

## Skills Progression for Science

Skills Progression	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	GD
<b>Working Scientifically- Planning</b>	Children will talk about their ideas, and will choose the resources they need for a chosen activity.	<p>Ask questions based on exploration of the world around them.</p> <p>Respond to prompts by making some suggestions about how to find an answer.</p>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Use simple secondary sources to find answers.</p> <p>Talk about similarities and differences.</p>	<p>Respond to suggestions of how to answer questions about the world around them and ask effective and relevant questions. Recognise when and how secondary sources should be used.</p> <p>Discuss the most appropriate type of scientific enquiry to use to answer questions. Recognise that questions can be answered in different ways</p>	<p>Raise own relevant questions and use different types of scientific enquiry to answer questions.</p> <p>Recognise when and how secondary sources should be used.</p> <p>Make decisions about the most appropriate type of scientific enquiry to answer questions. Recognise and identify the factors needed to make a test 'fair'. Identify the factors in a simple 'fair' test that we will measure (variables) and keep the same (control).</p>	<p>Explore ideas and raise a range of relevant questions.</p> <p>Recognise which secondary sources are most useful and begin to recognise the difference between fact and opinion. Select and plan the most appropriate type of scientific enquiry for answering a scientific question. Decide which variables to measure change and keep the same. Demonstrate how to change one factor (variable) whilst keeping others the same (control). Identify and use an appropriate unit to measure variables effectively.</p>	<p>Explore ideas and raise a range of different kinds of relevant questions based on accurate scientific principles.</p> <p>Recognise and use the secondary sources that are most useful separating opinion from fact.</p> <p>Select and plan accurately the most appropriate type of scientific enquiry for answering scientific questions. Decide which variables to measure change and keep the same. Demonstrate how to change one factor (variable) whilst keeping others the same (control). Identify and use an appropriate unit to measure variables effectively</p>	<p>Use simple models to describe scientific ideas.</p> <p>Explain how to construct a complex test.</p> <p>Plan different types of enquiries to answer questions and put measures in place to ensure accuracy and reliability. Select the most suitable variables to be investigated. Identify some variables that cannot be controlled or explain.</p> <p>Recognise some situations in which a fair test cannot be carried out.</p>
<b>Working Scientifically - Observation and recording</b>	<p>Looks closely and similarities, patterns and change.</p> <p>Children answer 'how' and 'why' questions</p> <p>They are familiar with some basic scientific concepts such as floating, sinking, experimentation.</p>	<p>Respond to prompts by making some suggestions about how to make an observation.</p> <p>Use senses and simple equipment to make observations.</p> <p>Talk about what happens and record using words and pictures</p> <p>Begin to record data in simple templates.</p>	<p>Carry out instructions for a simple investigation.</p> <p>Talk about and record what is seen and observed</p> <p>Take accurate measurements using simple equipment, e.g. cm and scales with one interval.</p>	<p>Describe what happens when taking part in simple investigations/fair tests.</p> <p>Begin to make decisions about what to observe, how long to observe for?</p> <p>Read simple scales and take accurate measurements using standard units,</p>	<p>Recognise when to set up simple practical enquires, comparative and fair tests.</p> <p>Make decisions about what to observe, how long to observe for, and the type of equipment needed.</p> <p>Make systematic and accurate observations and measurements.</p>	<p>Recognise when and how to set up comparative and fair tests and begin to explain which variables need to be controlled and why. Make decisions about what to observe, what measurements to use and how long to measure them for.</p> <p>Choose appropriate equipment to make measurements, using standard</p>	<p>Recognise when and how to set up comparative and fair tests and clearly explain which variables need to be controlled and why. Make independent and well-founded decisions about what to observe, what measurements to use and how long to measure them for. Choose the most appropriate equipment (with a variety of intervals and units) to make measurements and</p>	<p>Recognise when and how to set up comparative and fair tests and clearly explain which variables need to be controlled and why. Record observations and measurements systematically.</p> <p>Choose the most efficient units of measurement and convert as and when appropriate.</p>

