



**Progression of Knowledge and Skills in Science**

**Progression of Knowledge**

	<u>Autumn 1</u>	<u>Autumn 2</u>	<u>Spring 1</u>	<u>Spring 2</u>	<u>Summer 1</u>	<u>Summer 2</u> Science in Context
<u>EYFS</u>	Past and Present		People, Cultures and Community		The Natural World	
<u>Year 1</u>	<b>My body</b> (School Days)	<b>Everyday Materials</b> (Moon Zoom)	<b>Identifying animals</b> (Paws, Claws & Whiskers)	<b>Forces</b> (Bright Lights Big City)	<b>Identifying plants</b> (Enchanted Woodland)	<b>Seasonal Changes</b> (Splendid Skies)
<u>Year 2</u>	<b>Materials Classifying (Squashy)</b> (Land Ahoy!)	<b>Growth, Survival &amp; Healthy Bodies</b> (Movers and Shakers)	<b>Materials Everyday uses (Waterproof)</b> (Tunnels and Turrets)	<b>Growing Plants</b> (Rio Da Vida)	<b>Microhabitats &amp; Offspring</b> (Wriggle and Crawl)	<b>Constructing Food Chains</b> <b>Living things &amp; survival</b> (Beechcomber)
<u>Year 3</u>	<b>Nutrition (Animals – Humans)</b> (Predator)	<b>Forces and Magnets</b> (Gods and Mortals)	<b>Rocks, Fossils and Soils</b> (Tremors)	<b>How plants grow</b> (Tribal Tales)	<b>Light and Shadow</b> (Urban Pioneers)	<b>Health and Movement (Animals – Humans)</b> (Emperors & Empires)
<u>Year 4</u>	<b>Circuits and Conductors</b> (Invasion)	<b>Eating and Digestion</b> (Burps, bile and bottoms)	<b>Sound</b> (1066)	<b>States of Matter</b> (Potions)	<b>States of Matter Water Cycle</b> (Misty Mountain) <b>Living things &amp; their habitats (tundra)</b> (Misty Mountain)	<b>Living things &amp; their Habitats</b> <b>Using classification keys</b> (Ancient Civilisation)
<u>Year 5</u>	<b>Life Cycles</b> (Pestilence)	<b>Earth and Space</b>	<b>Growth and Puberty</b> (Time Traveller)	<b>Properties and Changes of Materials &amp; States of Matter</b> (Pharaohs)	<b>Changes and Reproduction (asexual and sexual) Plants</b> (Off with her Head!)	<b>Forces in Action</b> (Scream Machine)
<u>Year 6</u>	<b>Classifying Organisms</b> (ID)	<b>Seeing Light</b> (Hola! Mexico)	<b>Evolution and Inheritance</b> (Frozen Kingdom)	<b>Changing Circuits</b> (A Child's War)	<b>Circulatory System (Animals – Humans)</b> (Blood Heart)	<b>Healthy Bodies</b> (Maafa)

