

## SCIENCE PROGRESSION DOCUMENT



Science progression in EYFS:

	The world
2 year old	<p><b>16-26months</b> Explores objects by linking together different approaches: shaking, hitting, looking, feeling, tasting, mouthing, pulling, turning and poking. Remembers where objects belong. Matches parts of objects that fit together, e.g. puts lid on teapot.</p> <p><b>22-36months</b> Enjoys playing with small-world models such as a farm, a garage, or a train track. Notices detailed features of objects in their environment.</p>
Nursery	<p><b>30-50months</b> Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. Can talk about some of the things they have observed such as plants, animals, natural and found objects. 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>
Reception	<p><b>40-60months +</b> Looks closely at similarities, differences, patterns and change.</p> <p><b>Early Learning Goal</b> Children know about similarities and differences in relation to places, objects, materials and living things. They talk about the features of their own immediate environment and how environments might vary from one another. They make observations of animals and plants and explain why some things occur, and talk about changes.</p>

# SCIENCE PROGRESSION DOCUMENT



## YEAR 1

<p><b>Working scientifically:</b></p>	<p><b>Explaining Science (WS1)</b></p> <ul style="list-style-type: none"> <li>Remember some simple facts about science</li> <li>Use and remember science words during an activity</li> <li>Add science word labels (help) to diagrams</li> </ul> <p><b>Classification (WS2)</b></p> <ul style="list-style-type: none"> <li>Sort using simple yes/no statements</li> <li>Group by differences or similarities</li> </ul>	<p><b>Explaining Science (WS1)</b></p> <ul style="list-style-type: none"> <li>Remember some simple science facts</li> <li>Use and remember science words during an activity</li> <li>Add science word labels to diagrams</li> </ul> <p><b>Classification (WS2)</b></p> <ul style="list-style-type: none"> <li>Sort using yes/no statements</li> <li>Group by difference or similarity</li> <li>Link properties of materials to an application</li> </ul>	<p><b>Explaining Science (WS1)</b></p> <ul style="list-style-type: none"> <li>Remember some simple science facts</li> <li>Use and remember science words during an activity</li> <li>Add science word labels to diagrams (help)</li> </ul> <p><b>Classification (WS2)</b></p> <ul style="list-style-type: none"> <li>Sort by using yes/no statements</li> <li>Group by differences or similarities</li> </ul>	<p><b>Explaining Science (WS1)</b></p> <ul style="list-style-type: none"> <li>Remember some simple science facts</li> <li>Use and remember science words during an activity</li> <li>Describe what is happening using science</li> </ul> <p><b>Data, Tables &amp; Graphs (WS4)</b></p> <ul style="list-style-type: none"> <li>Use a simple table by recording in words and numbers</li> <li>Use a frame to add to pictograms</li> </ul> <p>Add to block charts and pictograms by counting</p>
<p><b>Topic Title</b></p>	<p>Animals including Humans</p>	<p>Materials</p>	<p>Plants</p>	<p>Seasons</p>
<p><b>NC Statement:</b></p>	<p>Identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals. (A1)            Identify and name a variety of common animals that are carnivores, herbivores and omnivores. (A2)            Describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets). (A3)            Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense. (A4)</p>	<p>Distinguish between an object and the material from which it is made. (M1)            Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. (M2)            Describe simple physical properties of a variety of everyday materials. (M3)            Compare and group together a variety of everyday materials on the basis of their simple physical properties. (M4)</p>	<p>Identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen. (P1)            Identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. (P2)</p>	<p>Observe the apparent movement of the sun during the day. (SW1)            Observe changes across the four seasons. (SW2)            Observe and describe weather associated with the seasons and how day length varies. (SW3)</p>



