



Knowledge Progression – Science (Year 1-6)



Year Group	Working Scientifically	Plants	Animals Including Humans	Materials (Properties / Rocks States of Matter)	Living Things and Their Habitats	Forces	Light / Electricity	Other
<p style="text-align: center; font-size: 2em; font-weight: bold;">1</p> <p>Pupils in Years 1 and 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions.</p> <p>They should use simple features to compare</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p>Ask simple questions and understand that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>(Curriculum links: Traction Man; Plants / Vegetables).</p> <p>Perform simple tests.</p>	<p>Pupils will be taught to:</p> <p>Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen.</p> <p>Describe the basic structure of a variety of common plants including</p>	<p>Pupils will be taught to:</p> <p>Identify and name lots of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name lots of common animals that are carnivores, herbivores and omnivores.</p> <p><i>Hook (link to PWP English): Alien Spacecraft on</i></p>	<p>Pupils will be taught to:</p> <p>Understand the difference between an object and the material from which it is made.</p> <p>Identify and name lots 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</p>	<p>Pupils will be taught to:</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><i>'Jaws and Claws' visit</i></p>			<p><u>Seasonal Changes</u></p> <p>Pupils will be taught to:</p> <p>Observe changes across the four seasons.</p> <p>Observe and describe the weather within the seasons and how the length of the days changes.</p> <p><i>Pupils observe the weather, daily as part of a classroom expectation,</i></p>



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<p>objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships.</p> <p>They should ask people questions and use simple secondary sources to find answers.</p> <p>They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather</p>	<p>(waterproof and non-waterproof materials test – Traction Man).</p> <p>Identify and classify living and non-living things.</p> <p>Use observations and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>	<p>roots, stem, leaves and flowers.</p> <p><i>Investigation of common garden and wild plants (class walk to the Downs.)</i></p> <p><i>Deciduous and Evergreen trees – visit to Bedgebury Pinetum.</i></p>	<p><i>the playground; skeletons and body part models of aliens and humans.</i></p> <p><u>Key Vocabulary:</u></p> <p><i>Birds, fish, amphibians, reptiles, mammals and invertebrates, feathers, scales, gills, fins, hair, land, water, backbone, skeleton, carnivores, herbivores, omnivores, Meat, plants</i></p> <p>Describe and</p>	<p>simple physical properties.</p> <p><i>Investigation: Which material is best for Traction Man? (English link)</i></p>				<p><i>when displaying our class calendar.</i></p> <p><u>Key Vocabulary:</u></p> <p><i>Seasons, weather (anything else to add here)</i></p>
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<p>data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.</p> <p>These opportunities for working scientifically should be provided across Years 1 and 2 so that the expectations in the programme</p>			<p>compare lots of common animals (fish, amphibians, reptiles, birds and mammals, including pets) by how they look and how they move.</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>					
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of study can be met by the end of Year 2. Pupils are not expected to cover each aspect for every area of study								
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<p style="text-align: center; font-size: 2em; font-weight: bold;">2</p> <p>Pupils in Years 1 and 2 should explore the world around them and raise their own questions. They should experience different types of scientific enquiries, including practical activities, and begin to recognise ways in which they might answer scientific questions.</p> <p>They should use simple features to compare</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p>Ask simple questions and understand that they can be answered in different ways.</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests.</p> <p>Identify and classify living and non- living things. Use observations</p>	<p>Pupils will be taught to:</p> <p>Observe and describe how seeds and bulbs grow into mature plants. (shoots/roots)</p> <p><i>Investigation – collect a variety of seeds and bulbs in Autumn. Plant a variety of seeds and bulbs and observe the difference (allotment area).</i></p>	<p>Pupils will be taught to:</p> <p>Understand that animals, including humans, have offspring (babies) which grow into adults.</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</p>	<p>Pupils will be taught to:</p> <p>Identify and compare how different materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are used because of their properties. <i>Test – Which material ramp will make the car go fastest?</i></p> <p>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. <i>Pupils will test a variety of materials to observe</i></p>	<p>Pupils will 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</p>			<p><u>Sound</u></p> <p>Pupils will be taught to:</p> <p>Observe and name sources of sound, noticing that we hear with our ears and that sound gets fainter as the distance from a source increases.</p>

