

Intent	Implementation	Impact
<p><b>INTENT</b></p> <p>Science at St Erth aims to make all children excited and curious about the material world.</p> <p>We teach the substantive knowledge - the products of science: the concepts, laws and theories and the disciplinary knowledge by learning how scientific knowledge is generated and the process of working scientifically. Therefore, children will not only know the science but also know the evidence for it.</p> <p>Children will practice their skills and understanding so what is learnt is accessible and not forgotten. Children are immersed in scientific vocabulary, to aid their knowledge and understanding.</p> <p>Future Science careers and hobbies will be discussed. Teachers will endeavour to raise children's aspirations by providing positive role models and discussing stereotypes.</p> <p>We promote an understanding and respect for the universe.</p> <p>Our belief is that aspirations and appreciation of science should not be limited by Special Educational Needs. Thought and effort is taken to ensure that learners with SEND are included in all aspects of learning, both academic and practical, progressing their skills and having high aspirations in what they could do in the science field.</p>	<p>Teachers ensure long term plans give full coverage of, 'The National Curriculum programmes of study for Science' and, 'Development Matters Curriculum' in the Early Years Foundation Stage. Sequence of lessons will show progression of concepts taught.</p> <p>As a core subject sufficient time is allocated for both the substantive and disciplinary knowledge to be taught. This will often take place in a weekly science lesson, but teachers will use cross curricular links to consolidate scientific understanding when appropriate</p> <p>Clear progression of objectives will ensure knowledge and skills build incrementally from pupils' prior knowledge.</p> <p>Early years children are introduced to a wide range of vocabulary and phenomena and use of appropriate picture books, rhymes, and songs to learn scientific vocabulary.</p> <p>Consideration is given to those with SEND and how their learning methods and needs may differ. Strategies used will differ according to pupils need but will include multi-sensory methods to ensure learning takes place and an enjoyment of science is fostered. All classroom staff are aware of the needs of all pupils, with special consideration to those with SEND. Staff are aware of the learning intent of the lesson and how to aid those with SEND within the lesson so that they progress in their learning.</p> <p>The curriculum is sequenced so pupils have the necessary disciplinary and substantive knowledge to carry out practical work successfully and learn from it. Children have time to recap and orally rehearse and structure their thoughts using scientific language.</p> <p>Science books are used to record the science learning in each class. These contain the substantive and disciplinary objectives. Quality resources will be used creating a coherent learning progression and focus on key concepts and familiar schema. These will include Developing experts, STEM, TAPs assessment, Explore, Look think talk and It's not fair - or is it? teacher textbooks. Forest schools, use of the local area and educational trips and workshops will be used to consolidate knowledge and skills taught in class.</p> <p>Use of famous and local minority group scientists will be discussed.</p>	<p>Children leave St Erth School well prepared for their secondary school science education, with a wealth of disciplinary and substantive knowledge. They will be able to question ideas and reflect on knowledge.</p> <p>Children will work collaboratively and practically to investigate and experiment. They will be able to explain the process they have taken and be able to reason scientifically.</p> <p>Learners with SEND may show their learning outcomes in alternative ways that are more appropriate to their needs ie: a mind map, evidence on a computer programme, a video etc instead of a longer piece of writing. This allows the pupil to evidence their learning in science while removing the barriers to learning that they may face in certain areas. What recording methods are used depends on the need of the individual pupil. Where composite outcomes are collaborative and class based, such as an assembly or display etc, pupils with SEND are included in a way that displays their learning and includes them with dignity and value.</p> <p>Children will recognise that anybody can be a scientist or follow a STEM career regardless of ethnic origin, gender, class, aptitude, or disability.</p>

