

Science Ambition

‘Science is the key that opens doors to a world of innovative, life-changing possibilities’

At Pineham Barns Primary School, the purpose of Science education is to equip our pupils with the knowledge and skills they need to make sense of the world around them, revelling in its wonders. Regardless of our childrens’ backgrounds, they will be given tools to effectively question, not accept, results to hands-on, practical experiments which take advantage of our school’s unique indoor and outdoor facilities. Through delivering our Eco Curriculum, we aim to inspire children to like healthy and fulfilled lives and citizens of the world who make positive contributions towards building a more sustainable future for all. Innovation and high expectations are encouraged, taking all of our children beyond their everyday experiences and preparing them to enter an ever-changing, highly-competitive world.

| <u>Domains of Knowledge (bold):</u> | <u>Key Concepts:</u> |
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| <ol style="list-style-type: none"> 1. All Around Us (Outdoor learning) Plants Living things Habitats Rocks Evolution 2. How the World Works Earth and Space Seasonal Changes Sustainability Light Forces Electricity 3. Conducting and Communicating Comparisons Identifying patterns Reviewing and explaining Evaluating 4. Eco Science Sustainability Recycling Climate Change Pollution 5. Uses of Objects Materials and their properties Electricity Light Sound Forces and magnets | <ul style="list-style-type: none"> • Investigating – Scientific skills • Energy - Physics • Health - Biology • Change - Biology • The Earth – Biology, Physics • Organisms - Biology • Evolution - Biology • Materials - Chemistry |

End Points: *(Highlighted throughout the LTP)*

- By using their knowledge gained throughout their time at Pineham Barns Primary School our children will be able to confidently challenge and question whatever environment surrounds them, revelling in its wonders.
- **Regardless of their background, our children will be able to develop a line of enquiry based on observations of the real world.**
- **Have a broad understanding of all areas of Science, our Key Domains and Concepts, independently and intellectually applying it to real life situations.**
- **The ability to critically analyse, present and compare data.**
- **An awareness of how to positively contribute to the world around them and the importance of making sustainable and innovative choices in order to tackle some of the major environmental issues facing our planet.**

Pre Year 1 Progressive Science Objectives – Based on EYFS Development Matters

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| <p>Planning Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world. (Understanding the World: The World)</p> | <p>Obtaining and presenting evidence Talk about some of the things they have observed such as plants, animals, natural and found objects (Understanding the World: The World) Children follow instructions involving several ideas or actions. (Communication and Language: Understanding)</p> | <p>Considering evidence and evaluating Talks about why things happen and how things work. (Understanding the World: The World) They answer ‘how’ and ‘why’ questions about their experiences and in response to Science related events/findings. (communication and language: Understanding) They develop their own narratives and explanations by connecting ideas or events. (Communication and Language: Speaking)</p> |
| <p>Living things and their habitats Children know about similarities and differences in relation and living things. (Understanding the World: The World) Discuss the features of their own immediate environment and how environments might vary from one another. (Understanding the World: The World)</p> | <p>Plants They make observations of plants and explain why some things occur, and talk about changes.(Understanding the World: The World) Developing an understanding of growth, decay and changes over time. (Understanding the World: The World)</p> | <p>Materials and their Properties Children know about similarities and differences in relation objects and materials. (Understanding the World: The World) They talk about and describe the features of their own immediate environment and how environments might vary from one another. (Understanding the World: The World)</p> |
| <p>Animals including humans They make observations of animals and explain why some things occur, and talk about changes. (Understanding the World: The World)</p> | <p>Heathy Living Children know the importance for good health of physical exercise, and a healthy diet, and talk about ways to keep healthy and safe. (Physical Development: Health and Self Care)</p> | <p>Eco Curriculum To show care and concern for living things and the environment. (Understanding the World: The World)</p> |

| Length of each unit: | Key Concepts Covered: | Domains of Knowledge Covered: | Assessment Opportunities: |
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| <p>Each area is covered frequently throughout the year. It is flexible so that it fits with the theme in Reception. See additional planning.</p> | <ul style="list-style-type: none"> Investigating – Scientific skills Health - Biology Change - Biology The Earth – Biology, Physics Organisms - Biology Materials - Chemistry | <p>All Around Us – Habitats and Animals Including Humans, Healthy Living, Plants. How the World Works – Materials Conducting and Communicating – Experiments Eco Science – Eco Curriculum from Understanding the World. Uses of Objects – Materials</p> | <p>Questioning Observations Regular AFL during independent learning activities and group activities.</p> |
| Cross-Curricular Opportunities: | Opportunities for Outdoor Learning: | Eco Science Links: | |
| <p>Art, DT, Literacy, Maths</p> | <p>Outdoor Science Investigation Area in Reception. Using the outdoors to identify animals, plants etc. Welly Walks to explore sound pollution and habitats.</p> | <p>Recycling – Properties of Materials Plastic Pollution – Care and concern for the environment (Eco Curriculum)</p> | |

Year One Progressive Science Objectives

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| <p>Planning Ask questions (for example, 'How? Why? What will happen if...?' and decide how they might find answers to them.</p> <p>Use first hand experiences and simple information sources to answer questions.</p> <p>Think about what might happen before deciding what to do.</p> <p>Recognise when a test comparison is unfair.</p> <p>Communicates simple planning for investigations.</p> | <p>Obtaining and presenting evidence Follow simple instructions to control the risks to themselves and others.</p> <p>Explore using the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements.</p> <p>Communicate what happened in a small variety of ways (e.g. simple Tally Charts or drawings).</p> <p>Is able to make simple records.</p> | <p>Considering evidence and evaluating Make simple comparisons (for example hand span or shoe size) and identify simple patterns or associations.</p> <p>Compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.</p> <p>Review their work and explain what they did to others.</p> <p>Is able to make simple verbal evaluations of their work.</p> |
| <p>Plants To identify and name a variety of common plants, including garden plants, wild plants and trees, and those classified as deciduous and evergreen.</p> <p>To know that planting flowers and trees can help the environment.</p> <p>To recognise and describe the basic structure of a variety of common plants including roots, stem, leaves and flowers.</p> <p>Seasonal Changes Observe the changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons including how day length varies.</p> | <p>Humans and other animals Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals including pets).</p> <p>Identify, name and draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p> <p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> | <p>Everyday materials Distinguish between an object and the material from which it is made.</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their physical properties.</p> <p>To recognise which materials can be recycled and those that cannot.</p> |

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| <p>Length of each unit: Flexible: Recommended 6 Weeks for each unit. Obtaining and presenting evidence and Considering evidence, planning and evaluating is filtered in throughout (see medium and short term planning) When to teach each unit is discreet – it can be decided by the teacher to try and link with Topics for each half term.</p> | <p>Key Concepts Covered:</p> <ul style="list-style-type: none"> Investigating – Scientific skills Health - Biology Change - Biology The Earth – Biology, Physics Organisms - Biology Evolution - Biology Materials - Chemistry | <p>Domains of Knowledge Covered:</p> <p>All Around Us – Plants How the World Works – Seasonal Changes Conducting and Communicating – Experiments Eco Science – See green text throughout Uses of Objects – Materials</p> | <p>Assessment Opportunities:</p> <p>Concept Cartoons End of topic quiz Regular AFL during lessons</p> |
| <p>Cross-Curricular Opportunities: Art, DT, Literacy – Story of the Three Little Pigs.</p> | <p>Opportunities for Outdoor Learning: Using the vegetable patches for planting vegetables. Welly Walks to observe changes in seasons, plants and wildlife.</p> | <p>Eco Science Links: Recycling – Materials Plastic Pollution – Materials Climate Change – Plants</p> | |

Year Two Progressive Science Objectives

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| <p>Planning Ask questions (for example, ‘How? Why? What will happen if...?’ and decide how they might find answers to them.</p> <p>Use first hand experiences and simple information sources to answer questions.</p> <p>Think about what might happen before deciding what to do.</p> <p>Recognise when a test comparison is unfair.</p> <p>Communicates simple planning for investigations.</p> | <p>Obtaining and presenting evidence Follow simple instructions to control the risks to themselves and others.</p> <p>Explore using some of the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements.</p> <p>Communicate what happened in a variety of ways including using ICT (for example in speech and writing by drawings, tables, block graphs and pictograms).</p> <p>Is able to make simple records.</p> | <p>Considering evidence and evaluating Make simple comparisons (for example hand span or shoe size) and identify simple patterns or associations.</p> <p>Compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.</p> <p>Review their work and explain what they did to others.</p> <p>Is able to make simple evaluations of their work.</p> |
| <p>Plants Observe and describe how seeds and blubs grow into mature plants.</p> <p>Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.</p> <p>To comment on how climate change and a change in temperature in the world could affect plant growth.</p> | <p>Living things and their habitats 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 the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including micro-habitats.</p> | <p>Animals, including humans Notice that animals, including humans, have offspring, which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air) – commenting on how air quality can be effected by pollution and climate change.</p> |
| <p>Uses of everyday materials Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses and suggest which materials are bad for the environment.</p> <p>Find out how the shape of the solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> | <p>Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.</p> <p>To understand the effect plastic pollution has on habitats.</p> | <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p> |

| Length of each unit: | Key Concepts Covered: | Domains of Knowledge Covered: | Assessment Opportunities: |
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| <p>Flexible: Recommended 6 Weeks for each unit. Obtaining and presenting evidence and Considering evidence, planning and evaluating is filtered in throughout (<i>see medium and short term planning</i>) When to teach each unit is discreet – it can be decided by the teacher to try and link with Topics for each half term.</p> | <ul style="list-style-type: none"> Investigating – Scientific skills Health - Biology Change - Biology The Earth – Biology, Physics Organisms - Biology Evolution - Biology Materials - Chemistry | <p>All Around Us – Plants and Animals Including Humans. How the World Works – Sustainability and Habitats Conducting and Communicating – Experiments Eco Science – See green text throughout Uses of Objects – Materials</p> | <p>Concept Cartoons End of topic quiz Regular AFL during lessons</p> |
| <p>Cross-Curricular Opportunities: Art, DT, Literacy, Maths (temperatures – reading scales)</p> | <p>Opportunities for Outdoor Learning: Using the outdoors for experiments (e.g. As a location to compare plant growth in different temperatures). Welly Walks to observe plastic pollution, plants and wildlife.</p> | <p>Eco Science Links: Recycling – Materials Plastic Pollution – Materials Climate Change – Plants and Animals Including Humans</p> | |

Year Three Progressive Science Objectives

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| Planning | Obtaining and presenting evidence | Considering evidence and evaluating |
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| <p>Ask questions (for example, 'How? Why? What will happen if...?' and decide how they might find answers to them.</p> <p>Use first hand experiences and information sources to answer questions.</p> <p>Make a reasoned prediction and recognise when a test comparison would be unfair.</p> <p>Communicates planning for investigations.</p> | <p>Follow instructions to control the risks to themselves and others.</p> <p>Explore using all the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements.</p> <p>Communicate what happened in a variety of ways including using ICT (for example making more formal tables, block graphs and pictograms).</p> | <p>Make reasoned comparisons and identify simple patterns, anomalies or associations.</p> <p>Compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.</p> <p>Is able to make evaluations of their work.</p> |
| <p>Animals, including humans Identify that animals, including humans, need the right types and amount of nutrition, and that they cannot make their own food; they get nutrition from what they eat.</p> <p>Identify that humans and some animals have skeletons and muscles for support, protection and movement.</p> | <p>Light Recognise that they need light in order to see things and that dark is the absence of light.</p> <p>Notice that light is reflected from surfaces.</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes.</p> <p>To recognise and understand light pollution.</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object.</p> <p>Find patterns in a way that the size of shadows change.</p> | <p>Plant Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers.</p> <p>Explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant.</p> <p>Investigate the way in which water is transported within plants and how global warming and a lack of/abundance of water may effect growth.</p> |
| <p>Forces and magnets Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between two objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</p> <p>Compare and group together a variety of everyday materials on the basis of whether they are attracted to a magnet, and identify some magnetic materials.</p> <p>Know how magnets aid the recycling process.</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>Rocks Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Describe in simple terms how fossils are formed when things that have lived are trapped within rock.</p> <p>Recognise that soils are made from rocks and organic matter.</p> | <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p> |

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| Cross-Curricular Opportunities: | Opportunities for Outdoor Learning: | Eco Science Links: | |
| <p>Art, DT, Literacy, Maths (temperatures - reading scales)</p> | <p>Using the outdoors to look for different types of rock, light shadows experiment and plants. Welly Walks to observe plastic pollution, plants and wildlife.</p> | <p>Recycling - Forces and Magnets Plastic Pollution - Plants Climate Change - Light Pollution & Animals Including Humans</p> | |

Year Four Progressive Science Objectives

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| <p>Planning Ask questions (for example, 'How? Why? What will happen if...?' and decide on the most efficient and accurate way to answer their questions,</p> | <p>Obtaining and presenting evidence Follow instructions to control the risks to themselves and others.</p> | <p>Considering evidence and evaluating Make comparisons and identify patterns, anomalies or associations.</p> |
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| <p>Use first hand experiences and information sources to answer questions.</p> <p>Anticipate difficulties and possible outcomes before deciding what to do.</p> <p>Recognise when a test comparison is unfair (independent, dependent and controlled variables are considered)</p> | <p>Explore using the senses of sight, hearing, smell, touch and taste as appropriate, and make and record observations and measurements in the most efficient way.</p> <p>Communicate what happened in a wide variety of ways including using ICT.</p> <p>Is able to clearly record evidence, linking it to what is they already know (other areas of science or previous lessons/findings)</p> | <p>Compare what happened with what they expected! Would happen, and try to explain it, drawing on their knowledge and understanding.</p> <p>Review their work and explain what they did to others.</p> <p>Is able to make detailed evaluations of their work.</p> |
| <p><u>Animals, including humans</u> Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identify producers, predators and prey.</p> <p><u>States of matter</u> Compare and group materials together, according to whether they are solids, liquids or gases.</p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p> <p>Comment on the gases that are both good and bad for the environment and how we can help keep a good level of 'healthy' gases.</p> | <p><u>Electricity</u> 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 will light in a simple series circuit, based on whether or not the lamp is part of a complete loop with a battery.</p> <p>Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit.</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors.</p> <p><u>Living things and their habitats</u> Recognise that living things can be grouped in a variety of ways.</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things.</p> | <p><u>Sound</u> Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Find patterns between the pitch of a sound and features of the object that produced it.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>To understand and recognise noise pollution.</p> |

| <u>Length of each unit:</u> | <u>Key Concepts Covered:</u> | <u>Domains of Knowledge Covered:</u> | <u>Assessment Opportunities:</u> |
|---|--|---|--|
| <p>Flexible: Recommended 6 Weeks for each unit. Obtaining and presenting evidence and Considering evidence, planning and evaluating is filtered in throughout (see medium and short term planning) When to teach each unit is discreet – it can be decided by the teacher to try and link with Topics for each half term.</p> | <ul style="list-style-type: none"> • Investigating – Scientific skills • Energy - Physics • Health - Biology • Change - Biology • The Earth – Biology, Physics • Organisms - Biology • Evolution - Biology • Materials - Chemistry | <p>All Around Us – Plants and Animals Including Humans. How the World Works – Sustainability, Forces and Magnets, Rocks and Habitats Conducting and Communicating – Experiments Eco Science – See green text throughout Uses of Objects – Light</p> | <p>Concept Cartoons End of topic quiz Regular AFL during lessons</p> |
| <u>Cross-Curricular Opportunities:</u> | <u>Opportunities for Outdoor Learning:</u> | <u>Eco Science Links:</u> | |
| Art, DT, Literacy, Maths | Using the outdoors to identify animals in food chains – prey, predators etc. Welly Walks to explore sound pollution and habitats. | Air Pollution – States of matter (gases) Noise Pollution – Sound Climate Change – Habitats | |

Year Five Progressive Science Objectives

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| <p><u>Planning</u> Ask questions (for example, 'How? Why? What will happen if...?' and decide on the most efficient and accurate way to answer their questions,</p> | <p><u>Obtaining and presenting evidence</u> Follow instructions to control the risks to all involved.</p> | <p><u>Considering evidence and evaluating</u> Make comparisons and identify patterns, anomalies or associations.</p> |
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| <p>Use first hand experiences and information sources to answer questions.</p> <p>Anticipate and overcome barriers by using previous knowledge.</p> <p>Recognise and consider (independent, dependent and controlled variables).</p> | <p>Explore, make and record accurate observations and measurements in the most efficient way.</p> <p>Communicate what happened in a wide variety of ways including using ICT.</p> <p>Is able to clearly record evidence, linking it to what is they already know (other areas of science or previous lessons/findings).</p> | <p>Compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.</p> <p>Review their work in depth and explain what they did to others.</p> <p>Evaluate the experiment and apply to following work.</p> |
| <p><u>Animals, including humans</u> Describe the changes as humans develop to old age.</p> | <p><u>Properties and changes of materials</u> Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity, recyclable electrical and thermal), and response to magnets.</p> | <p><u>Earth and Space</u> Describe the movement of the Earth, and other planets, relative to the Sun in the solar system.</p> |
| <p><u>Living things and their habitats</u> Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird.</p> <p>Describe the life process of reproduction in some plants and animals.</p> | <p>To know that some materials will dissolve in a liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> | <p>Describe the movement of the Moon relative to the Earth.</p> <p>Describe the Sun, Earth and Moon as approximately spherical bodies.</p> <p>Use the idea of the Earth's rotation to explain day and night and the apparent movement of the Sun across the sky.</p> |
| <p><u>Forces</u> Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object.</p> <p>Identify the effects of air resistance, water resistance and friction that act between moving surfaces.</p> <p>Recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.</p> | <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes.</p> <p>Explain that some changes result in the 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>To have an understanding of the greenhouse effect and how it can be reduced.</p> |

| <u>Length of each unit:</u> | <u>Key Concepts Covered:</u> | <u>Domains of Knowledge Covered:</u> | <u>Assessment Opportunities:</u> |
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| <p>Flexible: Recommended 6 Weeks for each unit. Obtaining and presenting evidence and Considering evidence, planning and evaluating is filtered in throughout (see medium and short term planning) When to teach each unit is discreet – it can be decided by the teacher to try and link with Topics for each half term.</p> | <ul style="list-style-type: none"> Investigating - Scientific skills Energy - Physics Health - Biology Change - Biology The Earth - Biology, Physics Organisms - Biology Evolution - Biology Materials - Chemistry | <p>All Around Us - Habitats and Animals Including Humans. How the World Works - Materials, Forces, Earth and Space. Conducting and Communicating - Experiments Eco Science - See green text throughout Uses of Objects - Materials</p> | <p>Concept Cartoons End of topic quiz Regular AFL during lessons</p> |
| <p><u>Cross-Curricular Opportunities:</u></p> | <p><u>Opportunities for Outdoor Learning:</u></p> | <p><u>Eco Science Links:</u></p> | |
| <p>Art, DT, Literacy, Maths</p> | <p>Using the outdoors to identify animals in food chains – prey, predators etc. Welly Walks to explore sound pollution and habitats.</p> | <p>Recycling – Properties of Materials Climate Change – Habitats, Earth and Space</p> | |

Year Six Progressive Science Objectives

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| <p><u>Planning</u> Ask questions (for example, 'How? Why? What will happen if...?' and explain how their choices are the most efficient and accurate possible.</p> <p>Use first hand experiences and information sources to justify and answer questions.</p> | <p><u>Obtaining and presenting evidence</u> Follow instructions to control the risks to all involved and make dynamic risk assessment when necessary.</p> | <p><u>Considering evidence and evaluating</u> Make comparisons and identify patterns, anomalies or associations.</p> <p>Compare what happened with what they expected would happen, and try to explain it, drawing on their knowledge and understanding.</p> |
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| <p>Anticipate and overcome barriers by using previous knowledge.</p> <p>Recognise and consider (independent, dependent and controlled variables).</p> | <p>Explore, make and record accurate observations and measurements in the most efficient way.</p> <p>Communicate what happened by independently choosing from a wide variety of ways including using ICT.</p> <p>Is able to clearly record evidence, linking it to what is they already know (other areas of science or previous lessons/findings).</p> | <p>Review their work in depth and explain what they did to others.</p> <p>Evaluate the experiment and apply to following work.</p> |
| <p>Living things and their habitats 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>Give reasons for classifying plants and animals based on specific characteristics.</p> | <p>Light Recognise that light appears to travel in straight lines.</p> <p>Use the idea that light travels in straight lines to explain that objects are seen because they give out or reflect light into the eye.</p> <p>Explain that we see things because light travels from light sources to our eyes or from light sources to objects and then to our eyes.</p> <p>Use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them.</p> | <p>Evolution and inheritance Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.</p> <p>To predict what may happen to the Earth if Global Warming continues.</p> |
| <p>Animals including humans Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.</p> <p>Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.</p> <p>Describe the ways in which nutrients and water are transported within animals including humans and comment on the effect global warming may have upon this process.</p> | <p>Electricity 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>Uses recognised symbols when representing a simple circuit in a diagram.</p> | <p>Healthy Eating Cooking classes are given to the children.</p> <p>They must recognise the impact of diet on the way their bodies function.</p> <p>Demonstrate the ability to describe the ways in which nutrients and water are transported within animals, including humans.</p> |

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| <p>Flexible: Recommended 6 Weeks for each unit. Obtaining and presenting evidence and Considering evidence, planning and evaluating is filtered in throughout (see medium and short term planning) When to teach each unit is discreet – it can be decided by the teacher to try and link with Topics for each half term.</p> | <ul style="list-style-type: none"> Investigating – Scientific skills Energy - Physics Health - Biology Change - Biology The Earth – Biology, Physics Organisms - Biology Evolution - Biology Materials - Chemistry | <p>All Around Us – Habitats and Animals Including Humans. How the World Works – Materials, Forces, Earth and Space. Conducting and Communicating – Experiments Eco Science – See green text throughout Uses of Objects – Materials</p> | <p>Concept Cartoons End of topic quiz Regular AFL during lessons</p> |
| Cross-Curricular Opportunities: | Opportunities for Outdoor Learning: | | Eco Science Links: |
| Art, DT, Literacy, Maths | Using the outdoors to identify animals in food chains – prey, predators etc. Welly Walks to explore sound pollution and habitats. | | Recycling – Properties of Materials Climate Change – Habitats, Earth and Space |