<p>objects, materials and living things and, with help, decide how to sort and group them, observe changes over time, and, with guidance, they should begin to notice patterns and relationships.</p> <p>They should ask people questions and use simple secondary sources to find answers.</p> <p>They should use simple measurements and equipment (for example, hand lenses, egg timers) to gather</p>	<p>and ideas to suggest answers to questions.</p> <p>Gather and record data to help in answering questions.</p>	<p>Find out and describe how plants need water, light and the right temperature to grow and stay healthy. (investigate)</p> <p><i>Pupils will choose the conditions in which to plant their seed / bulb and find out what plants need to be healthy</i></p> <p><u>Key Vocabulary:</u></p> <p><u>Types of trees:</u> deciduous, evergreen, ash, birch, oak, chestnut,</p>	<p>for humans of exercise, eating the right amounts of different types of food, and hygiene (being clean)</p> <p><i>Bread Experiment – Pupils will observe what happens if we touch bread with dirty hands.</i></p> <p><u>Key Vocabulary:</u></p> <p><u>Classification:</u> (Birds, fish, amphibians, reptiles, mammals, invertebrates).</p> <p><i>Carnivores,</i></p>	<p><i>which ones can be changed.</i></p> <p>Identify and compare how different materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard are used because of their properties.</p> <p><i>Investigate – carousel of experiments to see which material is best for purpose</i></p> <p><u>Key vocabulary:</u></p> <p><u>Types of materials:</u> wood, plastic, glass, metal, water, rock, brick, fabric, sand, paper, flour, butter, milk, soil</p> <p><u>Properties of materials:</u> hard/soft, stretchy/not stretchy,</p>	<p>of animals and plants, and how they depend on each other.</p> <p>Identify and name different plants and animals in their habitats, including micro-habitats.</p> <p><i>Investigate – Across the year, pupils will observe how many minbeasts are found in certain areas and compare.</i></p> <p>Describe how animals get their food from plants</p>			
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<p>data, carry out simple tests, record simple data, and talk about what they have found out and how they found it out. With help, they should record and communicate their findings in a range of ways and begin to use simple scientific language.</p> <p>These opportunities for working scientifically should be provided across Years 1 and 2 so that the expectations in the programme</p>		<p><i>apple, pine etc)</i></p> <p><i>Wild Flowering plant names, garden plant names, parts of plants (roots, branch, trunk, stalk, leaf, flower, petal, seeds, bulbs, twigs). Needs of plants (water, light, heat, temperature)</i></p>	<p><i>herbivores, omnivores.</i></p> <p>Stages of growth: <i>egg, larva, pupa, adult</i></p> <p>Stages of life: <i>baby, toddler, child, teenager, adult</i></p> <p>Life processes: <i>growth, nutrition, respiration.</i></p> <p>Hygiene: <i>clean, wash, germs.</i></p> <p>Foods – <i>healthy, grow, strong, energy</i></p>	<p><i>shiny/dull, rough/smooth, bendy/not bendy, transparent/not transparent, sticky/not sticky</i></p> <p>Verbs associated with materials: <i>crumble, squash, bend, stretch, twist</i></p> <p>Senses: <i>touch, see, hear, smell and taste</i></p>	<p>and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>Key Vocabulary: Habitat, micro habitat</p> <p>Pond, meadow, log pile, woodland, river, lake, beach, cliff</p> <p>Organism – plant, animal</p> <p>Tree names</p> <p>Wild flowering plant names</p> <p>Garden</p>			
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of study can be met by the end of Year 2. Pupils are not expected to cover each aspect for every area of study					plants Parts of plants Invertebrates Pond animals			
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<p style="text-align: center; font-size: 24px; font-weight: bold;">3</p> <p>Pupils in Years 3 and 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p><i>Ask relevant questions and using different types of scientific enquiries to answer them.</i></p> <p><i>Set up simple practical enquiries, comparative and fair tests. Linked to plant experiment.</i></p> <p><i>Make organised and careful observations and,</i></p>	<p>Pupils will be taught to:</p> <p>Identify and describe the functions of different parts of flowering plants: roots, stem/ trunk, leaves and flowers.</p> <p><i>Pupils will dissect and label parts of a plant and describe functions.</i></p> <p>Explore the requirements of plants for life and growth (air,</p>	<p>Pupils will be taught to:</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><i>Pupils will sort food into groups based on nutrition.</i></p> <p>Identify that humans and some other animals have</p>	<p>Pupils will be taught to:</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><i>Pupils will Make fossils out of coffee dough and explain how fossils form.</i></p> <p>Recognise that soils are made from rocks and organic matter.</p>		<p>Pupils will be taught to:</p> <p>Compare how things move on different surfaces.</p> <p><i>Pupils will measure distance car travels on different surfaces using ramps.</i></p> <p>Understand that some forces need contact between two objects, but magnetic forces can act at a distance.</p>	<p>Pupils will be taught to:</p> <p>Recognise that they need light in order to see things and that dark is the absence of light.</p> <p><i>Pupils will make shadow puppets to help explore and understand.</i></p> <p>Understand that light is reflected from surfaces.</p> <p>Recognise</p>	