<p><b>EYFS Science Science</b></p>	<p>Animals including humans:</p> <ul style="list-style-type: none"> <li>• be able to identify different parts of their body.</li> <li>• Know the effects exercise has on their bodies.</li> <li>• Have some understanding of growth and change.</li> </ul> <p>birds, fish, mammal, sight, hearing, touch, taste, smell, head, neck, ear, mouth, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow</p>	<p>Everyday Materials:</p> <ul style="list-style-type: none"> <li>• be able to ask questions about the place they live.</li> <li>• Talk about why things happen and how things work.</li> <li>• Manipulates materials to achieve a planned effect.</li> </ul> <p>hard, soft bendy/not bendy , shiny, dull, rough, smooth</p>	<p>Animals including Humans:</p> <ul style="list-style-type: none"> <li>• Have some understanding of healthy food and the need for variety in their diets.</li> <li>• Be able to show care and concern for living things.</li> <li>• Can talk about things they have observed including animals</li> </ul> <p>birds, fish, mammal, sight, hearing, touch, taste, smell, head, neck, ear, mouth, hand, fingers, leg, foot, thumb, eye, nose, knee, toes, teeth, elbow</p>	<p>Plants:</p> <ul style="list-style-type: none"> <li>• Make observations of plants</li> <li>• Know some names of plants, trees and flowers</li> <li>• May be able to name and describe different plants, trees and flowers</li> <li>• Show some care for their world around them</li> </ul> <p>leaves, trunk, branch, , flower, stem</p>	<p>Seasonal Changes</p> <ul style="list-style-type: none"> <li>• Developing an understanding of change.</li> <li>• Observe and explain why certain things may occur (e.g. leaves falling off trees, weather changes).</li> <li>• Look closely at similarities, differences, patterns and change.</li> </ul> <p>windy, sunny, snow, rain, temperature</p>	<p>Seasonal Changes:</p> <ul style="list-style-type: none"> <li>• Comments and questions about the place they live or the natural world.,</li> </ul> <p>Everyday Materials:</p> <ul style="list-style-type: none"> <li>• Discuss the things they have observed such as natural and found objects.</li> </ul>
<p><b>Key Scientists</b></p>			<p>Jane Goodall – studied chimpanzees in natural habitats</p> <p>Dr Charles Henry Turner (first person to discover that insects can hear and honey bees can see colours)</p>			

## Science Year 1 and 2: Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b>Year 1 Naming and grouping animals</b> 1. Can all animals be pets? 2. What is a mammal? 3. How are birds and reptiles different? 4. Can fish and amphibians live together? 5. Do all animals have the same diet?  Vocabulary:	<b>Year 1 Human body parts</b> 1. Are humans mammals? 2. Outside body parts 3. What body parts are inside us? 4. What are our senses? 5. Sight, smell and sound. 6. Taste and touch.	<b>Scientists: Mae Jemison</b>  1. Who is Mae Jemison?  Awe and Wonder Science Experiments: 1. How to grow a rainbow. 2. Fizzy colours 3. Fruity sweets	<b>Year 2 New life</b>  1. Do all animals look like their parents? 2. What stages of life do animals go through? 3. What is a lifecycle? 4. How can we record a life cycle? 5. What do animals need to survive?  Vocabulary: animals, offspring, young, parents, observe, grow, change, adult, lifecycle, record	<b>Year 2 Healthy Me</b>  1. Why should I wash my hands? 2. Why is it important to brush my teeth? 3. Should we exercise? 4. Can I eat my favourite food everyday? 5. Should I eat the same amount of each food group? 6. Can I be a food scientist? 7. How do I stay healthy?	

## Science Year 1 and 2: Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
	<b>Every Day Materials Year 1</b>  1. What are objects and materials? 2. Can we recycle all materials? 3. What are the properties of materials? 4. How can I find out if something is waterproof? 5. What is transparent and opaque?	<b>Uses of everyday materials Year 2</b>  1. Can an object be made from different materials? 2. Suitable or not? 3. Where do materials come from? 4. What materials are absorbent? 5. Can all materials stretch? 6. What materials can change shape?	<b>Identifying plants and their basic parts Year 1</b>  1. What plants grow around our school? 2. What are the parts of a tree? 3. Can I name some trees? 4. Do all trees lose their leaves in winter? 5. What are the parts of a flower? 6. What flowers grow in my garden? 7. What flowers grow in the hedges around our school?	<b>Growing plants Year 2</b>  1. Do all plants produce seeds? 2. What is a bulb? 3. What do plants need to grow healthy? 4. Will a plant grow without water? 5. Will a plant grow without light? 6. Will a plant grow without warmth? 7. Can we all grow our own food?	<b>Year 1 Naming and grouping animals</b>  1. What is a mammal? 2. How are birds and reptiles different? 3. Can fish and amphibians live together? 4. Do all animals have the same diet?  Introduction to food chains Year 2  1. How do animals get their food? 2. What is a food chain? 3. Do all food chain look the same?	<b>Living things and where they live Year 2</b>  1. Is it living or non-living? 2. Do all living things move? 3. Is it living, dead or never been alive? 4. Why do different animals live in different parts of the world? 5. Can we grow the same plants anywhere in the world? 6. What is a microhabitat? 7. Can we build a microhabitat?

## Science Year 3 and 4: Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3 and 4 : Cycle A	<p><b><u>Rocks Year (Y3)</u></b> Stone age – Iron Age</p> <p><b>Intent:</b> Children will discover the different types of rocks and how they are formed. Children will compare and group rocks based on appearance and simple properties. They will learn how fossils are formed and learn about the contribution of Mary Anning to the field of palaeontology. Children will understand how soil is formed and then investigate the permeability of different types of soil.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>How do we sort rocks in groups?</li> <li>How do I measure accurately using scales and thermometer?</li> <li>How are fossils formed?</li> <li>Who was Mary Anning?</li> <li>What is soil made from?</li> </ol> <p><b>Vocabulary</b> Rocks, igneous, metamorphic, sedimentary, permeable, impermeable, body fossil, trace fossil, Mary Anning, cast fossil, , extinct, organic matter, topsoil, sub soil, base rock.</p> <p><b><u>Assessment</u></b></p>	<p><b><u>States of matter (Y4)</u></b> Charlie and the Chocolate Factory</p> <p><b>Intent:</b> Children will learn the differences between solids, liquids and gases, classifying objects and identifying their properties. Furthermore, they will have chance to find the temperature different types of chocolate melt.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>How do we compare and group materials into solid, liquid or gas?</li> <li>How do I ask questions?</li> <li>How do I measure accurately?</li> <li>What happens to some materials when heated or cooled?</li> </ol> <p><b>Vocabulary</b> Solid, liquid, gas, particles, state, materials, properties, matter, melt, freeze, water, ice, temperature, condensation, evaporation, water vapour, energy, precipitation, collection.</p> <p><b>Assessment</b></p>	<p><b><u>Animals including humans (Y3)</u></b> Mermaids and Miners (Local History)</p> <p><b>Intent:</b> To know animals can't make their food. The functions of skeletons.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What are the 5 main food groups?</li> <li>Why do we need each of the five main food groups?</li> <li>Why do we need skeletons?</li> <li>Are all animal skeletons the same?</li> <li>Why do we have muscles?</li> </ol> <p><b>Vocabulary</b> Nutrients, nutrition, carbohydrates, protein, fats, vitamins, minerals, water, fibre, skeleton, bones, joints, endoskeleton, exoskeleton, hydrostatic skeleton, vertebrates, invertebrates, muscles, contract, relax.</p> <p><b>Outcome/ composite</b> Children to make a pasty and discuss nutrients provided. Explain how a miners skeleton helps him to do his job</p> <p><b>Assessment</b></p>	<p><b><u>Animals including humans (Y4)</u></b> Where in the World are we?</p> <p><b>Intent:</b> Children will learn about the different types of teeth and the importance of good dental hygiene, before planning and carrying out an investigation into tooth decay using an egg as a model tooth. They will then learn about the parts and functions of individual organs of the human digestive system and carry out their own scientific demonstration of the process using everyday household items.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What are the main parts of the digestive system?</li> <li>What are the functions of each part of the digestive system?</li> <li>What are the three types of teeth in humans?</li> <li>Why is it important to take care of your teeth?</li> <li>How do I construct a food chains, identifying producers, predators and prey?</li> </ol> <p><b>Vocabulary</b> Herbivore, Carnivore, Digestive system, tongue, mouth, teeth, oesophagus, stomach, gall bladder, small intestine, pancreas, large intestine, liver, tooth, canine, incisor, molar, premolar.</p> <p><b>Assessment</b></p>	<p><b><u>Plants (Y3)</u></b> Amazing Amazon</p> <p><b>Intent:</b> Children will learn the names of different parts of plants, and the jobs they do. Furthermore, they will have chance to predict what will happen in an exciting investigation into the transportation of water within plants. They will work in a hands-on way to identify the parts of a flower, and will explore the different stages of the life cycle of a flowering plant.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What are parts of a flowering plant and their functions?</li> <li>How is water is transported in flowering plants?</li> <li>What is the Life cycle of a flowering plant?</li> <li>How are seeds dispersed?</li> <li>How are seeds adapted to their method of dispersal?</li> </ol> <p><b>Vocabulary</b> Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll</p> <p><b>Assessment</b> +</p>	<p><b><u>Plants (Y3)</u></b> Romans</p> <p><b>Intent:</b> The children will work scientifically and collaboratively to investigate what plants need to grow well, and will present their findings to their peers.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li><i>Why do you think some liquids help plants grow better than others?</i></li> <li><i>Can we always trust measurements to be accurate — and what might affect our results?</i></li> <li><i>What parts of digestion does our model show well, and what is missing or unrealistic?</i></li> <li>Which Rock Should We Use to Build a Playground Path?</li> </ol> <p><b>Vocabulary</b> Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll</p> <p><b>Outcome/Composite</b> Make own seed and explain how it will be dispersed. Set up own enquiry</p> <p><b>Assessment</b></p>

## Science Year 3 and 4: Cycle B








	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 3 and 4 : Cycle B	<p><u>Living things and their Habitats (Y4)</u> Animals around the world</p> <p><b>Intent:</b> Children explore a variety of ways to identify, sort, group and classify living things. They learn how animals are split into 'vertebrates' and 'invertebrates' and begin to consider the differences between living things within these classifications. They use and create classification keys to group, identify and name living things from the local habitat and beyond.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>How do Scientists group living things?</li> <li>What are the five main groups of vertebrates?</li> <li>Which invertebrate can you name?</li> <li>What are the main characteristics of mammals?</li> <li>How do I create my own classification Key?</li> <li>Why are bees in danger?</li> </ol> <p><b>Vocabulary</b> flowering, nonflowering, plants, animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact.</p> <p><b>Assessment</b></p>	<p><u>States of matter Y4</u> Rivers and Mountains</p> <p><b>Intent:</b> Children will learn the differences between solids, liquids and gases, classifying objects and identifying their properties. They will explore how water changes state, exploring melting, freezing, condensing as well as a particular focus on evaporation. Finally, they will learn about the stages of the water cycle</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>How do I group materials together, according to whether they are solids, liquids or gases?</li> <li>What is evaporation?</li> <li>How can I measure the temperatures of liquids?</li> <li>How does water circulate around Earth?</li> </ol> <p><b>Vocabulary</b> Solid, liquid, gas, particles, state, materials, properties, matter, melt, freeze, water, ice, temperature, process, condensation, evaporation, water vapour, energy, precipitation, collection,</p> <p><b>Assessment</b></p>	<p><u>Electricity (Y4)</u> Victorian Britain</p> <p><b>Intent:</b> Children will learn about common electrical appliances and how to construct simple series circuits. They will become familiar with the key words linked to the topic and how to apply them appropriately. Children will learn about cells, wires, bulbs and buzzers. They will be able to troubleshoot and identify whether or not a bulb will light in a simple series circuit and be able to identify a complete circuit. The children will also learn about conductors and insulators and know that metals are very good electrical conductors.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>Which common household appliances that run one electricity?</li> <li>What are the names of the components in an electrical circuit?</li> <li>When will a bulb light?</li> <li>Which materials conduct and insulate electricity?</li> <li>How can I communicate my findings?</li> <li>Which questions will help us learn about circuits?</li> </ol> <p><b>Vocabulary</b> Electricity, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, components</p> <p><b>Assessment</b></p>	<p><u>Sound (Y4)</u> Dragons: Fact or Fiction?</p> <p><b>Intent:</b> Children will learn how vibrations cause sounds and how sounds travel, as well as how sounds can change pitch and loudness. The children will work in a hands-on way to explore pitch, and will use their understanding of how high and low sounds are made to create their own musical instruments</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>How are sounds made?</li> <li>How does a string telephone work?</li> <li>How do I change the volume of a sound?</li> <li>How do I change the pitch of a sound?</li> <li>What happens to the sound as I move away from the source?</li> </ol> <p><b>Vocabulary</b> Amplitude, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave.</p> <p><u>Sound end of unit assessment</u></p>	<p><u>Forces (Y3) Magnets</u> Who built the pyramids?</p> <p><b>Intent</b> Children will work scientifically and to investigate friction, by exploring the movement of objects over different surfaces. They will identify magnetic materials. By conducting an investigation into the strength of different types of magnets they will learn to record data. The children will have chance to explore the way magnetic poles can attract and repel.</p> <p><b>Sequence of Lessons:</b></p> <ol style="list-style-type: none"> <li>How do objects move on different surfaces?</li> <li>Which materials are magnetic?</li> <li>How are magnetic forces different to other push and pull forces?</li> <li>Will magnets attract or repel each other?</li> <li>How can magnets be useful in our everyday life?</li> </ol> <p><b>Vocabulary</b> Force, push, pull, friction, surface, magnet, magnetic, magnetic field, pole, north, south, attract, repel, compass.</p> <p><u>Assessment</u></p>	<p><u>Light (Y3)</u> Carnivals Around the World</p> <p><b>Intent:</b> Children will learn about light, reflections, and shadows. They will learn about different sources of light, and that we need light to see. The children will work scientifically and investigate reflective materials they will learn that the sun's light can be dangerous. Also, the children will have chance to test which objects are opaque and will find out how shadows change when the distance between the object and light source changes.</p> <p><b>Sequence of Lessons:</b></p> <ol style="list-style-type: none"> <li>How does light work?</li> <li>Which surfaces reflect light the best?</li> <li>How can we protect ourselves from the dangers of the sun?</li> <li>Which materials make the best shadows?</li> <li>How can I change the size of my shadow puppet?</li> </ol> <p><b>Vocabulary</b> Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent.</p> <p><u>Assessment</u></p>

## Science Year 5 and 6: Cycle A

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 and 6 : Cycle A	<p><b>Properties and Changes of materials (Y5)</b></p> <p><b>Intent:</b> During this unit of work, children will consolidate previous learning by revisiting the properties of solids, liquids and gases; learn to describe the properties of materials using scientific language; investigate which materials make the best thermal insulators; and which materials are magnetic. Children will be introduced to key scientific vocabulary to describe the properties of materials (e.g. soluble and insoluble) and investigate how to separate materials using these properties. They will be able to name separation methods (filtering, sieving, evaporation, magnets) and decide on the most efficient method for separating a mixture of materials. They will be able to describe change as reversible or irreversible.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>1. What are the properties of solids, liquids and gases?</li> <li>2. How can I describe the properties of materials?</li> <li>3. Which materials make the best thermal insulators?</li> <li>4. Which materials are magnetic?</li> <li>5. Which materials are soluble and which are insoluble?</li> <li>6. How can mixed materials be separated?</li> <li>7. What is irreversible change?</li> </ol> <p><b>Vocabulary</b> insulator, thermal, heat, transparent, translucent, opaque, magnetic, attract. soluble, insoluble, saturation, solute, filtration, boiling, condensing, evaporation, freezing, melting point, chemical, physical, reversible, irreversible</p> <p><b>Assessment</b></p>		<p><b>Living Things in their habitat (Y6)</b></p> <p><b>Classification</b></p> <p><b>Intent:</b> They will learn about different types of mammals and their different life cycles, making life cycle wheels to present their learning.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>1. How can living organisms be grouped?</li> <li>2. What are the key characteristics of animals, and how can they be remembered using MRS GREN?</li> <li>3. How can different organisms be classified using the Linnaean system?</li> <li>4. How can microorganisms be both helpful and harmful?</li> <li>5. How are fungi different to other organisms?</li> <li>6. How can you describe, represent and present data about a living organism?</li> </ol> <p><b>Vocabulary</b> Vertebrates, invertebrates, fish, amphibians, reptiles, birds, mammals, insects, Microorganism</p> <p><b>Assessment</b></p>	<p><b>Electricity (Y6)</b></p> <p><b>Intent:</b> Children will construct simple series circuits and drawing them using scientific symbols. They will conduct investigations to determine how the voltage in a circuit affects the brightness of a bulb. They will use their 'working scientifically' skills to plan an experiment to investigate variations in how components function and use the results to write a clear and concise conclusion.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>1. What are the parts of an electric circuit?</li> <li>2. What effect does voltage have on an electrical circuit?</li> <li>3. Can you identify and correct problems in a circuit?</li> <li>4. What affects the output of a circuit?</li> <li>5. Can you build a set of traffic lights?</li> <li>6. Can you use your knowledge of conductors and insulators to make a game?</li> </ol> <p><b>Vocabulary</b> appliance, battery, components, conductor, electrical, insulator, mains power, pylon renewable energy non-renewable energy</p> <p><b>Assessment</b></p>	<p><b>Animals including Humans (Y5)</b></p> <p><b>Mammal Development</b></p> <p><b>Intent:</b> During this unit of work, children will learn about the different stages of the human life cycle. They will discuss a simple timeline first before going into more depth about what happens in the womb, during puberty and when you are older.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>1. What are the key stages of a mammal's life cycle?</li> <li>2. How long are the gestation periods of different mammals?</li> <li>3. How does a baby grow before it's born?</li> <li>4. Do hand spans change as we grow?</li> <li>5. What changes happen to our bodies during puberty?</li> <li>6. How does the human body change in old age?</li> </ol> <p><b>Vocabulary</b> Birth conception/ fertilisation, death, develop, egg, foetus Puberty, sperm, womb</p> <p><b>Lessons</b></p> <p><b>Assessment</b></p>	<p><b>Evolution and inheritance (Y6)</b></p> <p><b>Intent:</b> Children will explore how living things change over time. They will discover why offspring are not identical to their parents, how animals and plants adapt to survive, and what fossils reveal about life from the past.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>1. How do offspring differ from their parents?</li> <li>2. How have animals adapted to survive in their environments?</li> <li>3. How have plants adapted to live in different habitats?</li> <li>4. What can fossils tell us about living things from the past?</li> <li>5. What is the theory of evolution by natural selection?</li> </ol> <p><b>Vocabulary</b> adaptation, environment, evolution, gene, natural selection, inheritance, organism, species</p> <p><b>Assessment</b></p>

## Science Year 5 and 6: Cycle B

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Year 5 and 6 : Cycle B	<p><u>Animals including humans (Y6)</u></p> <p><b>Circulatory Systems</b>  <b>Intent:</b> In this unit, children will learn about the human circulatory system, its main parts and functions, and how lifestyle choices affect the body, including nutrient and water transportation.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>Understand the function of the heart and its role in the circulatory system?</li> <li>Identify and compare blood vessels?</li> <li>Explore blood?</li> <li>Learn how the body transports water and nutrients?</li> <li>Investigate what affects your heart rate?</li> <li>Learn about the impact of drugs and alcohol on the body?</li> </ol> <p><b>Vocabulary</b>  heart, lungs, blood, veins, arteries, heart rate</p> <p><u>Assessment</u></p>	<p><u>Forces A (Y5)</u></p> <p><b>Intent:</b> In this unit on Forces, children will learn about gravity, air resistance, water resistance, and friction. They will also discover how levers, pulleys, and gears help make moving objects easier.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What is gravity and who was Isaac Newton?</li> <li>How does air resistance affect how parachutes fall?</li> <li>What factors change how water resistance works?</li> <li>How does friction affect how things move on different surfaces?</li> <li>How do levers and pulleys help us move things more easily?</li> <li>How do gears help machines work?</li> </ol> <p><b>Vocabulary</b>  Force, Friction, Gravity, Pull, Resistance, Drag, Streamlined, Upthrust or buoyancy, Newton (N), Gear, Lever, Pulley</p> <p><u>Assessment</u></p>	<p><u>Earth and Space (Y5)</u></p> <p><b>Intent:</b> Children will learn about the planets in our solar system, the Earth's movement in space, and how scientific ideas have changed over time. They will complete exciting missions to explore the Moon, time zones, and the day-night cycle.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What is the solar system and what planets are in it?</li> <li>Why does the Sun stay still while the planets move around it?</li> <li>How does the Earth move in space?</li> <li>Why do we have night and day?</li> <li>How does the Moon move and why does it change shape?</li> <li>Can you design your own planet using what you've learned?</li> </ol> <p><b>Vocabulary</b>  orbit, axis, day, month, planet, solar system, year, gravity</p> <p>INVESTIGATION: Does the size of an asteroid make an impact on the size of a crater?  Focus – making conclusions</p> <p>INVESTIGATION: What effects the distance travelled by a star rocket?  Focus – planning a fair investigation</p> <p><u>Assessment</u></p>	<p><u>Light (Y6)</u></p> <p><b>Intent:</b> In this unit, children learn that light travels in straight lines. They discover how we see things, explore how light is reflected, and explain why shadows are the same shape as the objects that block the light.</p> <p><b>Sequence of learning</b>  Light</p> <ol style="list-style-type: none"> <li>How does light travel?</li> <li>What is reflection?</li> <li>How does reflection help us to see things?</li> <li>How can shadows change?</li> <li>Why do shadows have the same shape as the object that makes them?</li> <li>What amazing things can light do?</li> </ol> <p><b>Vocabulary</b>  dark, reflect, shadow, opaque, translucent, transparent, luminous, scattering, absorption, refraction</p> <p><u>Assessment</u></p>	<p><b>Forces B(Y5)</b></p> <p>INVESTIGATION: Parachutes - Investigate why objects fall to Earth – link to the Arrival and then investigate the effects of air resistance  Focus – collecting reliable results</p>	<p><u>Living Things in their habitat (Y5)</u></p> <p><b>Life cycles of plants and animals</b>  <b>Intent:</b>  Children will learn about life cycles, reproduction, and animal characteristics by building on prior knowledge. New concepts like metamorphosis and asexual reproduction will deepen understanding and support recall through regular links to previously learned ideas.</p> <p><b>Sequence of learning</b></p> <ol style="list-style-type: none"> <li>What are the life processes of a plant?</li> <li>What are the life cycles of mammals?</li> <li>How do the life cycles of insects and amphibians compare?</li> <li>What are the life cycles of birds and reptiles?</li> <li>Who are Jane Goodall and David Attenborough, and what are their contributions to science and nature?</li> <li>How can we research and present the life cycle of a creature?</li> </ol> <p><b>Vocabulary</b>  fertilisation, pollination, pollen, stamen, pistil, seed dispersal, reproduction</p> <p>INVESTIGATION – Which flower attracts most insects?  Focus – observations</p> <p><u>Assessment</u></p>

			EYFS	KS1	Lower KS2		Upper KS2	
				Y1	Y2	Y3	Y4	Y5
WORKING SCIENTIFICALLY	PLAN	Planning  Asking questions  Making predictions  Setting up tests		<ul style="list-style-type: none"> <li>asking simple questions and recognising that they can be answered in different ways</li> </ul>	<ul style="list-style-type: none"> <li>asking relevant questions and using different types of scientific enquiries to answer them</li> <li>setting up simple practical enquiries, comparative and fair tests</li> </ul>	<ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> </ul>		
		Observing / obtaining evidence  Observing and measuring	Know about the similarities and differences in relation to places, objects, materials and living things  They make observations of animals and plants	<ul style="list-style-type: none"> <li>observing closely, using simple equipment</li> <li>performing simple tests</li> <li>identifying and classifying</li> </ul>	<ul style="list-style-type: none"> <li>making systematic and careful observations and where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</li> </ul>	<ul style="list-style-type: none"> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate</li> </ul>		
	DO	Recording  Recording data		<ul style="list-style-type: none"> <li>gathering and recording data to help in answering questions</li> </ul>	<ul style="list-style-type: none"> <li>gathering, recording, classifying and presenting data in a variety of ways to help in answering questions</li> <li>recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables</li> </ul>	<ul style="list-style-type: none"> <li>recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</li> </ul>		
		Concluding  Interpreting and communicating results	They talk about features of their environment and how environments might vary from one another.  Explain why something occurs and talk about changes including seasons and states of matter.	<ul style="list-style-type: none"> <li>using their observations and ideas to suggest answers to questions</li> </ul>	<ul style="list-style-type: none"> <li>reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions</li> <li>identifying differences, similarities or changes related to simple scientific ideas and processes</li> <li>Using straightforward scientific evidence to answer questions or to support their findings</li> </ul>	<ul style="list-style-type: none"> <li>reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations.</li> </ul>		
	REVIEW	Evaluating  Evaluating			<ul style="list-style-type: none"> <li>using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.</li> </ul>	<ul style="list-style-type: none"> <li>using test results to make predictions to set up further comparative and fair tests.</li> <li>identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>		