			<p>Begin to identify and classify data and information.</p> <p>Record data using simple charts, tables and block graphs.</p>	<p>e.g. Thermometers, graduated beakers and data loggers.</p> <p>Talk about criteria for grouping, sorting and classifying, use simple keys.</p> <p>Record data using a range of charts, tables and block graphs and labelled diagrams.</p>	<p>Use a range of measuring equipment appropriately including thermometers, data loggers etc. Gather, record, classify and present data in a variety of ways to help answer questions. Use and construct increasingly complex tables, line graphs and keys to record findings.</p>	<p>units of measure and simple scales accurately and with precision.</p> <p>Gather, record, classify and present a range of data in different ways.</p> <p>Record data and results using scientific diagrams and labels, classification keys, tables, and bar and line graphs</p>	<p>explain how to use accurately and with precision. Gather, record, classify and present data in a wide range of ways.</p> <p>Use a wide range of methods to record data including line graphs, scientific diagrams, classification keys, scatter, bar and line graphs etc.</p>	<p>Present comparative data in a range of formats including, pie charts, line graphs and scatter grams etc. Label diagrams using appropriate scientific symbols, e.g. circuit diagrams in parallel.</p>
<p><b>Working Scientifically - Conclusions</b></p>	<p>Children know about similarities and differences in relation to objects, materials and living things.</p>	<p>Begin to use simple features to</p> <p>compare objects, materials and living things. Identify what has changed when observing objects, living things or events.</p> <p>Talk in simple terms about what might happen based on own experiences.</p>	<p>Talk about describe and sort simple</p> <p>similarities and differences, noting patterns and relationships. Record and communicate findings in a range of ways using simple scientific language.</p> <p>Talk about what has been found out and how it was discovered.</p> <p>Talk in simple scientific terms about what might happen and why? (prediction)</p>	<p>Begin to look for patterns and decide</p> <p>what data to collect to identify them.</p> <p>Talk about data collected from observations and measurements, using drawings, labelled diagrams, notes, simple tables and keys, standard units and simple equipment including data loggers.</p> <p>Begin to draw and express some conclusions, by looking at changes, patterns, similarities and differences in data. Begin to identify new questions arising from data, make new predictions for new values within or beyond the data collected.</p>	<p>Look for patterns and decide on the</p> <p>range of data needed to identify them.</p> <p>Collect data from observations and measurements, using notes, simple tables and standard units, using drawings, labelled diagrams, keys, bar charts and tables.</p> <p>Identify changes, patterns, similarities and differences in data in order to draw conclusions.</p> <p>Suggest improvements and identify new questions arising from data, make new predictions for new values within or beyond the data collected. Report on findings from enquires including oral and written explanations.</p>	<p>Decide how to record data from a</p> <p>choice of familiar approaches.</p> <p>Use relevant scientific language to communicate findings and justify scientific ideas.</p> <p>Look for different relationships in data and begin to identify evidence that refutes or supports ideas.</p> <p>Make practical suggestions about how working methods could be improved.</p> <p>Use results to identify when further tests and observations might be needed.</p> <p>Make general statements such as: 'the hotter the water, the faster the sugar dissolves'</p>	<p>Decide in detail how to record data</p> <p>accurately from a choice of familiar approaches. Use relevant scientific language and illustrations to discuss, communicate and justify findings and scientific ideas.</p> <p>Look for a range of different relationships in data and begin to identify evidence that refutes or supports ideas.</p> <p>Identify when tests need to be repeated in order to attain reliable results.</p> <p>Use test results to make predictions and set up further comparative and fair tests.</p> <p>Make increasingly measured general statements such as: 'As the</p>	<p>Decide in detail how to record data</p> <p>accurately from a choice of familiar approaches. Use relevant scientific language and illustrations to discuss, communicate and justify findings and scientific ideas.</p> <p>Look for a range of different relationships in data and begin to identify evidence that refutes or supports ideas.</p> <p>Identify when tests need to be repeated in order to attain reliable results.</p> <p>Use test results to make predictions and set up further comparative and fair tests.</p> <p>Make increasingly measured general statements such as: 'As the</p>

