Identify observable differences and similarities to observe or measure</li> <li>• Observe changes over time</li> <li>• Decide on sample size</li> <li>• Decide how long to make observations and how often</li> <li>• Present findings in appropriate ways including in tables, graphs, line graphs and text</li> <li>• Read findings presented in line graphs</li> </ul> <p>Yr 6</p> <ul style="list-style-type: none"> <li>• Write a clear question for a comparative test</li> <li>• Identify properties of features to compare</li> <li>• Select suitable ranges and intervals to secure enough evidence</li> <li>• Present evidence for findings in appropriate forms</li> <li>• Calculate and present average readings</li> <li>• Interpret data from a range of sources</li> <li>• Recognise when to look for patterns to answer a question</li> </ul>

<p><u>Living Things and their Habitats</u></p> <p>The Natural World ELG</p>	<ul style="list-style-type: none"> <li>• Explore the natural world around them, making observations and drawing pictures of animals and plants</li> <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 and changing states of matter</li> </ul>	<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 (Y2)</li> <li>• Identify and name a variety of plants and animals in their habitats, including micro habitats (Y2)</li> <li>• Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify different sources of food (Y2)</li> </ul> <p><u>Seasonal Change (Outdoor Learning)</u> Observe changes across the four seasons (Y1) Observe and describe the weather associated with the seasons and how day length varies (Y1)</p>	<ul style="list-style-type: none"> <li>• Know how to group living things</li> <li>• Use classification keys to identify and name living things</li> <li>• Recognise that environments can change</li> </ul>	<p><u>Living things and Their habitats</u></p> <ul style="list-style-type: none"> <li>• Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</li> <li>• Give reasons for classifying plants and animals based on specific characteristics.</li> </ul> <p><u>Evolution and adaptation</u></p> <ul style="list-style-type: none"> <li>• Recognise 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>• Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>• Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</li> </ul>
<p><u>Animals, including humans</u></p>	<ul style="list-style-type: none"> <li>• Know the classes of animals</li> <li>• Know that humans grow</li> <li>• Know what humans need to keep healthy</li> <li>• Name the external parts of the human body</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name a variety of common animals including</li> <li>• fish, amphibians, reptiles, birds and mammals (Y1)</li> <li>• Identify and name a variety of common animals that are</li> <li>• carnivores, herbivores and omnivores (Y1)</li> <li>• Describe and compare the structure of a variety of common animals (Y1)</li> <li>• Identify, name and label the basic parts of the human body and say which part is associated with which sense (Y1)</li> <li>• Notice that animals, including humans have offspring which grow into adults (Y2)</li> <li>• Find out and describe the basic needs of animals, including humans, for survival (water, food and air) (Y2)</li> <li>• Describe the importance for humans of exercise, eating the right number of different types of food, and hygiene (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Identify that animals, including humans, need the right types and amount of nutrients, and 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> </ul>	<p><u>Life cycles and living things</u></p> <ul style="list-style-type: none"> <li>• Describe the life cycles of mammal, amphibian, insect and bird</li> <li>• Describe the life process of reproduction in plants and animals</li> </ul> <p><u>Animals including humans</u> <u>Changes to old age</u></p> <ul style="list-style-type: none"> <li>• Describe the changes as humans develop to old age.</li> </ul> <p><u>Human Body</u></p> <ul style="list-style-type: none"> <li>• Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>• Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>• Describe the ways in which nutrients and water are transported within animals, including humans.</li> </ul>

<u>Plants</u>	<ul style="list-style-type: none"> <li>• Know what plants need to grow</li> <li>• Know about plant lifecycles</li> <li>• Know why we grow plants</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees (Y1)</li> <li>• Identify and describe the basic structure of a variety of common flowering plants, including trees (Y1)</li> <li>• Observe and describe how seeds and bulbs grow into mature plants (Y2)</li> <li>• Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy (Y2)</li> </ul>	<ul style="list-style-type: none"> <li>• Identify and describe function of parts of a flowering plant</li> <li>• Requirements of plants for life and growth</li> <li>• Investigate the ways water is transported</li> <li>• Life cycle of flowering plants</li> </ul>	
<u>Materials</u>	<ul style="list-style-type: none"> <li>• Name different materials</li> <li>• Describe the properties of materials</li> <li>• Know the uses that properties make each material suitable for</li> </ul>	<ul style="list-style-type: none"> <li>• Distinguish between an object and material (Y1)</li> <li>• Identify and name a variety of everyday materials (Y1)</li> <li>• Describe the simple properties of everyday materials (Y1)</li> <li>• Compare and group together a variety of everyday materials on the basis of their simple physical properties (Y1)</li> <li>• Identify and compare the suitability of a variety of different materials, including wood, metal, plastic, glass, brick, rubber, rock, paper and cardboard (Y2)</li> <li>• Find out how the shape of solid objects made from some materials can be changed by squashing, bending, twisting and stretching (Y2)</li> </ul>	<u>States of matter</u> Compare and group a range of solids, liquids and gases Observe that materials change when heated or cooled Understand the processes of evaporation and condensation Know about and be able to explain the water cycle	<u>Materials</u> <u>Properties of materials</u> <ul style="list-style-type: none"> <li>• 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>• Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> </ul> <u>Materials:</u> <u>Reversible and irreversible changes</u> <ul style="list-style-type: none"> <li>• Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>• Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>• Demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>• 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.</li> </ul>

<u>Light</u>		<ul style="list-style-type: none"> <li>•</li> </ul>	<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 your eyes</li> <li>• Recognise that shadows are formed when the light from a light source is blocked by a solid object</li> <li>• Find patterns in the way that the size of shadows changes</li> </ul>	<ul style="list-style-type: none"> <li>• Recognise that light appears to travel in straight lines</li> <li>• 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</li> <li>• 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</li> <li>• Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</li> </ul>
<u>Electricity</u>			<ul style="list-style-type: none"> <li>• Identify common appliances that run on electricity</li> <li>• Construct a simple series electrical circuit</li> <li>• Identify and name its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>• Identify if a lamp will light based on whether the circuit is a complete loop</li> <li>• Recognise that a switch opens and closes a circuit</li> <li>• Recognise some common conductors and insulators and associate metals with being good conductors</li> </ul>	<ul style="list-style-type: none"> <li>• Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>• 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</li> <li>• Use recognised symbols when representing a simple circuit in a diagram.</li> </ul>
<u>Forces</u>			<ul style="list-style-type: none"> <li>• Compare how things move on different surfaces</li> <li>• Describe magnets as having 2 poles</li> <li>• Identify magnetic materials</li> <li>• Use the terms 'attract and 'repel'</li> </ul>	<ul style="list-style-type: none"> <li>• Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>• Identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>• Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</li> </ul>
<u>Rocks and soil</u>			<ul style="list-style-type: none"> <li>• Compare and group rocks</li> <li>• Describe how fossils are formed</li> <li>• Formation of soil</li> </ul>	

<u>Earth and Space</u>				<ul style="list-style-type: none"> <li>• Describe the movement of the Earth, and other planets, relative to the Sun in the solar system</li> <li>• Describe the movement of the Moon relative to the Earth</li> <li>• Describe the Sun, Earth and Moon as approximately spherical bodies</li> <li>• Use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky.</li> </ul>
<u>Sound</u>			<ul style="list-style-type: none"> <li>• Identify how sounds are made</li> <li>• Understand pitch, volume and strength of vibrations</li> <li>• Understand sounds become fainter as distance increases</li> </ul>	