<p>help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn</p>	<p>where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Linked to shadow experiment.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions. Linked to food diaries.</p> <p>Record findings using simple scientific language, drawings, labelled</p>	<p>light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p><i>Pupils will plant a seed and place in different environments (without light, varying pot sizes, no water, no soil)</i></p>	<p>skeletons and muscles for support, protection and movement.</p>			<p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p><i>Pupils will use magnets to investigate different materials.</i></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>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 a solid object.</p> <p>Find patterns in the way that the size of shadows change.</p> <p><i>Pupils will measure the size of a shadow based</i></p>	
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<p>how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.</p> <p>With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and</p>	<p>diagrams, keys, bar charts, and tables. Food diary and healthy foods bar chart.</p> <p>Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions. Linked to food diaries and plant investigation.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements</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><i>on the distance from light source.</i></p>	
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<p>answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected, and finding ways of improving what they have already done. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>	<p>and ask further questions. Linked to forces investigation.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes.</p> <p>Use simple scientific evidence to answer questions or to support their findings. Linked to using magnets.</p>							
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<p>Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.</p> <p>These opportunities for working scientifically should be provided across Years 3 and 4 so that the expectations in the programme of study can be met by the end of Year 4. Pupils are not expected to cover each aspect for every</p>								
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area of study.								
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<p style="text-align: center; font-size: 2em; font-weight: bold;">4</p> <p>Pupils in Years 3 and 4 should be given a range of scientific experiences to enable them to raise their own questions about the world around them. They should start to make their own decisions about the most appropriate type of scientific enquiry they might use to answer questions; recognise when a simple fair test is necessary and</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them.</p> <p>Set up simple practical enquiries, comparative and fair tests.</p> <p>Make organised and careful observations and, where appropriate,</p>	<p>Pupils will be taught to:</p> <p>Investigate the way in which water is transported within plants. <i>Food-colouring in water investigation</i></p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed</p>	<p>Pupils will be taught to:</p> <p>Describe the simple functions of the basic parts of the digestive system in humans. <i>Make their own model of a digestive system</i></p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a</p>	<p>Pupils will be taught to:</p> <p>Compare and group materials together, according to whether they are solids, liquids or gases. <i>Make 'oobleck'</i></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). <i>Compare the melting points of chocolate, butter</i></p> <p>Identify the part played by</p>	<p>Pupils will 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</p>		<p>Pupils will be taught to:</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</p>	<p><u>Sound</u></p> <p>Pupils will be taught to:</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</p>



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<p>help to decide how to set it up; talk about criteria for grouping, sorting and classifying; and use simple keys. They should begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them. They should help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. They should learn</p>	<p>taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.</p> <p>Gather, record, classify and present data in a variety of ways to help in answering questions.</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables.</p> <p>Report on</p>	<p>dispersal.</p>	<p>variety of food chains, identifying producers, predators and prey.</p>	<p>evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p><i>Mini water-cycle experiment</i></p>	<p>and that this can sometimes pose dangers to living things.</p> <p><i>Create their own activist group to campaign against a global issue</i></p>		<p>will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators,</p>	<p>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>
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<p>how to use new equipment, such as data loggers, appropriately. They should collect data from their own observations and measurements, using notes, simple tables and standard units, and help to make decisions about how to record and analyse this data.</p> <p>With help, pupils should look for changes, patterns, similarities and differences in their data in order to draw simple conclusions and</p>	<p>findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.</p> <p>Use results to draw simple conclusions, make predictions for new values, suggest improvements and ask further questions.</p> <p>Identify differences, similarities or changes related to simple scientific ideas and processes. Use simple</p>						<p>and associate metals with being good conductors.</p>	
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<p>answer questions. With support, they should identify new questions arising from the data, making predictions for new values within or beyond the data they have collected, and finding ways of improving what they have already done. They should also recognise when and how secondary sources might help them to answer questions that cannot be answered through practical investigations.</p>	<p>scientific evidence to answer questions or to support their findings.</p>							
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<p>Pupils should use relevant scientific language to discuss their ideas and communicate their findings in ways that are appropriate for different audiences.</p> <p>These opportunities for working scientifically should be provided across years 3 and 4 so that the expectations in the programme of study can be met by the end of Year 4. Pupils are not expected to cover each aspect for every</p>								
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<p style="text-align: center; font-size: 24px; font-weight: bold;">5</p> <p>Pupils in Years 5 and 6 should use their science experiences to: explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should use and develop</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy, taking</p>		<p>Pupils will be taught to:</p> <p>Describe the changes as humans develop to old age.</p> <p><i>Timeline of human development (from foetus to death)</i></p> <p><i>Pregnancy and foetus – Link with PSHE.</i></p> <p><i>Child development to include formation of bones/impact of vitamin deficiencies.</i></p>	<p>Pupils will be taught to:</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><i>Sorting activities</i></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><i>Dissolving various</i></p>	<p>Pupils will be taught to:</p> <p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p><i>Pupils will make a clay model of a lifecycle. Pupils will make comparisons between different animals.</i></p> <p>Describe the life process of reproduction in some plants and animals.</p>	<p>Pupils will be taught to:</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><i>Spinner investigation – Air resistance.</i></p> <p>Identify the effects of air resistance, water resistance and friction that act between</p>		<p><u>Earth and Space</u></p> <p>Pupils will be taught to:</p> <p>Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> <p><i>Ordering planets and explaining shape and movement.</i></p> <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the</p>



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<p>keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p> <p>They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make</p>	<p>repeat readings when appropriate. Using a thermometer and understanding different temperatures. e.g. boiling point of water</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs. Line graph to show temperature change.</p>		<p><i>Ageing process – Changes to hair, skin, bones etc.</i></p>	<p><i>powders and predicting outcome.</i></p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. <i>Pupils will know the difference between sieving and filtering. Investigate separating a mixture of materials.</i></p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. <i>Pupils will Investigate the best material for</i></p>	<p><i>Flower dissection – label parts. Reproduction rap. Asexual and sexual reproduction.</i></p>	<p>moving surfaces. <i>Pupils will explore friction investigations – Pulling shoe, running in the hall, car on different ramps. Investigating changing the shape of plasticine to make it float.</i></p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. <i>Link to</i></p>		<p>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. <i>Model to show day/night on earth. Children to present</i></p>
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<p>measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their</p>	<p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Report and present findings from enquiries in oral and written forms such as displays and other presentations.</p> <p>This includes drawing conclusions and explaining how things happen and how far the results conclude can be trusted.</p> <p>Identify scientific evidence that has been used to</p>			<p><i>keeping a hot drink warm.</i></p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p><i>Demonstration of reversible/irreversible changes.</i></p> <p>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><i>Investigation using bicarbonate of soda/effervescent tablet & vinegar/water.</i></p>		<p><i>Paragon event – Make a shaduf.</i></p>		
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Knowledge Progression – Science (Year 1-6)



<p>ideas and begin to separate opinion from fact.</p> <p>They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.</p> <p>These opportunities for working scientifically should be provided across Years 5 and 6 so that the expectations in</p>	<p>support or refute ideas or arguments.</p>							
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Knowledge Progression – Science (Year 1-6)



the programme of study can be met by the end of Year 6. Pupils are not expected to cover each aspect for every area of study.

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Knowledge Progression – Science (Year 1-6)



Year Group	Working Scientifically	Plants	Animals Including Humans	Materials (Properties / Rocks States of Matter)	Living Things and Their Habitats	Forces	Light / Electricity	Other
<p style="text-align: center; font-size: 2em; font-weight: bold;">6</p> <p>Pupils in Years 5 and 6 should use their science experiences to: explore ideas and raise different kinds of questions; select and plan the most appropriate type of scientific enquiry to use to answer scientific questions; recognise when and how to set up comparative and fair tests and explain which variables need to be controlled and why. They should use and develop</p>	<p>To be taught across all units through the year.</p> <p>Pupils will be taught to:</p> <p>Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.</p> <p>Take measurements, using a range of scientific equipment, with increasing accuracy, taking</p>		<p>Pupils will be taught to:</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><i>Virtual reality T shirt</i></p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p>		<p>Pupils will be taught to:</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.</p> <p><i>Discuss difference between class and species-use and create</i></p>		<p>Pupils will be taught to:</p> <p>Recognise that light appears to travel in straight lines.</p> <p><i>Challenge to prove this.</i></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><i>Labelled diagram of eye and how</i></p>	<p><u>Evolution and Inheritance</u></p> <p>Pupils will be taught to:</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</p>



Knowledge Progression – Science (Year 1-6)



<p>keys and other information records to identify, classify and describe living things and materials, and identify patterns that might be found in the natural environment.</p> <p>They should make their own decisions about what observations to make, what measurements to use and how long to make them for, and whether to repeat them; choose the most appropriate equipment to make</p>	<p>repeat readings when appropriate.</p> <p>Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Use test results to make predictions to set up further comparative and fair tests.</p> <p>Report and present findings from enquiries in oral and written</p>		<p><i>Examine sugar content of foods and try a healthy swap.</i></p> <p>Describe the ways in which nutrients and water are transported within animals, including humans.</p> <p><i>Compare human and cow.</i></p>		<p><i>classification keys.</i></p> <p>Give reasons for classifying plants and animals based on specific characteristics.</p> <p><i>Ornithologist discovering new species activity</i></p>		<p><i>it works.</i></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> <p><i>Extend to umbra and penumbra</i></p>	<p>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> <p><i>Charles Darwin - Natural Selection. Explore differences between behavioural and structural adaptations) 'The maggots have escaped'</i></p>
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Knowledge Progression – Science (Year 1-6)



<p>measurements and explain how to use it accurately. They should decide how to record data from a choice of familiar approaches; look for different causal relationships in their data and identify evidence that refutes or supports their ideas. They should use their results to identify when further tests and observations might be needed; recognise which secondary sources will be most useful to research their</p>	<p>forms such as displays and other presentations.</p> <p>This includes drawing conclusions and explaining how things happen and how far I trust the results found.</p> <p>Identify scientific evidence that has been used to support or refute ideas or arguments.</p>						<p>Electricity</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</p>	<p><i>activity.</i></p>
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Knowledge Progression – Science (Year 1-6)



<p>ideas and begin to separate opinion from fact.</p> <p>They should use relevant scientific language and illustrations to discuss, communicate and justify their scientific ideas and should talk about how scientific ideas have developed over time.</p> <p>These opportunities for working scientifically should be provided across Years 5 and 6 so that the expectations in</p>							<p>recognised symbols when representing a simple circuit in a diagram.</p>	
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Knowledge Progression – Science (Year 1-6)



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