							temperature increases the mass of the sugar which can be dissolved increases.'	temperature increases the mass of the sugar which can be dissolved increases.'
<b>Plants</b>	<p>Children know about similarities and differences in relation to living things.</p> <p>Children make observations of plants and explain why some things occur and talk about changes.</p> <p>Children know that the environment and living things are influenced by human activity.</p>	<p>Use senses to explore and talk about plants. Describe what a plant looks like.</p> <p>Identify and name a variety of common wild and garden plants.</p> <p>Identify, name and describe the basic structure of common plants, including garden plants and trees, both deciduous and evergreen.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Identify and describe the basic structure of a flowering plant including roots, stem/trunk, leaves and flowers.</p> <p>Find out about and describe what plants need to grow and stay healthy, including, water, light and temperature.</p>	<p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Identify and describe the functions of different parts of flowering plants, including roots, stem/trunk, leaves and flowers.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how these vary from plant to plant and the way in which water is transported in plants.</p>	<p>Explore in detail the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> <p>Identify and describe detail the functions of different parts of flowering plants, including roots, stem/trunk, leaves and flowers.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil and room to grow) and how these vary from plant to plant and the way in which water is transported in plants. (NB Yr3 statements)</p>	<p>Describe using scientific vocabulary the key functions of a plant, including reproduction.</p>	<p>Describe the features and function of the stigma, root and leaf.</p> <p>Describe the process of photosynthesis.</p>	<p>Describe using accurate scientific vocabulary the features of a plant, such as the function of a stamen.</p> <p>Describe and explain the main functions of a plant and its organs.</p>
<b>Animals, including humans</b>	<p>Children know about similarities and differences in relation to living things.</p> <p>Children make observations of animals and explain why some things occur and talk about changes.</p>	<p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Name and talk about their members of</p>	<p>Draw and label the main parts of the human body and link body parts to the associated senses.</p> <p>Name and talk about the young of humans and other animals.</p>	<p>Identify and describe simple features of human and other animal skeletons, and how muscles are used for support, protection and movement.</p>	<p>Name and describe key features of the human body, including organs, skeleton and muscles.</p> <p>Talk in simple terms about how animals grow &amp; reproduce.</p>	<p>Describe scientifically the function of the main organs in the body, including muscles, the skeleton and their main functions.</p>	<p>Identify and name the main parts of the human circulatory system, and explain the functions of the heart, blood vessels and blood.</p>	<p>Explain how and why our muscles use oxygen.</p> <p>Explain in detail the impact of diet, exercise, drugs and lifestyle on the way the body functions.</p>

	Looks closely and similarities, patterns and change.	<p>immediate and extended family.</p> <p>Identify, name and describe a variety of common animals including fish, amphibians, reptiles, birds and mammals, carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of common animals such as birds, fish, reptiles and pets</p> <p>Describe what is needed to healthy and clean.</p>	<p>Identify and name a variety of common animals such as amphibians, mammals and invertebrates.</p> <p>Find out about and describe the basic needs of animals including humans for survival (water, food and air)</p> <p>Describe the importance for humans of exercise, a balanced diet and hygiene, including how to look after teeth.</p>	<p>Describe in simple terms the changes that take place as animals grow.</p> <p>Identify that animals including humans need the right types and amount of nutrition and that they cannot make their own food, that they need nutrition from what they eat.</p> <p>Describe the link between an animal's diet and their type of teeth.</p>	<p>Describe the simple functions of the human digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p>	<p>Describe the changes that take place as humans develop from birth to old age. Learn about the changes that take place during puberty.</p> <p>Use scientific terms to describe the key features of a healthy diet, including main food groups.</p> <p>Draw a timeline to indicate stages in the growth and development of humans.</p>	<p>Recognise that normally the offspring of a living thing will not be identical to its parents.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the functions of the body</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p>	<p>Name all the main food groups and explain how they are used by the body.</p>
<p>Everyday Materials</p> <p>Uses of everyday Materials</p> <p>Properties and changes of materials</p>	<p>Children know the properties of some materials and can suggest some of the purposes they are used for.</p> <p>Children understand some basic scientific concepts such as floating, sinking and experimentation.</p> <p>Children know about similarities and differences in relation to materials.</p>	<p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name some everyday materials.</p> <p>Use senses to explore a wide range of materials.</p>	<p>Identify and name a variety of everyday materials, including wood, plastics, glass, metal, water and rock.</p> <p>Describe the physical properties of a range of everyday materials.</p> <p>Identify and compare the suitability of a range of everyday materials based on simple physical properties, e.g. smooth, soft, hard...</p> <p>Talk about what common materials are used for, e.g. glass for windows.</p>	<p>Identify and compare the uses of a range of common everyday materials and their properties.</p> <p>Compare and group different kinds of rocks based on appearance and simple physical properties.</p> <p>Compare how objects move on different surfaces. Talk about materials that are magnetic.</p> <p>Recognise that soils are made from rocks and organic matter.</p>	<p>Use knowledge and understanding of materials to sort and group materials. Identify and describe the features of sub-groups within a material with the same properties, e.g. oak, beech, birch etc.</p> <p>Describe why materials are used for different purposes, e.g. glass for windows.</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases.</p>	<p>Identify and give reasons why materials are used for a specific task or purpose.</p> <p>Compare and group everyday materials based on evidence from comparative and fair tests, based on hardness, solubility, transparency, conductivity (electrical and thermal) and response to magnets.</p>	<p>Explain how the differences between the properties of different materials can be used to classify substances.</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>Describe in detail properties of metals, e.g. electrical conductivity. Use my growing knowledge to compare the similarities and differences between a wide range of materials and their properties, including metals and other solids</p> <p>Give reasons for the magnetic behaviour of a range of materials.</p>

<p><b>Seasonal changes</b></p>	<p>Looks closely and similarities, patterns and change.</p> <p>Children know about similarities and differences in relation to living things.</p> <p>Children make observations of plants and explain why some things occur and talk about changes.</p>	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>						
<p><b>Living things and their habitats</b></p>	<p>Looks closely and similarities, patterns and change.</p> <p>Children know about similarities and differences in relation to living things</p> <p>Children make observations of animals and explain why some things occur and talk about changes.</p>		<p>Pupils should be taught to:</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 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.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and I can identify and name different sources of food.</p>		<p>Pupils should be taught to:</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 that this can sometimes pose dangers to living things.</p>	<p>Pupils should be taught to:</p> <p>Describe 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 animal.</p>	<p>Pupils should be taught to:</p> <p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and difference, including micro-organisms, plants and animals.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	
<p><b>Rocks</b></p>				<p>Pupils should be taught to:</p> <p>Compare and group together different kinds of rocks on the basis of their</p>				

				<p>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>				
Light	Children are familiar with basic scientific concepts such as experimentation.			<p>Recognise that I need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the Sun can be dangerous and that there are ways to protect my eyes.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by a solid object.</p> <p>Can find patterns in the way that the sizes of shadows change.</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 out or reflect light into the eye.</p> <p>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.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p>	
Forces and Magnets	Children are familiar with basic scientific concepts such as experimentation.			<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify</p>		<p>Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction, that act 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>some magnetic materials.</p> <p>Describe magnets as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</p>				
<p>Living things and their habitats</p> <p>All living things and their habitats</p>	<p>Looks closely and similarities, patterns and change.</p> <p>Children know about similarities and differences in relation to living things</p> <p>Children make observations of animals and explain why some things occur and talk about changes.</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 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.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and I can identify and name different sources of food.</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 that this can sometimes pose dangers to living things.</p>	<p>Describe 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 animal.</p>	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and difference, including micro-organisms, plants and animals.</p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p>	
States of matter	Looks closely and similarities, differences and change.				<p>Compare and group materials together, according to whether they are solids, liquids or gasses.</p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which</p>			

					<p>this happens in degrees Celsius.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>			
Sound	Children sing songs, make music and experiment with ways of changing them.				<p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p>			
Electricity					<p>Identify common appliances that run on electricity.</p> <p>Construct a simple series electrical circuit, identifying and naming its basic parts, including cells (batteries), wires, bulbs, switches and buzzers.</p> <p>Identify whether or not a lamp (bulb) will light in a simple series circuit, based on whether or not the lamp (bulb) is part of a</p>		<p>Associate the brightness of a lamp (bulb) or the volume of a buzzer with the number and voltage of cells (batteries) 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</p>	

					<p>complete loop with a battery.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p>		<p>representing a simple circuit in a diagram.</p>	
Earth and space						<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>		
Evolution and inheritance							<p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited 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. Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p>	