<p>Success Criteria:</p>	<p><u>Explaining science (WS1)</u> I can remember some simple science facts. I can use and remember science words during an activity I can add labels to diagrams.</p> <p><u>Classification (WS2)</u> I can sort using yes/no statements. I can group by similarity or difference.</p> <p><u>Subject knowledge (NC)</u> I can identify and name a variety of common animals that are birds, fish, amphibians, reptiles and mammals (A1) I can identify and name a variety of common animals that are carnivores, herbivores and omnivores (A2) I can describe and compare the structure of a variety of common animals (birds, fish, amphibians, reptiles, mammals and invertebrates, including pets) (A3) 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. (A4)</p>	<p><u>Explaining science (WS1)</u> I can remember some simple science facts. I can use and remember science words during an activity I can add labels to diagrams.</p> <p><u>Classification (WS2)</u> I can sort using yes/no statements. I can group by similarity or difference. I can link properties of a material to an application.</p> <p><u>Subject knowledge (NC)</u> I can distinguish between an object and the material from which it is made. (M1) I can identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock. (M2) I can describe simple physical properties of a variety of everyday materials. (M3) I can compare and group together a variety of everyday materials on the basis of their simple physical properties. (M4)</p>	<p><u>Explaining science (WS1)</u> I can remember some simple science facts. I can use and remember science words during an activity I can add labels to diagrams.</p> <p><u>Classification (WS2)</u> I can sort using yes/no statements. I can group by similarity or difference.</p> <p><u>Subject knowledge (NC)</u> I can identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen. (P1) I can identify and describe the basic structure of a variety of common flowering plants, including roots, stem/trunk, leaves and flowers. (P2)</p>	<p><u>Explaining science (WS1)</u> I can remember some simple science facts. I can use and remember science words during an activity. I can describe what is happening using science words.</p> <p><u>Data, Tables &amp; Graphs (WS4)</u> I can use a simple table by recording in words &amp; numbers. I can use a frame to add to pictograms. I can add to block charts and pictograms by counting up.</p> <p><u>Subject knowledge (NC)</u> I can observe the apparent movement of the sun during the day. (SW1) I can observe changes across the four seasons. (SW2) I can observe and describe weather associated with the seasons and how day length varies. (SW3)</p>
<p>Vocabulary:</p>	<p>Animals, Invertebrate (worm, spider, insect (various), woodlouse, centipede), fish, amphibian, reptile, bird, mammal, carnivore, herbivore, omnivore, head, neck, arm, elbow, hand, leg, knee, foot, face, ear, nose, eye, hair, mouth, teeth, sight, hear, smell, touch, taste</p>	<p>Solid, bending, squashing, twisting, stretching, similarity, difference, property, hard/soft, shiny/dull, bendy/not bendy, stretchy/stiff, transparent/opaque, rough/smooth, waterproof/not waterproof, absorbent/not absorbent, metal, plastic, glass, brick, paper, fabric, foil, elastic, wood</p>	<p>Plant, roots, stem, trunk, branches, leaves, flower (petals), fruit, bulb, seed, evergreen, deciduous, vegetables, (variety of common plant names, e.g. geranium, dandelion, oak, bean)</p>	<p>Season, sun, sky, autumn, winter, spring, summer, year, month, week, day, weather (various), temperature, weather, rainfall, daylength, sun, shadow</p>

# SCIENCE PROGRESSION DOCUMENT

YEAR 2



Working scientifically	<b>: Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember relevant science facts with confidence</li> <li>Use and remember science words over time</li> <li>Add science labels and information (help) to diagrams</li> </ul> <b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Measure with labelled divisions</li> <li>Use a simple table; record in numbers (tally)</li> <li>Construct block charts</li> </ul>	<b>Classification (WS2)</b> <ul style="list-style-type: none"> <li>Group by difference, similarity or change</li> <li>Link properties of materials to an application</li> </ul> <b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Use a range of equipment correctly</li> <li>Notice risk and know common dangers</li> <li>Follow short spoken and written instructions</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Suggest what might happen</li> <li>Suggest an idea to test from observations</li> <li>Follow short spoken and written instructions</li> </ul> <b>Analysis &amp; Evaluation (WS5)</b> <ul style="list-style-type: none"> <li>Describe simple patterns in data, charts</li> <li>Describe changes that have happened</li> <li>Suggest a different way to do things</li> </ul>	<b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember simple science facts with confidence</li> <li>Use and remember science words over time</li> <li>Add science labels and information (help) to diagrams</li> </ul> <b>Classification (WS2)</b> <ul style="list-style-type: none"> <li>Use a spider key with obvious differences</li> <li>Group using differences, similarities or changes</li> </ul>
Topic Title	Animals	Materials	Plants	Living Things
NC Statement:	Notice that animals, including humans, have offspring which grow into adults. (A1) Find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (A2) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (A3)	Identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard. (M1) Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (M2)	Observe and compare how seeds and bulbs grow into mature plants. (P1) Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (P2)	Explore and compare the differences between things that are living, dead, and things that have never been alive. (LT1) 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. (LT2) Identify and name a variety of plants and animals in their habitats, including microhabitats. (LT3) 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. (LT4)



