



# Science Skills Progression Map



**Subject: Science**

Skills Coverage /development	EYFS	Y1	Y2	Y3	Y4	Skills all children leave lower school with
<b>Animals including humans</b>	<p><i>Observing changes in the environment</i></p> <p><i>Show care for living things</i></p> <p><i>Verbally discuss different animals and parts of a human</i></p>	<p><i>Using their observations to compare and contrast</i></p> <p>animals at first hand or through videos and photographs</p> <p>describing how they identify and group them</p> <p>grouping animals according to what they eat</p> <p>using their senses to compare different textures, sounds and smells.</p>	<p><i>Observing, through video or first-hand observation and measurement, how different animals, including humans, grow</i></p> <p>asking questions about what things animals need for survival and what humans need to stay healthy</p> <p>suggesting ways to find answers to their questions.</p>	<p><i>Identifying and grouping animals with and without skeletons and observing and comparing their movement</i></p> <p>exploring ideas about what would happen if humans did not have skeletons.</p> <p>compare and contrast the diets of different animals (including their pets) and decide ways of grouping them according to what they eat.</p> <p>research different food groups and how they keep us healthy and design meals based on what they find out.</p>	<p><i>Comparing the teeth of carnivores and herbivores, and suggesting reasons for differences</i></p> <p>finding out what damages teeth and how to look after them.</p> <p>draw and discuss their ideas about the digestive system and compare them with models or images.</p>	<p>Identify the differences between animals and humans.</p> <p>Food- compare and contrast diets and what is need to survive and stay healthy</p> <p>Skeletons- understand the terminology and the uses of a skeleton</p> <p>Nutrition- Animals hunt for their food</p> <p>Plants produce food</p> <p>Humans grow/ source their food</p>
<b>Plants and seasons</b>	<p><i>Label parts of a plant (stem, roots, leaf, flower, petal)</i></p> <p><i>observe seasonal changes</i></p>	<p><i>Observing closely, perhaps using magnifying glasses,</i></p> <p>and comparing and contrasting familiar plants</p> <p>describing how they identify</p>	<p><i>Observing and recording, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb,</i></p> <p>observing</p>	<p><i>Comparing the effect of different factors on plant growth, for example, the amount of light, the amount of fertilizer</i></p> <p>discovering how seeds</p>		<p>Know the different parts and functions of plants.</p> <p>Understand the lifecycle of a plant.</p> <p>Conduct experiments to identify what is required for a plant to grow.</p>

	<p><i>grow plants and understand how to look after them</i></p>	<p>and group them</p> <p>draw diagrams showing the parts of different plants including trees.</p> <p>making tables and charts about the weather</p> <p>making displays of what happens in the world around them, including day length, as the seasons change.</p> <p>keep records of how plants have changed over time, for example the leaves falling off trees and buds opening;</p> <p>compare and contrast what they have found out about different plants.</p>	<p>similar plants at different stages of growth</p> <p>setting up a comparative test to show that plants need light and water to stay healthy.</p>	<p>are formed by observing the different stages of plant life cycles over a period of time</p> <p>looking for patterns in the structure of fruits that relate to how the seeds are dispersed.</p> <p>observe how water is transported in plants, for example, by putting cut, white carnations into coloured water and observing how water travels up the stem to the flowers.</p>		
<p><b>Living things and their habitats</b></p>	<p><i>Finding different mini-beasts within habitats.</i></p>		<p><i>Sorting and classifying things according to whether they are living, dead or were never alive</i></p> <p>recording their findings using charts.</p> <p>describe how they decided where to place things</p> <p>exploring questions for</p>		<p><i>Using and making simple guides or keys to explore and identify local plants and animals</i></p> <p>making a guide to local living things</p> <p>raising and answering questions based on their observations of animals and what they have found out about other animals that they have researched.</p>	<p>Research living things-</p> <p>Classify whether living/dead/never lived</p> <p>Habitats- identifying that the habitat for a creature/ plant needs to provide the things required to stay alive.</p>

			<p>example: 'Is a flame alive? Is a deciduous tree dead in winter?' and talk about ways of answering their questions.</p> <p>construct a simple food chain that includes humans (e.g. grass, cow, human).</p> <p>describe the conditions in different habitats and micro-habitats (under log, on stony path, under bushes) and find out how the conditions affect the number and type(s) of plants and animals that live there.</p>			
<b>Everyday Materials</b>		<p>Identify and name a variety of materials including wood, plastic, glass etc</p> <p>Categorise materials based on their properties</p> <p>Performing simple tests to explore questions, for example: 'What is the best material for an umbrella? ...for lining a dog basket? ...for curtains? ...for a bookshelf? ...for a gymnast's leotard?'</p>	<p>Comparing the uses of everyday materials in and around the school with materials found in other places (at home, the journey to school, on visits, and in stories, rhymes and songs)</p> <p>Observing closely, identifying and classifying the uses of different materials, and recording their observations.</p> <p>Investigate materials can change when applying</p>			<p>Identify properties of materials and reversible irreversible changes.</p> <p>Performing simple tests to explore questions.</p>

			forces-squash, twist, stretch			
<b>Rocks</b>				<p>Observing rocks, including those used in buildings, and exploring how and why they might have changed over time;</p> <p>Using a hand lens or microscope to help them to identify and classify rocks according to whether they have grains or crystals, and whether they have fossils in them.</p> <p>Research and discuss the different kinds of rock formation and living things whose fossils are found in sedimentary rock and explore how fossils are formed.</p> <p>Explore different soils and identify similarities and differences between them</p> <p>Investigate what happens when rocks are rubbed together or what changes occur when they are in water.</p> <p>Raise and answer questions about the way soils are formed.</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>

<b>Light</b>	Observing light and dark			<p>Investigate we need light to see and darkness is the absence of light.</p> <p>Reflection-sources or conductors?</p> <p>Sunlight is dangerous</p> <p>Looking for patterns in what happens to shadows when the light source moves or the distance between the light source and the object changes.</p>		<p>Know that they need light in order to see things and that dark is the absence of light</p> <p>Identify that light is reflected from surfaces</p> <p>Know that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Know that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Investigate patterns in the way that the size of shadows change</p>
<b>Forces and Magnets</b>				<p>Comparing how different things move and grouping them</p> <p>Raising questions and carrying out tests to find out how far things move on different surfaces</p> <p>Gathering and recording data to find answers their questions</p> <p>Exploring the strengths of different magnets and finding a fair way to compare them</p> <p>Sorting materials into those that are magnetic and those that are not</p>		<p>Observe and identify how things move on different surfaces</p> <p>Know that some forces need contact between 2 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>Conduct investigations 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</p> <p>Describe magnets as having 2 poles</p> <p>Predict whether 2 magnets will attract or repel each</p>

				<p>Looking for patterns in the way that magnets behave in relation to each other and what might affect this, for example, the strength of the magnet or which pole faces another</p> <p>Identifying how these properties make magnets useful in everyday items and suggesting creative uses for different magnets.</p>		<p>other, depending on which pole</p>
<b>States of matter</b>					<p>Grouping and classifying a variety of different materials</p> <p>Exploring the effect of temperature on substances such as chocolate, butter, cream (for example, to make food such as chocolate crispy cakes and ice-cream for a party).</p> <p>Observe and record evaporation over a period of time, for example, a puddle in the playground or washing on a line, and investigate the effect of temperature on washing drying or snowmen melting.</p> <p>Labelling the water cycle process</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>
<b>Sound</b>					<p>Finding patterns in the sounds that are made by different objects such as saucepan lids of</p>	<p>Identify how sounds are made, associating some of</p>

					<p>different sizes or elastic bands of different thicknesses.</p> <p>Recognise vibrations from sounds travel through a medium to the ear.</p> <p>Investigate which provides the best insulation against sound - make earmuffs from a variety of different materials to test .</p> <p>Make and play their own instruments by using what they have found out about pitch and volume.</p>	<p>them with something vibrating</p> <p>Recognise that vibrations from sounds travel through a medium to the ear</p> <p>Identify patterns between the pitch of a sound and features of the object that produced it</p> <p>Identify patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>Investigate that sounds get fainter as the distance from the sound source increases</p>
<b>Electricity</b>					<p>Identify appliances that use electricity</p> <p>Construct a simple circuit</p> <p>When using extra equipment, Observing patterns, for example, that bulbs get brighter if more cells are added,</p> <p>Investigate conductors of electricity, that metals tend to be conductors and that some materials can and some cannot be used to connect across a gap in a circuit.</p>	<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>Investigate electrical circuits and 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,</p>

						and associate metals with being good conductors
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*Learn, Believe, Achieve*