<b><u>Animals (including Humans)</u></b>	<b><u>Materials</u></b>	<b><u>States of Matter</u></b>	<b><u>Plants</u></b>	<b><u>Rocks</u></b>	<b><u>Living Things and their Habitats</u></b>	<b><u>Evolution and inheritance</u></b>	<b><u>Forces and Magnets</u></b>	<b><u>Earth And Space</u></b>	<b><u>Sound</u></b>	<b><u>Light and Electricity</u></b>	<b><u>Seasonal Changes</u></b>
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	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
<b>Seasonal Changes</b>	<p>I can observe and describe changes across the four seasons</p> <p>I can describe weather associated with the seasons and how day length varies</p> <p><b>Splendid Skies (Summer 2)</b></p> <p><b>Record weather</b></p>					
<b>Animals (humans)</b>	<p>I can 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><b>School Days (Autumn 1)</b></p>	<p>I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</p> <p><b>(Summer 2)</b></p> <p>I can notice that animals, including humans, have offspring which grow into adults</p> <p><b>(Summer 2)</b></p> <p>I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p> <p><b>Movers and Shakers (Autumn 2)</b></p>	<p>I can identify that humans and some other animals have skeletons and muscles for support, protection and movement</p> <p><b>Emperors and Empires (Summer 2)</b></p> <p>I can identify 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</p> <p><b>Predator (Autumn 1)</b></p>	<p>I can describe the simple functions of the basic parts of the digestive system in humans</p> <p>I can identify the different types of teeth in humans and their simple functions</p> <p><b>Burps, Bottom and Bile (Autumn 2)</b></p>	<p>I can describe the changes as humans develop to old age</p> <p><b>Time Traveller (Spring 1)</b></p> <p><b>Puberty – Jigsaw (Spring 1)</b></p>	<p>I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p><b>Blood Heart (Summer 1)</b></p> <p>I recognise the impact of diet, exercise, drugs and lifestyle on the way my body functions</p> <p>Alongside... Sex Education (Jigsaw)</p> <p><b>Maafa (Summer 2)</b></p> <p>I can describe the ways in which nutrients and water are transported within animals, including humans</p>

						<b>Blood Heart (Summer 1)</b>
<p><b>KS1 Animals And Habitats</b></p> <p><b>KS2 Living things and their habitats</b></p>	<p>I can identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>I can identify and name a variety of common animals that are carnivores, herbivores and omnivores</p> <p>I can describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets)</p> <p><b>Paws, Claws and Whiskers (Spring 1)</b></p>	<p>I can describe how animals obtain their food from plants and other animals, using the idea of a <b>simple food chain</b>, and identify and name different sources of food</p> <p><b>Construct simple food chain Beechcomber (Summer 2)</b></p> <p>I can explore and compare the differences between things that are living, dead, and things that have never been alive.</p> <p><b>Beechcomber (Summer 2)</b></p> <p>I can 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><b>Beachcomber (Summer 2)</b></p> <p>I can identify and name a variety of plants and animals in their habitats,</p>		<p>I can recognise that living things can be grouped in a variety of ways</p> <p>I can <b>construct and interpret a variety of food chains</b>, identifying producers, predators and prey</p> <p><b>Ancient Civilisation (Summer 2)</b></p> <p>I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p><b>(Begin to interpret and explore classification keys) Ancient Civilisation (Summer 2)</b></p> <p>I can recognise that environments can change and that this can sometimes pose dangers to living things</p> <p><b>Misty Mountain Sierra (Summer 1)</b></p>	<p>I can describe the differences in the <b>life cycles</b> of a mammal, an amphibian, an insect and a bird</p> <p><b>Pestilence (Autumn 1)</b></p> <p>I can 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.</p> <p><b>Create classification keys ID (Autumn 1)</b></p>	<p>I can give reasons for classifying plants and animals based on specific characteristics.</p>

		including microhabitats <b>Wriggle and Crawl (Summer 1)</b>				
<b>Plants</b>	<p>I can identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</p> <p>I can identify and describe the basic structure of a variety of common flowering plants, including trees</p> <p><b>The Enchanted Woodland (Summer 1)</b></p>	<p>I can observe and describe how seeds and bulbs grow into mature plants</p> <p>I can describe the basic needs of plants for survival and impact of changing these and the main changes as seeds and bulbs grow into mature plants.</p> <p><b>Rio Da Vida (Spring 2)</b></p>	<p>I can identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>I can explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</p> <p>I can investigate the way in which water is transported within plants</p> <p>I can explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal (Life cycle of flowering plants)</p> <p><b>Tribal Tales (Spring 2)</b></p>		<p>I can describe the life process of reproduction in some plants and animals</p> <p><b>(Asexual and sexual reproduction in flowers)</b></p> <p><b>Off With Her Head! (Summer 1)</b></p>	
<b>Materials</b>  <b>Rocks = Year 3</b>	<p>I can identify and name a variety of everyday materials and their physical properties</p> <p><b>Moon Zoom! (Autumn 2)</b></p>	<p>I can identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock,</p>	<p>I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p><b>Tremors</b></p>	<p>I can observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens</p>	<p>I can demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p><b>Pharaohs (Spring 2)</b></p>	

	<p>I can explore a variety of materials and their magnetic properties  <b>Bright Lights, Big City (Spring 2)</b></p>	<p>paper and cardboard for particular uses  <b>Towers, Tunnels and Turrets (Spring 1)</b></p> <p>I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching  <b>Land Ahoy! (Autumn 1)</b></p>	<p><b>(Spring 1)</b></p> <p>I can recognise that soils are made from rocks and organic matter</p> <p>I can describe in simple terms how fossils are formed when things that have lived are trapped within rock  <b>Tremors (Spring 1)</b></p>	<p>in degrees Celsius (°C)  <b>Potions (Spring 2)</b></p> <p>I can compare and group materials together, according to whether they are solids, liquids or gases  <b>Potions (Spring 2)</b></p> <p>I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature  <b>Misty Mountain (Summer 1)</b></p>	<p>I can 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.</p> <p>I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>I can demonstrate that dissolving, mixing and changes of state are reversible changes</p>	
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					<p>I can 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.</p> <p><b>Pharaohs (Spring 2)</b></p>	
<b>Sound</b>				<p>I can 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>I can find patterns between the pitch of a sound and features of the object that produced it</p> <p>I can find patterns between the volume of a sound and the strength of the vibrations that produced it</p> <p>I can recognise that sounds get fainter as the distance from the sound source increases</p> <p><b>1066 (Spring 1)</b></p>		

<p><b>Electricity and Light</b></p>			<p>I can recognise that they need light in order to see things and that dark is the absence of light.</p> <p>I can notice that light is reflected from surfaces.</p> <p>I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>I can recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>I can find patterns in the way that the size of shadows change  <b>Urban Pioneers (Summer 1)</b></p>	<p>I can identify common appliances that run on electricity and can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers.</p> <p>I can 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>I can 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>I can recognise some common conductors and insulators, and associate metals with being good conductors.  <b>Invasion (Autumn 1)</b></p>	<p><b><u>Light</u></b>  I recognise that light appears to travel in straight lines and can 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 (which reflect into the eye).</p> <p>I can explain why shadows have the same shape as the objects which cast them.  <b>Hola Mexico! (Autumn 2)</b></p> <p><b><u>Electricity</u></b>  I can use recognised symbols when representing a simple circuit in a diagram.</p> <p>I can 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>I can 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 switch.</p>
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						A Child's War (Spring 2)
Forces and Magnets			<p>I can compare how things move on different surfaces and notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.</p> <p>I can 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>I can describe magnets as having 2 poles.</p> <p>I can predict and observe how magnets attract or repel each other and attract some materials and not others</p> <p><b>God and Mortals (Autumn 2)</b></p>		<p>I can explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>I can identify the effects of air resistance, water resistance and friction, that act between moving surfaces</p> <p>I can recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effects</p> <p><b>Scream Machine (Summer 2)</b></p>	
Earth and Space					<p>I can describe the movement of the Earth, and other planets, relative to the Sun in the solar system</p> <p>I can describe the movement of the moon relative to the Earth</p>	



					<p>I can describe the sun, Earth and moon as approximately spherical bodies.</p> <p>I can use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</p> <p><b>Stargazers (Autumn 2)</b></p>	
<b>Evolution and Inheritance</b>						<p>I 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>I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p>

						<p>I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p><b>Frozen Kingdom (Spring 1)</b></p>
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### Progression of Skills