<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Success Criteria:</p>	<p><b><u>Explaining Science (WS1)</u></b></p> <ul style="list-style-type: none"> <li>I can remember relevant science facts with confidence.</li> <li>I can use and remember science words over time.</li> <li>I can add science labels and information (help) to diagrams.</li> </ul> <p><b><u>Data, Tables and Graphs (WS4)</u></b></p> <ul style="list-style-type: none"> <li>I can measure with labelled divisions.</li> <li>I can use a simple table and record in numbers (tally).</li> <li>I can construct block charts.</li> </ul> <p><b><u>Subject Knowledge (NC)</u></b></p> <ul style="list-style-type: none"> <li>I can notice that animals, including humans, have offspring which grow into adults. (A1)</li> <li>I can find out about and describe the basic needs of animals, including humans, for survival (water, food and air). (A2)</li> <li>I can describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene. (A3)</li> </ul>	<p><b><u>Classification (WS2)</u></b></p> <ul style="list-style-type: none"> <li>I can group by difference, similarity or change.</li> <li>I can link properties of materials to an application.</li> </ul> <p><b><u>Designing Experiments (WS3)</u></b></p> <ul style="list-style-type: none"> <li>I can use a range of equipment correctly.</li> <li>I can notice risk and know common dangers.</li> <li>I can follow short spoken or written instructions.</li> </ul> <p><b><u>Subject Knowledge (NC)</u></b></p> <ul style="list-style-type: none"> <li>I can identify and compare the uses of a variety of everyday materials, including wood, metal, plastic, glass, brick/rock, and paper/cardboard. (M1)</li> <li>I can find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching. (M2)</li> </ul>	<p><b><u>Designing Experiments (WS3)</u></b></p> <ul style="list-style-type: none"> <li>I can follow short spoken and written instructions.</li> <li>I can suggest an idea to test from observations.</li> <li>I can suggest what might happen.</li> </ul> <p><b><u>Analysis and Evaluation (WS5)</u></b></p> <ul style="list-style-type: none"> <li>I can describe simple patterns in data and charts.</li> <li>I can describe changes that have happened.</li> <li>I can suggest a different way to do things.</li> </ul> <p><b><u>Subject Knowledge (NC)</u></b></p> <ul style="list-style-type: none"> <li>I can observe and compare how seeds and bulbs grow into mature plants. (P1)</li> <li>I can find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. (P2)</li> </ul>	<p><b><u>Explaining Science (WS1)</u></b></p> <ul style="list-style-type: none"> <li>I can remember simple science facts with confidence.</li> <li>I can use and remember science words over time.</li> <li>I can add science labels and information (help) to diagrams.</li> </ul> <p><b><u>Classification (WS2)</u></b></p> <ul style="list-style-type: none"> <li>I can use a spider key with obvious differences.</li> <li>I can group using differences, similarities or changes.</li> </ul> <p><b><u>Subject Knowledge (NC)</u></b></p> <ul style="list-style-type: none"> <li>I can explore and compare the differences between things that are living, dead, and things that have never been alive. (LT1)</li> <li>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. (LT2)</li> <li>I can identify and name a variety of plants and animals in their habitats, including microhabitats. (LT3)</li> <li>I can 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. (LT4)</li> </ul>
<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Vocabulary:</p>	<p>Growth, reproduction, offspring, life-cycle (stages for examples, e.g. human, frog, butterfly, etc), baby, offspring, toddler, child, teenager, adult, water, food (nutrition), air (breathing, respiration), diet, balanced, obesity, starvation, exercise, fitness (heart rate/pulse), hygiene, microbes (bacteria, fungi, viruses)</p>	<p>Material types (e.g. wood, metal, plastic, wool, cotton, paper, cork, rock, etc), solid, liquid, gas, waterproof, hard, soft, flexible, stretch, bend, twist, squash, shiny, dull, warm, cold, colour, more, less, fluid, flow</p>	<p>Grow, seed, bulb, (tuber), leaf, root, stem, flower, fruit, germination, seedling, water, light, temperature, reproduction</p>	<p>Living, dead, non-living, movement, making energy (respiration), sensitivity, growth, reproduction, getting rid of waste (excretion), nutrition, habitat, microhabitat, adapted, adaptation, conditions, light, temperature, water, humidity, food chain</p>

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YEAR 3



Working scientifically:	<b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Use a frame to construct simple tables</li> <li>Draw bars on bar charts</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember science words used before</li> <li>Begin to use science models to describe</li> <li>Add labels and information to diagrams</li> </ul>	<b>Making Conclusions (WS5)</b> <ul style="list-style-type: none"> <li>Describe simple patterns in data, charts and graphs</li> <li>Describe my results by linking cause and effect</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember science words I have used before</li> <li>Begin to use science models to describe</li> <li>Add labels and information to diagrams</li> </ul>	<b>Classification (WS2)</b> <ul style="list-style-type: none"> <li>Use large spider key with obvious differences</li> <li>Create groups for sorting</li> <li>Combine the properties of materials required for an application</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember science words used before</li> <li>Begin to use science models to describe</li> <li>Add labels and information to diagrams</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Predict cause and effect</li> <li>Follow short written instructions</li> <li>Select suitable equipment</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember science words I have used before</li> <li>Begin to use a science model to describe</li> <li>Add labels and information to diagrams</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Predict cause and effect</li> <li>Select suitable equipment (know use)</li> <li>Follow written instructions</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Remember simple science words used before</li> <li>Begin to use science models to help describe</li> <li>Add labels and information to diagrams</li> </ul>
Topic Title	Animals including Humans	Plants	Rocks	Light	Forces/Magnets
NC Statement:	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. (A1) Identify that humans and some animals have skeletons and muscles for support, protection and movement. (A2)	Identify & describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. (P1) Explore the requirements for plant life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. (P2) Investigate the way in which water is transported within plants. (P3) Explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (P4)	Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (R1) Describe in simple terms how fossils are formed when things that have lived are trapped within rock. (R2) Recognise that soils are made from rocks and organic matter. (R3)	Recognise that they need light in order to see things and that dark is the absence of light. (L1) Notice that light is reflected from surfaces. (L2) Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (L3) Recognise that shadows are formed when the light from a light source is blocked by a solid object. (L4) Find patterns in the way that the size of shadows change. (L5)	Compare how things move on different surfaces. (F1) Notice that some forces need contact between two objects and some forces act at a distance. (F2) Observe how magnets attract or repel each other and attract some materials and not others. (F3) 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. (F4) Describe magnets as having two poles. Predict whether two magnets will attract or repel each other, depending on which poles are facing. (F5)

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Success Criteria:	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can remember science words used before.</li> <li>• I can begin to use science models to describe.</li> <li>• I can add labels and information to diagrams.</li> </ul> <p>Data, Tables and Graphs (WS4)</p> <ul style="list-style-type: none"> <li>• I can use a frame to construct simple tables.</li> <li>• I can draw bars on bar charts.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• 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. (A1)</li> <li>• I can identify that humans and some animals have skeletons and muscles for support, protection and movement. (A2)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can remember science words I have used before.</li> <li>• I can begin to use science models to help describe.</li> <li>• I can add labels and information to diagrams.</li> </ul> <p>Making Conclusions (WS5)</p> <ul style="list-style-type: none"> <li>• I can describe simple patterns in data, charts and graphs.</li> <li>• I can describe my results by linking cause and effect.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can predict cause and effect.</li> <li>• I can identify cause and effect in an investigation.</li> <li>• I can suggest a range for a variable.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can identify and describe the functions of different parts of flowering plants: roots, stem, leaves and flowers. (P1)</li> <li>• I can explore the requirements for plant life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant. (P2)</li> <li>• I can investigate the way in which water is transported within plants. (P3)</li> <li>• I can explore the role of flowers in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. (P4)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can remember science words used before.</li> <li>• I can begin to use science models to help describe.</li> <li>• I can add labels and information to diagrams.</li> </ul> <p>Classification (WS2)</p> <ul style="list-style-type: none"> <li>• I can use large spider key with obvious differences.</li> <li>• I can create groups for sorting.</li> <li>• I can combine properties of materials required for an application.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. (R1)</li> <li>• I can describe in simple terms how fossils are formed when things that have lived are trapped within rock. (R2)</li> <li>• I can recognise that soils are made from rocks and organic matter. (R3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can remember science words I have used before.</li> <li>• I can begin to use science models to help describe.</li> <li>• I can add labels and information to diagrams.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can predict cause and effect.</li> <li>• I can follow short written instructions.</li> <li>• I can select suitable equipment.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can recognise that they need light in order to see things and that dark is the absence of light. (L1)</li> <li>• I can notice that light is reflected from surfaces. (L2)</li> <li>• I can recognise that light from the sun can be dangerous and that there are ways to protect their eyes. (L3)</li> <li>• I can recognise that shadows are formed when the light from a light source is blocked by a solid object. (L4)</li> <li>• I can find patterns in the way that the size of shadows change. (L5)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can remember simple science words used before.</li> <li>• I can begin to use science models to help describe.</li> <li>• I can add labels and information to diagrams.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can predict cause and effect.</li> <li>• I can select suitable equipment (know use).</li> <li>• I can follow written instructions.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can compare how things move on different surfaces. (F1)</li> <li>• I can notice that some forces need contact between two objects and some forces act at a distance. (F2)</li> <li>• I can observe how magnets attract or repel each other and attract some materials and not others. (F3)</li> <li>• 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. (F4)</li> <li>• I can describe magnets as having two poles. I can predict whether two magnets will attract or repel each other, depending on which poles are facing. (F5)</li> </ul>
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<p>Vocabulary:</p>	<p>Nutrition, nutrients, diet (balanced/unbalanced), sugar, protein, fat, vitamins, minerals, water, energy, oxygen, feeding, eating, photosynthesis, circulation, blood, heart, vertebrate, invertebrate, skeleton (simple examples of bones), support, protection, movement                  Science Model: Energy transfer&amp; AO (Skeleton, Life Cycle)</p>	<p>Grow, seed, bulb, (tuber), leaf (petiole), root (root hairs), stem, flower (petals, sepals, stamens, ovary, pollen, eggs), fruit, germination, seedling, water, light, temperature, nutrients, reproduction, pollination (wind, insect), fertilisation, seed, dispersal                  Science Model: AO (Plant structure &amp; Plant Life Cycle)</p>	<p>Rock (types), smooth, shiny, rough, crumbly, grainy, crystals, hard, soft, cold (etc), fossil (types), sediment, layers, pressure, soil, organic matter, vegetation, compost                  Science Model: Particles</p>	<p>Light, dark/darker/darkest, bright/brighter/brightest, dim, light source (various), eye, reflect, reflective, shiny, dull, shadow, block (transparent, opaque)                  Science Model: Energy Transfer</p>	<p>Force, push, pull, contact force, distance force, gravity, force arrow, movement (associated terminology), magnetic, magnetism, poles (north, south), attract, repel, non-magnetic                  Science Model: Force Arrows</p>
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# SCIENCE PROGRESSION DOCUMENT

YEAR 4



Working scientifically:	<b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Construct simple tables</li> <li>Construct bar charts</li> <li>Plot coordinates in first quadrant</li> </ul> <b>Classification (WS2)</b> <ul style="list-style-type: none"> <li>Use spider keys with fine differences</li> <li>Create appropriate groups for sorting</li> <li>Describe properties required for an application</li> </ul>	<b>Making Conclusions (WS5)</b> <ul style="list-style-type: none"> <li>Describe patterns, trends &amp; relationships</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use simple science words correctly</li> <li>Use simple models to help me describe</li> <li>Annotate diagrams</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Make a relationship prediction (trend)</li> <li>Notice obvious risks and describe safe use</li> <li>Plan a fair test (select variables)</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use science words correctly</li> <li>Use a science model to describe</li> <li>Annotate diagrams to help describe</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Make a prediction (trend)</li> <li>Plan a fair test (select variables)</li> <li>Identify the data range and interval</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use science words correctly</li> <li>Use science models to describe</li> <li>Annotate diagrams</li> </ul>	<b>Making Conclusions (WS5)</b> <ul style="list-style-type: none"> <li>Describe patterns, trends and relationships</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use science to explain</li> <li>Use science words correctly</li> <li>Use science models to describe</li> <li>Annotate diagrams</li> </ul>
Topic Title	Living things and their habitats	Animals including humans	States of matter	Sound	Electricity
NC Statement:	Recognise that living things can be grouped in a variety of ways. (LT1) Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (LT2) Recognise that environments can change and that this can sometimes pose dangers to living things. (LT3)	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. (A1) Identify that humans and some animals have skeletons and muscles for support, protection and movement. (A2)	Compare and group materials together, according to whether they are solids, liquids or gases. (SM1) Observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C). (SM2) Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (SM2)	Identify how sounds are made, associating some of them with something vibrating. (S1) Recognise that vibrations from sounds travel through a medium to the ear. (S2) Find patterns between the pitch of a sound and features of the object that produced it. (S3) Find patterns between the volume of a sound and the strength of the vibrations that produced it. (S4) Recognise that sounds get fainter as the distance from the sound source increases. (S5)	Identify common appliances that run on electricity. (E1) Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. (E2) 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. (E3) Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. (E4) Recognise some common conductors and insulators, and associate metals with being good conductors. (E5)

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<p>Success Criteria:</p>	<p>Classification (WS2)</p> <ul style="list-style-type: none"> <li>• I can use spider keys with fine differences.</li> <li>• I can create appropriate groups for sorting.</li> <li>• I can describe properties required for an application.</li> </ul> <p>Data, Tables and Graphs (WS4)</p> <ul style="list-style-type: none"> <li>• I can construct simple tables.</li> <li>• I can construct bar charts.</li> <li>• I can plot coordinates in the first quadrant.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can recognise that living things can be grouped in a variety of ways. (LT1)</li> <li>• I can explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment. (LT2)</li> <li>• I can recognise that environments can change and that this can sometimes pose dangers to living things. (LT3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use simple science words correctly.</li> <li>• I can use simple models to help me describe.</li> <li>• I can annotate diagrams.</li> </ul> <p>Making Conclusions (WS5)</p> <ul style="list-style-type: none"> <li>• I can describe patterns, trends &amp; relationships.</li> <li>• I can use science to explain.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can describe the simple functions of the basic parts of the digestive system in humans. (A1)</li> <li>• I can identify the different types of teeth in humans and their simple functions. (A2)</li> <li>• I can construct and interpret a variety of food chains, identifying producers, predators and prey. (A3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use science words correctly.</li> <li>• I can use a science model to describe.</li> <li>• I can annotate diagrams to help describe.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can make a relationship prediction (trend).</li> <li>• I can notice obvious risks &amp; describe safe use.</li> <li>• I can plan a fair test (select variables).</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can compare and group materials together, according to whether they are solids, liquids or gases. (SM1)</li> <li>• I can observe that some materials change state when they are heated or cooled, and measure the temperature at which this happens in degrees Celsius (°C). (SM2)</li> <li>• I can identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. (SM3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use science words correctly.</li> <li>• I can use science models to describe.</li> <li>• I can annotate diagrams.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can make a prediction (trend).</li> <li>• I can plan a fair test (select variables).</li> <li>• I can identify the data range and intervals.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can identify how sounds are made, associating some of them with something vibrating. (S1)</li> <li>• I can recognise that vibrations from sounds travel through a medium to the ear. (S2)</li> <li>• I can find patterns between the pitch of a sound and features of the object that produced it. (S3)</li> <li>• I can find patterns between the volume of a sound and the strength of the vibrations that produced it. (S4)</li> <li>• I can recognise that sounds get fainter as the distance from the sound source increases. (S5)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use science words correctly.</li> <li>• I can use science models to describe.</li> <li>• I can annotate diagrams.</li> </ul> <p>Making Conclusions (WS5)</p> <ul style="list-style-type: none"> <li>• I can describe patterns, trends &amp; relationships.</li> <li>• I can use science to explain.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can identify common appliances that run on electricity. (E1)</li> <li>• I can construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. (E2)</li> <li>• 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. (E3)</li> <li>• 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. (E4)</li> <li>• I can recognise some common conductors and insulators, and associate metals with being good conductors. (E5)</li> </ul>
<p>Vocabulary:</p>	<p>Environment, habitat, micro-habitat, key, classification (genus, species), (binomial name), animal, vertebrate, fish, amphibian, reptile, bird, mammal, invertebrate, snails, slugs, spiders, woodlice, insects, worms, plants, trees, flowering plants (grasses, etc), non-flowering plants (conifers, ferns, mosses)</p> <p>Science Models: Classification</p>	<p>Nutrition, nutrients, diet (balanced/unbalanced), sugar, protein, fat, vitamins, minerals, water, energy, oxygen, feeding, eating, photosynthesis, circulation, blood, heart, vertebrate, invertebrate, skeleton (simple examples of bones), support, protection, movement</p> <p>Science Model: Energy transfer &amp; AO (Skeleton, Life Cycle)</p>	<p>State, solid, liquid, gas, characteristic, property, particle, heat, energy, (bond/attraction), heating, cooling, melting, freezing, evaporating, condensing, water cycle</p> <p>Science Model: Particles</p>	<p>Sound, vibration, volume, pitch, high/low, quiet/loud, tension</p> <p>Science Model: Energy Transfer</p>	<p>Electricity, energy, source, renewable/non-renewable, circuit, component, battery/cell, bulb, buzzer, motor, series, connector/wire, switch, conductor, insulator,</p> <p>Science Model: Energy Transfer</p>

# SCIENCE PROGRESSION DOCUMENT

YEAR 5



Working scientifically:	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Use knowledge and understanding to explain prediction</li> <li>Plan fair tests (range, interval, readings)</li> <li>Write an ordered method</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words</li> <li>Use science models to describe/explain</li> <li>Draw and annotate diagrams</li> </ul>	<b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Measure in and convert standard units</li> <li>Construct complex tables</li> <li>Construct charts and graphs</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words</li> <li>Use science model to describe/explain</li> <li>Draw and annotate diagrams</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Select suitable equipment (scale)</li> <li>Plan fair tests (all variables)</li> <li>Collect sufficient repeat readings (&gt;5)</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex words</li> <li>Use science models to describe/explain</li> <li>Draw and annotate diagrams</li> </ul>	<b>Making Conclusions (WS5)</b> <ul style="list-style-type: none"> <li>Describe patterns and trends</li> <li>Use data in conclusions</li> <li>Use relevant science to explain</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex words</li> <li>Use science model to describe/explain</li> <li>Draw and annotate diagrams</li> </ul>	<b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Construct a complex table</li> <li>Construct charts and graphs</li> <li>Join coordinates</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex words</li> <li>Use science model to describe/explain</li> <li>Draw and annotate diagrams</li> </ul>
Topic Titles	Living things and their habitats	Animals including Humans	Properties and changes in materials	Earth and space	Forces
NC Statement:	<p>Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (LT1)</p> <p>Describe the life process of reproduction in some plants and animals (sexual/asexual). (LT2)</p>	<p>Describe the changes as humans develop to old age (link to school policy on sex education). (A1)</p>	<p>Compare and group together everyday materials on the basis of properties (e.g. their hardness, solubility, transparency, conductivity (electrical/thermal) and response to magnets. (M1)</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. (M2)</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. (M3)</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (M4)</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes. (M5)</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. (M6)</p>	<p>Describe the movement of the earth, and other planets, relative to the sun in the solar system. (ES1)</p> <p>Describe the movement of the moon relative to the earth. (ES2)</p> <p>Describe the sun, earth and moon as approximately spherical bodies. (ES3)</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. (ES4)</p>	<p>Explain that unsupported objects fall towards the earth because of the force of gravity acting between earth and the falling object. (F1)</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces. (F2)</p> <p>Recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (F3)</p>

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<p style="writing-mode: vertical-rl; transform: rotate(180deg);">Success Criteria:</p>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>•I can use complex science words.</li> <li>•I can use science models to describe and explain.</li> <li>•I can draw and annotate diagrams.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>•I can use knowledge and understanding to explain my prediction.</li> <li>•I can plan a fair test (range, interval, readings).</li> <li>•I can write an ordered method.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>•I can describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. (LT1)</li> <li>•I can describe the life process of reproduction in some plants and animals (sexual/asexual). (LT2)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>•I can use complex science words.</li> <li>•I can use a science model to describe and explain.</li> <li>•I can draw and annotate diagrams.</li> </ul> <p>Data, Tables and Graphs (WS4)</p> <ul style="list-style-type: none"> <li>•I can measure in and convert standard units.</li> <li>•I can construct complete tables.</li> <li>•I can construct charts and graphs.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>•I can describe the changes as humans develop to old age (link to school policy on sex education). (A1)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>•I can use complex science words.</li> <li>•I can use a science model to describe and explain.</li> <li>•I can draw and annotate diagrams.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>•I can select suitable equipment (scale).</li> <li>•I can plan fair tests (all variables).</li> <li>•I can collect sufficient repeated readings (&gt;5).</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>•I can compare and group together everyday materials on the basis of properties (eg. their hardness, solubility, transparency, conductivity (electrical/thermal) and response to magnets. (M1)</li> <li>•I know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution. (M2)</li> <li>•I can use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. (M3)</li> <li>•I can give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. (M4)</li> <li>•I can demonstrate that dissolving, mixing and changes of state are reversible changes. (M5)</li> <li>•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. (M6)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>•I can use complex science words.</li> <li>•I can use a science model to describe and explain.</li> <li>•I can draw and annotate diagrams.</li> </ul> <p>Making Conclusions (WS5)</p> <ul style="list-style-type: none"> <li>•I can describe patterns and trends.</li> <li>•I can use data in conclusions.</li> <li>•I can use relevant science to explain.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>•I can describe the movement of the earth, and other planets, relative to the sun in the solar system. (ES1)</li> <li>•I can describe the movement of the moon relative to the earth.(ES2)</li> <li>•I can describe the sun, earth and moon as approximately spherical bodies. (ES3)</li> <li>•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. (ES4)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>•I can use complex science words.</li> <li>•I can use a science model to describe and explain.</li> <li>•I can draw and annotate diagrams.</li> </ul> <p>Data, Tables and Graphs (WS4)</p> <ul style="list-style-type: none"> <li>•I can construct a complex table.</li> <li>•I can construct charts and graphs.</li> <li>•I can join coordinates.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>•I can explain that unsupported objects fall towards the earth because of the force of gravity acting between earth and the falling object. (F1)</li> <li>•I can identify the effects of air resistance, water resistance and friction that act between moving surfaces. (F2)</li> <li>•I can recognize that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect. (F3)</li> </ul>
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<p>Vocabulary:</p>	<p>Life cycle (various, associated terminology), reproduction (internal / external), gamete, petals, sepals, carpel, stigma, ovary, anther, stamen, pollen, pollination, fertilisation, dispersal Science Model: AO (Life Cycles)</p>	<p>Baby, toddler, child, adolescent, adult, offspring, puberty, pubic hair, egg, sperm, testes, ovaries, oviduct, uterus, cervix, vagina, vulva, sperm duct, foreskin, scrotum, glands, erection, ejaculation, intercourse, fertilisation, gamete. Science Model: AO (Human Life Cycle)</p>	<p>Material (types), properties (types), solid, liquid, gas, solution, mixture, particle, energy, dissolve (solute, solvent, saturation), filtering, sieving, evaporating, reversible, irreversible Science Model: Particles</p>	<p>Key Terminology: Solar system, planets (names), star, sun, Earth, moon, gravity, orbit (elliptical), rotation, axis, poles, equator, northern/southern hemisphere, shadow, day, (lunar) month, year, leap year, eclipse, luminous, non-luminous, phases (names) Science Models: Energy transfer, Force Arrows &amp; Big-picture (Solar System)</p>	<p>Force, contact, non-contact, push, pull, friction, air resistance, water resistance, up-thrust, drag, gravity, balanced, unbalanced, force arrow, accelerate, decelerate, Newton, force meter, mass, multiplier, lever, pulley, gear, pivot, fulcrum, effort, load, machine Science Models: Force Arrow</p>
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# SCIENCE PROGRESSION DOCUMENT

YEAR 6



Working scientifically:	<b>Classification (WS2)</b> <ul style="list-style-type: none"> <li>Construct spider and number keys</li> <li>Group and sub-group by fine observations</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Show secure knowledge and understanding of science</li> <li>Use complex science words correctly</li> <li>Draw diagrams to describe/explain</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Use knowledge and understanding to generate a hypothesis</li> <li>Plan for repeat readings (&gt;3)</li> <li>Write a reliable ordered method</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words correctly</li> <li>Use science models to explain</li> <li>Draw diagrams to describe/explain</li> </ul>	<b>Data, Tables &amp; Graphs (WS4)</b> <ul style="list-style-type: none"> <li>Construct a complex table</li> <li>Construct charts and graphs</li> <li>Draw trend lines</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words correctly</li> <li>Use a science model to explain</li> <li>Draw diagrams to describe/explain</li> </ul>	<b>Making Conclusions (WS5)</b> <ul style="list-style-type: none"> <li>Describe changing patterns, trends and relationships</li> <li>Use primary / secondary data in my conclusions</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words correctly</li> <li>Use science models to explain</li> <li>Draw diagrams to describe and explain</li> </ul>	<b>Designing Experiments (WS3)</b> <ul style="list-style-type: none"> <li>Use knowledge and understanding to make a hypothesis</li> <li>Plan a reliable fair test</li> <li>Plan to minimise risk &amp; act on safety suggestions</li> </ul> <b>Explaining Science (WS1)</b> <ul style="list-style-type: none"> <li>Use complex science words correctly</li> <li>Use a science model to explain</li> <li>Draw diagrams to help describe/explain</li> </ul>
Topic Titles	Living things and their habitats	Animals including Humans	Evaluation and inheritance	Light	Electricity
NC Statement:	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. (LT1) Give reasons for classifying plants and animals based on specific characteristics. (LT2)	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. (A1) Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function. (A2) Describe the ways in which nutrients and water are transported within animals, including humans. (A3)	Recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. (E1) Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (E2) Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (E13)	Recognise that light appears to travel in straight lines. (L1) 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. (L2) 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. (L3) Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (L4)	Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit. (E1) 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. (E2) Use recognised symbols when representing a simple circuit in a diagram. (E3)

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<p>Success Criteria:</p>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can show secure knowledge and understanding of science.</li> <li>• I can use complex science words correctly.</li> <li>• I can draw diagrams to describe and explain.</li> </ul> <p>Classification (WS2)</p> <ul style="list-style-type: none"> <li>• I can construct spider and number keys.</li> <li>• I can group and sub-group by fine observations.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can 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. (LT1)</li> <li>• I can give reasons for classifying plants and animals based on specific characteristics. (LT2)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use complex science words correctly.</li> <li>• I can use science models to explain.</li> <li>• I can draw diagrams to describe and explain.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can use knowledge and understanding to generate a hypothesis.</li> <li>• I can plan for repeat readings (&gt;3).</li> <li>• I can write a reliable ordered method.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood. (A1)</li> <li>• I can recognise the impact of diet, exercise, drugs and lifestyle on the way my body functions. (A2)</li> <li>• I can describe the ways in which nutrients and water are transported within animals, including humans. (A3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use complex science words correctly.</li> <li>• I can use a science model to explain.</li> <li>• I can draw diagrams to describe and explain.</li> </ul> <p>Data, Tables and Graphs (WS4)</p> <ul style="list-style-type: none"> <li>• I can construct a complex table.</li> <li>• I can construct charts and graphs.</li> <li>• I can draw trend lines.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can recognise that living things have changed over time and that fossils provide information about living things that inhabited the earth millions of years ago. (E1)</li> <li>• I can recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents. (E2)</li> <li>• I can identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution. (E3)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use complex science words correctly.</li> <li>• I can use science models to explain.</li> <li>• I can draw diagrams to describe &amp; explain.</li> </ul> <p>Designing Experiments (WS5)</p> <ul style="list-style-type: none"> <li>• I can describe changing patterns, trends &amp; relationships.</li> <li>• I can use primary and secondary data in my conclusions.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• I can recognise that light appears to travel in straight lines. (L1)</li> <li>• I can 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. (L2)</li> <li>• I 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. (L3)</li> <li>• I can use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. (L4)</li> </ul>	<p>Explaining Science (WS1)</p> <ul style="list-style-type: none"> <li>• I can use complex science words correctly.</li> <li>• I can use a science model to explain.</li> <li>• I can draw diagrams to help describe and explain.</li> </ul> <p>Designing Experiments (WS3)</p> <ul style="list-style-type: none"> <li>• I can use knowledge and understanding to make a hypothesis.</li> <li>• I can plan a reliable fair test.</li> <li>• I can plan to minimise risk and act on safety suggestions.</li> </ul> <p>Subject Knowledge (NC)</p> <ul style="list-style-type: none"> <li>• 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. (E1)</li> <li>• 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 switches. (E2)</li> <li>• I can use recognised symbols when representing a simple circuit in a diagram. (E3)</li> </ul>
<p>Vocabulary:</p>	<p>Classification, binomial, kingdom (phylum, class, order, family, genus, species), vertebrate, invertebrate, microorganisms, bacteria, fungi, virus, (protist), classification characteristics (various), spider/number key, diversity, variation Science Model: Classification</p>	<p>Organs (various), circulatory system, circulation, blood, plasma, red blood cells, oxygenated, deoxygenated, exchange, artery, vein, heart, heart chambers, pulse, recovery time, drugs (various), alcohol, nicotine, tar Science Model: 'Big-picture'</p>	<p>Fossil, extinction, variation, inheritance, feature, adaptation (various), species, natural selection, evolution Science Model: AO (Human Life Cycle)</p>	<p>Light source, luminous, non-luminous, energy, absorbed, reflected, transmitted, scattered, shiny, opaque, reflective, transparent, translucent, image, plane, concave, convex, mirror, shadow. Science Model: Energy Transfer</p>	<p>Circuit, electricity, energy, cell, battery, positive terminal, negative terminal, voltage (V), Amps (A), current, wire, insulator, resistance, resistor, filament, lamp, buzzer, motor, switch, series, Voltmeter, Ammeter Science Model: Energy Transfer</p>

## SCIENCE PROGRESSION DOCUMENT

### KS3 Science:

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims The national curriculum for science aims to ensure that all pupils:

- ♣ develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- ♣ develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- ♣ are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

### GCSE Science:

Science is changing our lives and is vital to the world's future prosperity, and all students should be taught essential aspects of the knowledge, methods, processes and uses of science. They should be helped to appreciate the achievements of science in showing how the complex and diverse phenomena of the natural world can be described in terms of a number of key ideas relating to the sciences which are inter-linked, and which are of universal application.

These key ideas include:

- the use of conceptual models and theories to make sense of the observed diversity of natural phenomena
- the assumption that every effect has one or more cause
- that change is driven by interactions between different objects and systems
- that many such interactions occur over a distance and over time
- that science progresses through a cycle of hypothesis, practical experimentation, observation, theory development and review
- that quantitative analysis is a central element both of many theories and of scientific methods of inquiry.

The sciences should be taught in ways that ensure students have the knowledge to enable them to develop curiosity about the natural world, insight into working scientifically, and appreciation of the relevance of science to their everyday lives, so that students:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics;
- develop understanding of the nature, processes and methods of science, through different types of scientific enquiry that help them to answer scientific questions about the world around them;
- develop and learn to apply observational, practical, modelling, enquiry, problem-solving skills and mathematical skills, both in the laboratory, in the field and in other environments;
- develop their ability to evaluate claims based on science through critical analysis of the methodology, evidence and conclusions, both qualitatively and quantitatively.





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Careers utilising science skills:

