





# Science Progression Map

	<p>environment and all living things. Know how to look after plants so that they will grow. Observe and draw plants.</p>	<p>Name body parts of humans and animals. Observe and identify minibeasts and their habitats.</p>	<p>properties Describe how different objects look and feel.</p>	<p>of each season. To observe changes in trees and plants as the seasons progress.</p>									
<p>KS1 readiness objectives</p>	<p>To know what a plant is To know what a flower is To know where you see plants To describe different plants and flowers</p>	<p>To know what an animal is To recognise and name a variety of different animals To know the names of different body parts of humans and animals they have experience of</p>	<p>To recognise that different everyday objects are made from different materials To describe how different objects look and feel</p>	<p>To know about different types of weather To observe changes in trees and plants as the seasons progress</p>									
<p>Working Scientifically</p>	<p>Explore the natural world around them. Describe what they see, hear and feel whilst outside.</p>												



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	<p>Talk about similarities and differences To feel confident to answer simple questions about observable properties of objects and people, animals and plants around them To compare objects in their environment and talk about similarities and differences To ask questions about the world around them, and seek to find their own answers</p>												
Year 1													
Scientific Knowledge	<p>Identify and name a variety of common wild and garden plants, including deciduous &amp; evergreen trees. Identify and describe the basic structure of a variety of common flowering plants.</p>	<p>Identify and name a variety of common animals. Identify and name a range of carnivores, herbivores and omnivores. Describe and compare the structure of a variety of common animals. Identify, name, draw and label basic parts of the human body. Be able to say which part of the boy is associated with each sense. Use the local environment</p>	<p>Distinguish between an object and the material from which it is made. Identify and name a variety of every day materials, as well as describe the simple physical properties. Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Observe the changes across the four seasons.  Observe and describe the weather associated with the seasons and how day length varies.</p>									





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	<p>how to identify and group different plants.</p> <p>Drawing diagrams which show the different parts of plants.</p> <p>Understand and show how to keep records of how plants have changed over time and compare and contrast what they have found out.</p>	<p>sounds and smells.</p>											
Area of Focus	Plants	Animals, including humans	Materials	Seasonal changes	Living things and their habitats	Rocks	Light	Forces and Magnets	States of Matter	Sound	Electricity	Earth and Space	Evolution & inheritance
Year 2													
Scientific Knowledge	<p>Using the local environment to observe how different plants grow. Begin to have an understanding of germination, growth and survival, as</p>	<p>Understand that animals have offspring that grow into adults. Focusing on questions that help to recognise growth.</p> <p>Find out and describe the</p>	<p>Building on their knowledge from year 1, they are now looking into uses of everyday materials. Identify and compare suitability of variety</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</p>								



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	<p>well as reproduction and growth in plants.</p>	<p>basic needs of animals (including humans) for survival.</p> <p>Understanding and describing the importance for humans to exercise, eat healthily and hygiene.</p>	<p>of everyday materials. Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>		<p>live in habitats to which they are suited. Describe how different habitats provide for the basic needs of different kinds of animals and plants.</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.</p>								
<p>Scientific Skills</p>	<p>Continue to build their</p>	<p>Observational skills</p>	<p>Comparing uses of</p>		<p>Sorting and classifying -</p>								



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	<p>knowledge of observation. Recording with more accuracy, the growth of a variety of plants as they change from a seed or bulb. Understanding how to set up a comparative test to show that plants need light and water to stay healthy.</p>	<p>through video or first-hand observations. Using measure to identify growth in animals and humans.</p> <p>Asking questions about what things animals need for survival, and what humans need to stay healthy.</p> <p>Begin to suggest ways to find answers to their questions.</p>	<p>everyday materials in and around school, with those that are found in other places (home, journey to school, outdoors etc)</p> <p>Observing closely - building on the skills of identifying and classifying of different materials.</p> <p>Recording their observations.</p>		<p>whether they are alive, dead, or never alive. Recording findings in a chart.</p> <p>Describe and explore questions.</p> <p>Construct a simple food chain, including humans. Describing the conditions in different habitats and micro-habitats.</p>								
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Year 3													
Scientific Knowledge	<p>Identify and describe the functions of different parts of flowering plants. Exploring the requirements of plants for</p>	<p>Building on the knowledge that animals, including humans, need the right types and amount of nutrition.</p>				<p>Compare and group together different kinds of rocks on the basis of their appearance and</p>	<p>Recognise they need light in order to see things and that dark is the absence of light.</p>	<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need</p>					



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	<p>life and growth, and how this varies from plant to plant. Commence their investigative skills looking at how water is transported within plants. Exploring the part that flowers play in the life cycle of flowering plants.</p>	<p>Understand that they cannot make their own food and that 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>simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rocks.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and there are ways to protect eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in the way that the size of shadows change.</p>	<p>contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other. 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</p>					
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								as having 2 poles, and predict whether they will attract or repel each other.						
Scientific Skills	Comparing the effect of different factors on plant growth. Looking for patterns in the structure of fruits that relate to how the seeds are dispersed. Building their observational skills by identifying how water is transported in plants.	Identifying and grouping animals with and without skeletons. Observing and comparing their movement, exploring ideas if what would happen if humans didn't have skeletons. Compare and contrast diets of different animals - and decide of different ways to group them, according to what they eat.  Begin to research different food groups and identify				Observing rocks, including those in buildings and gravestones.  Identifying why they might have changed over time.  Research and discuss the different kinds of living things whose fossils are found in sedimentary rock.  Explore how fossils are formed.	Looking for patterns in what happens to shadows when a light source moves or the distance between the light source and the object changes.	Compare how things move, and group them.  Carry out tests to find out how surfaces can change how far things travel.  Gather and record data to find answers to questions.  Looking for patterns and what might affect these patterns.  Identify how these						



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		how this keeps us healthy - build on this by designing meals based on what they have learned.				Explore different soils and identify similarities and differences. Raise and answer questions about the way soils are formed.		properties make magnets useful in everyday items.					
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Year 4													
Scientific Knowledge		<p>Describing the different functions of the basic parts of the digestive system in humans.</p> <p>Identify different types of teeth in humans and their simple functions.</p> <p>Constructing and interpreting a variety of different food chains, understanding what a</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 this</p>				<p>Compare and group materials together, according to whether they are solids, liquids or gases. Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in</p>	<p>Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Finding patterns between the pitch of a sound and features of</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>Identify whether or not a lamp will light in a simple series</p>		



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		producer, predator and prey are.			sometimes poses dangers to living things.				degrees Celsius (°C)  Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.	the object that produced it  Finding patterns between the volume of a sound and the strength of the vibrations that produced it.  Recognise that sounds get fainter as the distance from the sound source increases.	circuit, based on whether or not the lamp is part of a complete loop with a battery.  Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.  Recognise some common conductors and insulators, and associate metals with being good conductors.		
Scientific Skills		Using their skills to compare the teeth of carnivores and herbivores. Begin to suggest reasons for			Using and making simple guide or keys to explore and identify local plants and animals.				Grouping and classifying a variety of different materials; exploring the effect of	Finding patterns in the sounds that are made by different objects such as saucepan lids of	Observing patterns, for example, that bulbs get brighter if more cells are added, that metals tend to be conductors		





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<p>Scientific Knowledge</p>		<p>Building on their knowledge from Year 2 about growth, by describing the changes as humans develop to old age.</p>	<p>Children are now looking into the properties and changes of materials, so extending their knowledge further by comparing and grouping together everyday materials on the basis of their properties.</p> <p>Understand 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</p>		<p>Describing 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.</p>			<p>Explain that unsupported objects fall towards Earth because of gravity.</p> <p>Identify the effects of air resistance, water resistance and friction between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p>				<p>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>	
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			<p>mixtures might be separated, through filtering, sieving and evaporating.</p> <p>Using evidence from comparative and fair tests give reasons for uses of materials.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible.</p> <p>Explain that some changes result in formation of new materials, and this kind of change is not reversible.</p>									
Scientific Skills		Using cross-curricular mathematical & history skills to draw	Carrying out tests to answer questions.		Building on their skills of observing and comparing			Exploring falling paper cones or cup-cake				Comparing the time of day at different places on the





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<p>Scientific Knowledge</p>		<p>Building on knowledge from year 3 about nutrients - recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function and the ways in which nutrients and water are transported within animals, including humans.</p> <p>Identify and name the main parts of the circulatory system, and describe the functions of the heart, blood vessels and blood.</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. Building on their knowledge gained in Year 4 give reasons for classifying plants and animals based on specific characteristics</p>		<p>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 our or reflect light into the eye.</p> <p>Explain that we see things because light travels from light sources to our eyes, or light sources to objects and then to our eyes.</p> <p>Building in on their knowledge</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>		<p>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>
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							from year 3 to use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.						
Scientific Skills		Exploring the work of scientists and scientific research about the relationship between diet, exercise, drugs, lifestyle and health.			Using classification systems and keys to identify some animals and plants in the immediate environment.  Use their research skills to find out about unfamiliar animals and plants from a broad range of other habitats and decide where they belong in the classification system.		Using their knowledge from year 3, deciding where to place rear-view mirrors on cars, designing and making a periscope.  Investigate the relationship between light sources, objects and shadows				Systematically identifying the effect of changing one component at a time in a circuit; designing and making a set of traffic lights, a burglar alarm or some other useful circuit.  Building on their skills from year 4 - including constructing simple		Observing and raising questions about local animals and how they are adapted to their environment ; comparing how some living things are adapted to survive in extreme conditions, for example, cactuses, penguins and camels.  Analyse the advantages and disadvantages



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							but using shadow puppets.  Extend experiences by looking at a range of phenomena including rainbows, colours on soap bubbles etc.					circuits and represent a simple circuit using recognised symbols.		es of specific adaptations, such as being on two feet rather than four, having a long or a short beak, having gills or lungs, tendrils on climbing plants, brightly coloured and scented flowers.
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