Assessment Criteria	EYFS	KS1		LK2		UK2	
		Year 1 Working Scientifically	Year 2 Working Scientifically	Year 3 Working Scientifically	Year 4 Working Scientifically	Year 5 Working Scientifically	Year 5 Working Scientifically
		<p>Pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:</p> <ul style="list-style-type: none"> <li>☐ asking simple questions and recognising that they can be answered in different ways</li> <li>☐ observing closely, using simple equipment</li> <li>☐ performing simple tests</li> <li>☐ identifying and classifying</li> <li>☐ using their observations and ideas to suggest answers to questions</li> <li>☐ gathering and recording data to help in answering questions.</li> </ul>		<p>Pupils should</p> <ol style="list-style-type: none"> <li>1) asking relevant questions and using different types of scientific enquiries to answer them <b>Y4 (Summer 1)</b></li> <li>2) setting up simple practical enquiries, comparative and fair tests <b>Y3 (Spring 2) &amp; Y4 (Spring 1)</b></li> <li>3) I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers <b>Y3 (Autumn 2) &amp; Y4 (Spring 2)</b></li> <li>4) gathering, recording, classifying and presenting data in a variety of ways to help in answering questions <b>Y3 (Summer 2)</b></li> <li>5) I can <b>record findings</b> using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables and <b>reporting on findings</b> from enquiries, including oral and written explanations, displays or presentations of results and conclusions <b>Y3 (Autumn 1) &amp; Y4 (Autumn 2)</b></li> <li>6) using results to draw simple conclusions, make predictions for new values, suggest improvements and raise</li> </ol>		<p>Pupils should</p> <ol style="list-style-type: none"> <li>1) planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary <b>Y5 (Summer 1) &amp; Y6 (Autumn 2)</b></li> <li>2) taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate <b>Y5 (Spring 2) &amp; Y6 (Summer 2)</b></li> <li>3) recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs <b>Y5 (Autumn 2) &amp; Y6 (Summer 1)</b></li> <li>4) using test results to make predictions to set up further comparative and fair tests <b>Y5 (Spring 1) &amp; Y6 (Spring 2)</b></li> <li>5) reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations <b>Y5 (Summer 2) &amp; Y6 (Spring 1)</b></li> <li>6) identifying scientific evidence that has been used to support or refute ideas or</li> </ol>	

				<p>further questions Y3 (Summer 1) &amp; Y4 (Autumn 1)</p> <p>7) identifying differences, similarities or changes related to simple scientific ideas and processes Y3 (Spring 1)</p> <p>8) using straightforward scientific evidence to answer questions or to support their findings Y4 (Summer 2)</p>		arguments Y5 (Autumn 1) & Y6 (Autumn 1)	
<b>Autumn 1</b>		I can ask simple questions and recognise that they can be answered in different ways	I can ask simple questions and recognise that they can be answered in different ways	I can record and report findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	I can identify scientific evidence that has been used to support or refute ideas or arguments	I can identify scientific evidence that has been used to support or refute ideas or arguments
<b>Autumn 2</b>		I can perform simple tests to determine magnetic properties	I can perform simple tests to determine magnetic properties	I can make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	I can record and report findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
<b>Spring 1</b>		I can identify and classify	I can gather and record data to help in answering questions	I can identify differences, similarities or changes related to simple scientific ideas and processes	I can set up simple practical enquiries, comparative and fair tests	I can use test results to make predictions to set up further comparative and fair tests	I can report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations
<b>Spring 2</b>		I can use my observations and ideas to suggest answers to questions	I can observe closely using simple equipment	I can set up simple practical enquiries, comparative and fair tests	I can make systematic and careful observations and, where appropriate, taking	I can take measurements, using a range of scientific equipment, with	I can use test results to make predictions to set up further comparative and fair tests

					accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	increasing accuracy and precision, taking repeat readings when appropriate	
Summer 1		I can gather and record data to help in answering questions	I can use my observations and ideas to suggest answers to questions	I can use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	I can ask relevant questions and using different types of scientific enquiries to answer them	I can plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary	I can record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
Summer 2		I can observe closely using simple equipment	I can identify and classify	I can gather, record, classify and present data in a variety of ways to help in answering questions	I can use straightforward scientific evidence to answer questions or to support their findings	I can report and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations	I can take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate