

Science Progression Document

	EYFS Ranges	Educational Programmes	ELGs
EYFS	<p>Range 4:</p> <ul style="list-style-type: none"> Notices detailed features of objects in their environment Can talk about some of the things they have observed such as plants, animals, natural and found objects <p>Range 5:</p> <ul style="list-style-type: none"> Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world Talks about why things happen and how things work Developing an understanding of growth, decay, and changes over time Shows care and concern for living things and the environment <p>Range 6:</p> <ul style="list-style-type: none"> Looks closely at similarities, differences, patterns and change in nature Knows about similarities and differences in relation to places, objects, materials and living things Talks about the features of their own immediate environment and how environments might vary from one another Makes observations of animals and plants and explains why some things occur, and talks about changes 	<p>Understanding the world involves guiding children to make sense of their physical world and their community. The frequency and range of children's personal experiences increases their knowledge and sense of the world around them – from visiting parks, libraries and museums to meeting important members of society such as police officers, nurses and firefighters. In addition, listening to a broad selection of stories, non-fiction, rhymes and poems will foster their understanding of our culturally, socially, technologically and ecologically diverse world. As well as building important knowledge, this extends their familiarity with words that support understanding across domains. Enriching and widening children's vocabulary will support later reading comprehension.</p>	<p>The Natural World</p> <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.

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		EYFS
Knowledge and	National curriculum	<p>The Natural World</p> <ul style="list-style-type: none"> Explore the natural world around them, making observations and drawing pictures of animals and plants. 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. <p>Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.</p>
	Disciplinary knowledge	<p>Questioning</p> <p>Ask simple questions to explore the world around them.</p>
		<p>Planning and Predicting</p> <p>Predict what might happen.</p> <p>Plan how to test out a theory.</p>
		<p>Observing and Measuring</p> <p>Make observations of plants and animals.</p> <p>Comment on the natural world around them.</p> <p>Observe changes in the natural world e.g. seasons, changing states of matter.</p>

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	Recording Data	<p>Comment on what happened (oral recording).</p> <p>Draw pictures of what you saw.</p> <p>Begin to make recordings e.g. through pictures, tallies, charts.</p>
	Interpreting and Communicating Results	<p>Talk about what you saw.</p>
	Exploring and Evaluating	<p>Begin to talk about what happened and what could be done differently.</p>

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	Substantive knowledge	<p style="text-align: center;"><u>Autumn</u></p> <ul style="list-style-type: none"> • Autumn is a season. • In Autumn leaves change colour. • Winter is a season. • The leaves fall off some trees. • It snows when it is very cold. • When it is cold, water freezes. • When it gets hotter, ice melts. • There are different types of clothing for different weathers. <p>There are different types of materials. Some materials are natural.</p>	<p style="text-align: center;"><u>Spring</u></p> <ul style="list-style-type: none"> • Spring is a season. • All plants and animals are living things. • All plants and animals need to be cared for. • Some flowers and plants start to grow. • Plants need water to grow. • Some animals are born in spring e.g. frogs, chicks, lambs. • Baby animals have different names. • Animals live in different places. • Animals eat different foods. <p>Environments vary from one another.</p>	<p style="text-align: center;"><u>Summer</u></p> <ul style="list-style-type: none"> • Summer is a season. • There are 4 seasons: Autumn, Winter, Spring, Summer. • We need to keep ourselves safe in the sun. • Animals have life cycles. • Not all animal babies look like the adults e.g. caterpillars. • Animals change as they grow. • Some objects float. Floating means staying on top of the water. • Some objects sink. Sinking means going to the bottom of the water. • Heat can cause things to melt e.g. ice cream, chocolate. <p>There are similarities and differences between the natural world.</p>
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		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Working Scientifically Covered within	National curriculum	<p>asking simple questions and recognising that they can be answered in different ways ?</p> <p>observing closely, using simple equipment ?</p> <p>performing simple tests ?</p> <p>identifying and classifying ?</p> <p>using their observations and ideas to suggest answers to questions ?</p> <p>gathering and recording data to help in answering questions.</p>		<p>asking relevant questions and using different types of scientific enquiries to answer them ?</p> <p>setting up simple practical enquiries, comparative and fair tests ?</p> <p>making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers ?</p> <p>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions ?</p> <p>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables ?</p> <p>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions ?</p> <p>identifying differences, similarities or changes related to simple scientific ideas and processes ?</p> <p>using straightforward scientific evidence to answer questions or to support their findings.</p>		<p>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ?</p> <p>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate ?</p> <p>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs ?</p> <p>using test results to make predictions to set up further comparative and fair tests ?</p> <p>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations ?</p> <p>identifying scientific evidence that has been used to support or refute ideas or arguments.</p>	

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	Questioning	Ask simple questions	Asking simple questions and recognising that they can be answered in different ways ?	Asking relevant questions and answer some using scientific enquiry	Asking relevant questions and using different types of scientific enquiries to answer them ?	Planning different types of scientific enquiries to answer questions, including recognising and variables?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ?
	Planning and Predicting	Performing simple tests and starting to make group predictions about what might happen	Performing simple tests.	Setting up simple practical enquiries focusing on fair testing	Setting up simple practical enquiries, comparative and fair tests ?	Planning different types of scientific enquiries to answer questions, including recognising and variables? Using test results to make predictions to set up further tests ?	Planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary ? Using test results to make predictions to set up further comparative and fair tests
	Observing and Measuring	Make clear observations	Observing closely, using simple equipment	Making careful observations, taking accurate measurements using standard units and using a range of equipment where appropriate?	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision?	Taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate

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	Recording Data	Gather and record date (what did they notice?)	Gathering and recording data to help in answering questions.	Gathering, recording, classifying and presenting data in a variety of ways Recording findings using drawings, labelled diagrams, keys, bar charts, and tables	Gathering, recording, classifying and presenting data in a variety of ways to help in answering questions □ using straightforward scientific evidence to answer questions or to support their finding Recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables	Recording data and results of increasing complexity using examples of scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs	Recording data and results of increasing complexity, using a range of different examples including scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	Interpreting and Communicating Results		Identifying and classifying □ using their observations and ideas to suggest answers to questions	Reporting on findings from enquiries, including oral and written explanations Using results to draw simple conclusions, make predictions for new values and suggest improvements	Reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations	Reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations

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	Exploring and Evaluating		Using their observations and ideas to suggest answers to questions	Identifying differences and similarities related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions	Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Identifying differences, similarities or changes related to simple scientific ideas and processes	Identifying scientific evidence that links to enquires undertaken	Identifying scientific evidence that has been used to support or refute ideas or arguments
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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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Plants	National curriculum	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees.</p>	<p>Observe and describe how seeds and bulbs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p>	<p>Identify and describe the functions of different parts of flowering plants: 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 they vary from plant to plant. Investigate the way in which water is transported within plants.</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</p>			
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	Substantive knowledge	<ul style="list-style-type: none"> Plants grow from seeds/bulbs Plants need light and water to grow and survive Plants are important We can eat lots of plants 	<ul style="list-style-type: none"> Plants grow from seeds/bulbs Plants need light, water and warmth to grow and survive Flowers make seeds to make more plants (reproduce) Plants are important We need plants to survive (to clean air, to eat) <p>We can eat different parts of the plants (leaves, stems, roots, seeds, fruit)</p>	<ul style="list-style-type: none"> Plants are producers, they make their own food. Their leaves absorb sunlight and carbon dioxide Plants have roots, which provide support and draw water from the soil Flowering plants have specific adaptations which help it to carry out pollination, fertilisation and seed production Seed dispersal improves a plants chances of successful reproduction Seeds/bulbs require the right conditions to germinate and grow. Seeds contain enough food for 			
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				the plant's initial growth			
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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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Animals including humans including evolution	National curriculum	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).</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>Notice that animals, including humans, have offspring which grow into adults. Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</p>	<p>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>Identify that humans and some other animals have skeletons and muscles for support, protection and movement.</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Describe the changes as humans develop to old age</p>	<p>Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</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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	Substantive knowledge	<ul style="list-style-type: none"> • There are many different animals with different characteristics. • Animals have senses to help individuals survive. When animals sense things they are able to respond. • Animals need food to survive. Animals need a variety of food to help them grow, repair their bodies, be active and stay healthy. 	<ul style="list-style-type: none"> • Animals move in order to survive. • Different animals move in different ways to help them survive. • Exercise keeps animal's bodies in good condition and increases survival chances. • All animals eventually die. • Animals reproduce new animals when they reach maturity. • Animals grow until maturity 	<ul style="list-style-type: none"> • Different animals are adapted to eat different foods. • Many animals have skeletons to support their bodies and protect vital organs. • Muscles are connected to bones and move them when they contract. • Movable joints connect bones. 	<ul style="list-style-type: none"> • Animals have teeth to help them eat. • Different types of teeth do different jobs. • Food is broken down by the teeth and further in the stomach and intestines where nutrients go into the blood. • The blood takes nutrients around the body. <p>Nutrients produced by plants move to primary consumers then to secondary</p>	<ul style="list-style-type: none"> • Different animals mature at different rates and live to different ages. • Puberty is something we all go through, a process which prepares our bodies for being adults, and reproduction • Hormones control these changes; which can be physical and/or emotional. 	<ul style="list-style-type: none"> • The heart pumps blood around the body. • Oxygen is breathed into the lungs where it is absorbed by the blood. • Muscles need oxygen to release energy from food to do work. (Oxygen is taken into the blood in the lungs; the heart pumps the blood through blood vessels to the muscles; the muscles take oxygen and nutrients from the blood.)
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			and then don't grow any larger.		consumers through food chains.		
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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u> <u>Rocks</u>	<u>Year 4</u> <u>States of Matter</u>	<u>Year 5</u>	<u>Year 6</u>
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Materials	National curriculum	<p>Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</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>	<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>	<p>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>Know 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 mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the</p>	

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						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.	
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	Substantive knowledge	<ul style="list-style-type: none"> • There are many different materials that have different describable and measurable properties. • Materials that have similar properties are grouped into metals, rocks, fabrics, wood, plastic and ceramics (including glass). • The properties of a material determine whether they are suitable for a purpose. 	<ul style="list-style-type: none"> • A material's physical properties make it suitable for particular purposes, such as glass for windows and brick for building walls. • Many materials are used for more than one purpose, such as metal for cutlery and cars. • Materials can be changed by physical force (twisting, bending, squashing and stretching) 	<ul style="list-style-type: none"> • There are different types of rock. • There are different types of soil. • Soils change over time. • Different plants grow in different soils. • Fossils tell us what has happened before. • Fossils provide evidence. • Palaeontologists use Fossils to find out about the past. <p>Fossils provide evidence that living things have changed over time.</p>	<ul style="list-style-type: none"> • Solids, liquids and gases are described by observable properties. • Materials can be divided into solids, liquids and gases. • Heating causes solids to melt into liquids and liquids evaporate into gases. d) Cooling causes gases to condense into liquids and liquids to freeze into solids. <p>The temperature at which given substances change state are always the same.</p>	<p>Mixtures and separation</p> <ul style="list-style-type: none"> • When two or more substances are mixed and remain present the mixture can be separated. • Some changes can be reversed and some can't. <p>Materials change state by heating and cooling.</p>	
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		<u>Year 1</u> <u>Seasonal Changes</u>	<u>Year 2</u>	<u>Year 3</u> <u>Light</u>	<u>Year 4</u> <u>Sound</u>	<u>Year 5</u>	<u>Year 6</u> <u>Light</u>
Energy	National curriculum	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>		<p>Recognise that they need light in order to see things and that dark is the absence of light. 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 their 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>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. 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>		<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>

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	Substantive knowledge	<ul style="list-style-type: none"> • Weather can change • There are lots of different types of weather: Rain, Sun, Cloud, Wind, Snow, etc • Days are longer and hotter in the summer • Days are shorter and colder in the winter • There are four seasons: Spring, Summer, Autumn, Winter 		<ul style="list-style-type: none"> • There must be light for us to see. Without light it is dark. • We need light to see things even shiny things. • Transparent materials let light through them and opaque materials don't let light through. • Beams of light bounce off some materials (reflection). • Shiny materials reflect light beams better than non-shiny materials. • Light comes from a source 	<ul style="list-style-type: none"> • Sound travels from its source in all directions and we hear it when it travels to our ears. • Sound travel can be blocked. • Sound spreads out as it travels. • Changing the shape, size and material of an object will change the sound it produces. • Sound is produced when an object vibrates. • Sound moves through all materials by making them vibrate. • Changing the way an object vibrates changes it's sound. • Bigger vibrations produce louder sounds and smaller 		<ul style="list-style-type: none"> • Animals see light sources when light travels from the source into their eyes. • Animals see objects when light is reflected off that object and enters their eyes. • Light reflects off all objects (unless they are black). Non-shiny surfaces scatter the light so we don't see the beam. <p>Light travels in straight lines.</p>
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					vibrations produce quieter sounds. Faster vibrations (higher frequencies) produce higher pitched sounds		
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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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Living Things and Their Habitats	National curriculum		<p>Explore and compare the differences between things that are living, dead, and things that have never been alive. • 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. • Identify and name a variety of plants and animals in their habitats, including microhabitats. 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>Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. 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. Describe the life process of reproduction in some plants and animals.</p>	<p>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. Give reasons for classifying plants and animals based on specific characteristics.</p>
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	Substantive knowledge		<ul style="list-style-type: none"> • Some things are living, some were once living but now dead and some things never lived. • There is variation between living things. • Different animals and plants live in different places. • Living things are adapted to survive in different habitats. • Environmental change can affect plants and animals that live there. 		<ul style="list-style-type: none"> • Living things can be divided into groups based upon their characteristics • Environmental change affects different habitats differently • Different organisms are affected differently by environmental change • Different food chains occur in different habitats <p>Human activity significantly affects the environment</p>	<ul style="list-style-type: none"> • Different animals mature at different rates and live to different ages. • Some organisms reproduce sexually where offspring inherit information from both parents. • Some organisms reproduce asexually by making a copy of a single parent. • Environmental change can affect how well an organism is suited to its environment. • Different types of organisms have different lifecycles. 	<ul style="list-style-type: none"> • Variation exists within a population (and between offspring of some plants) – <i>NB: this Key Idea is duplicated in Year 6 Evolution and Inheritance.</i> • Organisms best suited to their environment are more likely to survive long enough to reproduce. • Organisms are best adapted to reproduce are more likely to do so. • Organisms reproduce and offspring have similar characteristic patterns. <p>Competition exists for resources and mates.</p>
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	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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Forces and Magnets	National curriculum			<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 and 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 as having two poles.</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing.</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>	
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	Substantive knowledge			<ul style="list-style-type: none">• Magnets exert attractive and repulsive forces on each other.• Magnets exert non-contact forces, which work through some materials.• Magnets exert attractive forces on some materials. <p>Magnet forces are affected by magnet strength, object mass, distance from object and object material.</p>		<ul style="list-style-type: none">• Air resistance and water resistance are forces against motion caused by objects having to move air and water out of their way.• Friction is a force against motion caused by two surfaces rubbing against each other. <p>Some objects require large forces to make them move; gears, pulley and levers can reduce the force needed to make things move</p>	

	<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
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Electricity	National curriculum				<p>Identify common appliances that run on electricity. 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 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, and associate metals with being good conductors.</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. 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>
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	Substantive knowledge				<ul style="list-style-type: none"> • A source of electricity (mains of battery) is needed for electrical devices to work. • Electricity sources push electricity round a circuit. • More batteries will push the electricity round the circuit faster. • Devices work harder when more electricity goes through them. • A complete circuit is needed for electricity to flow and devices to work. <p>Some materials allow electricity to flow easily and these are called conductors. Materials that don't allow electricity to flow easily are called insulators.</p>		<ul style="list-style-type: none"> • Batteries are a store of energy. This energy pushes electricity round the circuit. When the battery's energy is gone it stops pushing. Voltage measures the 'push.' • The greater the current flowing through a device the harder it works. • Current is how much electricity is flowing round a circuit. <p>When current flows through wires heat is released. The greater the current, the more heat is released.</p>
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		<u>Year 1</u>	<u>Year 2</u>	<u>Year 3</u>	<u>Year 4</u>	<u>Year 5</u>	<u>Year 6</u>
Earth and Space	National curriculum					<p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system. Describe the movement of the Moon relative to the Earth. 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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	Substantive knowledge					<ul style="list-style-type: none">• Stars, planets and moons have so much mass they attract other things, including each other due to a force called gravity. Gravity works over distance.• Objects with larger masses exert bigger gravitational forces.• Objects like planets, moons and stars spin.• Smaller mass objects like planets orbit large mass objects like stars.• Stars produce vast amounts of heat and light.	
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