



Intent	Implementation	Impact
<p>INTENT</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 KS1 and KS2 classes. These contain the Key question (substantive Knowledge) and disciplinary skill icons when taught. Quality resources will be used creating a coherent learning progression and focus on key concepts and familiar schema. Resources used will include Pzazz, STEM, TAPs assessment and teacher textbooks such as: Explore, look think talk and It's not fair - or is it? 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>



	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Topic	Hello! Who are you? Where are we? What's your favourite Colour?	Once upon a time...	Amazing Animals	The Birds, the Bees, the Seeds and the Trees	Imagine...	Under the Sea
Objectives	<p>Animals including humans:</p> <ul style="list-style-type: none"> • be able to identify different parts of their body. • Know the effects exercise has on their bodies. • Have some understanding of growth and change. <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"> • be able to ask questions about the place they live. • Talk about why things happen and how things work. • Manipulates materials to achieve a planned effect. <p>hard, soft bendy/not bendy , shiny, dull, rough, smooth</p>	<p>Animals including Humans:</p> <ul style="list-style-type: none"> • Have some understanding of healthy food and the need for variety in their diets. • Be able to show care and concern for living things. • Can talk about things they have observed including animals <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"> • Make observations of plants • Know some names of plants, trees and flowers • May be able to name and describe different plants, trees and flowers • Show some care for their world around them <p>leaves, trunk, branch, , flower, stem</p>	<p>Seasonal Changes</p> <ul style="list-style-type: none"> • Developing an understanding of change. • Observe and explain why certain things may occur (e.g. leaves falling off trees, weather changes). • Look closely at similarities, differences, patterns and change. <p>windy, sunny, snow, rain, temperature</p>	<p>Seasonal Changes:</p> <ul style="list-style-type: none"> • Comments and questions about the place they live or the natural world., <p>Everyday Materials:</p> <ul style="list-style-type: none"> • Discuss the things they have observed such as natural and found objects.

KS1	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
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Cycle A	<p>The Colours of me! Colour Creations Seasonal Changes(Y1) Animals including humans (Y1) (Y2)</p>	<p>Fire, Fire Materials: What are toys made from? Seasonal Changes(Y1) Everyday Materials (Y1)</p>	<p>To infinity and Beyond Animals including humans (Y1) Animals including humans (Y2)</p>	<p>Castles and Palaces Year 1 Plants Plants (Y1)</p>	<p>Australia Living Things and Habitats Plants (Y2) Living things and their habitats (Y2)</p>	<p>Land Ahoy Uses of Everyday Materials (Y2) R) Seasonal Changes(Y1)</p>
	<p>Intent This series of lessons will start the study of seasonal changes and we will begin to work scientifically by using our observations to compare and contrast throughout the year. Pupils will have opportunities to learn the names of the main body parts.</p> <p>Sequence of Lessons: Yr 1: Seasonal Changes 1. Name the seasons and put them in the correct order. 2. Describe some of the things that happen in each season. 3. Identify a particular month with a season. Y1 Animals including Humans 1. Produce a labelled drawing of the human body. 2. Identify the parts of the body associated with each sense. 3. Identify some factors which affect taste. Yr 2 Animals, including Humans 1. describe the life cycle of humans (5 stages of development).</p> <p>Vocabulary Autumn, Winter, Spring, Summer, cycle, Celsius, temperature, thermometer, season, change, rainfall, centimetres. Body, head, arms, legs, torso, wrist, ankle, thigh, hips, chest, sense, taste, smell, touch, sight, hearing, taste buds, baby, toddler, child, teenager, adult</p>	<p>Intent We will explore what toys are made from. As scientists we will identify, classify and describe the materials used to make a variety of toys. During these lessons we will explore materials, such as wood, plastic, metal, fabric and glass, through a variety of engaging and enjoyable activities.</p> <p>Sequence of Lessons: 1. Identify and name a variety of everyday materials used to make toys and their properties. 2. Explore and describe wooden toys and their properties. 3. Explore and describe plastic toys and their properties. 4. Explore and describe metal toys and their properties. 5. Explore and describe fabric toys and their properties. 6. Recap what we have learned. What material will make the best decoration? Yr 1: Seasonal Changes 1) Can I describe different types of weather? 2) Can I associate types of weather with particular seasons?</p> <p>Vocabulary Transparent, Waterproof, Absorbent, Material, Solid, Property. Stretchy, Bouncy, Solid, Property, Elasticity, Plasticity. Twist, Bend, Fold, Stretch, Pull, Squeeze, Squash. Hard, Soft, Smooth, Rough, Shiny, Dull.</p>	<p>Intent: Pupils will compare and contrast animals through videos and photographs, describing how they identify and group them. They will become familiar with the common names of some fish, amphibians, reptiles, birds and mammals.</p> <p>Sequence of Lessons: 1: What makes a mammal a mammal? Name the vertebrate groups: MR FAB 2: Do all animals have the same diet? 3: Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals).</p> <p>Vocabulary Amphibians, birds, fish, mammals, reptiles, carnivores, herbivore, omnivore</p>	<p>Intent: we will explore the local environment and answer questions about plants growing around us. We will observe the growth of flowers and vegetables that we have planted. Our aim is to become familiar with common names of flowers, give examples of deciduous and evergreen trees, and understand the basic structure of a plant.</p> <p>Sequence of Lessons: 1. What is a plant? 2. What are the parts of a plant called? 3. How do plants grow? 4. Do wild plants grow at our school? 5. How can we group plants? 6. Can we eat plants? 7. Are trees a type of plant? 8. What is a leaf?</p> <p>Vocabulary leaves, flowers (blossom), petals, fruit, berry, roots, bulb, seed, trunk, branches, stem, bark, stalk, bud, deciduous, evergreen, germination</p>	<p>Intent: We will learn about living things and their habitats. We will start the unit of work looking at whether things are living, dead or have never been alive. We will then look at microhabitats and larger habitats identifying some animals that may live there. We will conduct an investigation to see which type of conditions woodlice prefer in our local habitat. After that we will look at how living things are adapted to their environment. We will finish off by looking at food chains within habitats.</p> <p>Sequence of Lessons: 1. Is it living, dead or never been alive? 2. What is a microhabitat? 3. How are habitats different around the world? 4. What conditions do woodlice prefer? 5. How are living things adapted to their habitat? 6. What is a food chain?</p> <p>Vocabulary Alive, dead, living, habitat, microhabitat, conditions, adapted, foodchain, omnivore, carnivore, herbivore.</p>	<p>Intent: We will look at different types of materials used to make boats. We will use materials found in the classroom to help us make boats that can carry a load. When we have found the most suitable material to use, we will test how shape and size can affect its ability to float and carry heavy loads. The children will be able to describe the properties of different material and makes links to its suitability for a particular use.</p> <p>Sequence of Lessons: 1. How could a ship as large as the Titanic float? 2. Will it sink or float? 3. What material would be best to make a boat that carries pennies? 4. Which size ship can carry the most pennies? 4. Why is metal a good material to make ships from? 5. What other materials can boats be made from?</p> <p>Vocabulary float, buoyancy, density, mass, weight, submerged. properties, suitability</p>
Cycle B	<p>Are All Wonders Seasonal Changes (yr1) Animals including humans (Y1)</p>	<p>Once upon a time... Seasonal Changes(Y1) Everyday Materials (Y1)</p>	<p>Super Heroes Animals, including humans (Y1 and 2) Seasonal Changes (y1)</p>	<p>Wild Africa Living things and their habitats (Y2)</p>	<p>How does your garden grow? Plants (Y1) Plants (Y2)</p>	<p>We're all going on a Summer Holiday Uses of Everyday Materials (Yr2) Uses of Everyday Materials (Y2) • identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses. • find out how the shapes of solid objects made from some materials can</p>
	<p>Intent As young scientists, we will explore the four seasons and know that each one lasts for 3 months. We will be able to name them and know that they run in a cycle. We will also be able to link some events with each season. Seasonal Changes 1. How many seasons are there? 2. What events happen in each season?</p>	<p>Intent We will learn about different materials and be able to identify objects made from different materials. We will be able to identify the difference between an object and the material from which it is made. We will group and sort different materials based on their properties. and have the opportunity to investigate different materials to see</p>	<p>Intent In this unit, we will look at animal young and compare them to their adults. We will look at how animals change as they grow up and be introduced to the life cycles of several common animals, including humans. We will learn how humans change as they grow. Sequence of Learning</p>	<p>Intent As scientists we will learn about a variety of habitats and the plants and animals that live there. We will tell the difference between things that are living, dead and things that have never been alive. We will make observations of a local habitat and the creatures that live there. We will also research a range of global habitats and how the</p>	<p>• identify and name a variety of common wild and garden plants, including deciduous and evergreen trees • identify and describe the basic structure of a variety of common flowering plants, including trees. leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen</p>	

<p>3. What months are in each season? 4. How does temperature change through the seasons? 5. What types of weather are there? 6. What types of weather do we associate with each season? 7. Where do all the puddles go?</p> <p>Animals including Humans</p> <p>1. What are the names of our body parts? 2. What are senses? 3. Are all humans the same?</p> <p>Vocabulary Autumn, Winter, Spring, Summer, cycle, temperature, season, change, rainfall, Body, head, arms, legs wrist, ankle, thigh, hips, chest, sense, taste, smell, touch, sight, hearing, baby, toddler, child, teenager, adult</p>	<p>which material would be best for different purposes.</p> <p>Sequence of Learning</p> <p>1. What are materials and how are they different? 2. What are objects made from and how can we sort them? 3. What material would be best for Little Red Riding Hood's cape? 4. Which materials should the Little pigs make their house from? 5. Which material will protect Humpty Dumpty? 6. How can we change materials?</p> <p>Seasonal Changes: Continue to observe changes in weather and temperature (Record Data) What events happen in November and December?</p> <p>Vocabulary Hard, soft, stretchy, stiff, smooth, transparent, flexible, waterproof, absorbent, materials, objects</p>	<p>Step 1: Identify and name a variety of common animals. Step 2: Describe and compare the structure of common animals. Step 3: Identify and name common animals that are carnivores, omnivores and herbivores. Step 4: Sort and group young to their adult. Step 5: Lifecycles. How do animals change as they grow into adults? Step 6: What do animals including humans, need to survive? Step 7: What are the effects of exercise on the human body? Step 8: What is the importance of healthy eating and hygiene?</p> <p>Vocabulary: Diet, exercise, offspring, lifecycle, omnivore, carnivore, herbivore, mammal, bird, fish, reptile, amphibians, insects, hygiene, survive.</p> <p>Seasonal Changes: Continue to observe changes in weather and temperature (Record Data).</p>	<p>living things that live there are suited to their environments. We will then start to learn about simple food chains.</p> <p>Key Questions KQ 1: How can we tell if something is dead or alive? KQ 2: What are our local habitats like? KQ 3: What animals will we find in a microhabitat? KQ 4: Are all habitats around the world the same? KQ 5: How can different animals survive in different habitats? KQ 6: What is a food chain?</p> <p>Vocabulary: Living, dead, never alive, habitats, micro-habitats, food, food chain, leaf litter, shelter, seashore, woodland, ocean, rainforest</p>	<ul style="list-style-type: none"> observe and describe how seeds and bulbs grow into mature plants find out and describe how plants need water, light and a suitable temperature to grow and stay healthy. <p>Leaves, trunk, branch, root, seed, bulb, flower, stem, wild, garden, deciduous, evergreen, observe, grow, compare, record, temperature, predict, measure, diagram, germinate, warmth, sunlight.</p>	<p>be changed by squashing, bending, twisting and stretching..</p> <p>Waterproof, fabric, rubber, cars, rock, paper, cardboard, wood, metal, plastic, glass, brick, twisting, squashing, bending, matches, cans, spoons,</p>
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LKS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	<p>Stone age – Iron Age Rocks Year (Y3)</p>	<p>Charlie and the Chocolate Factory States of matter (Y4)</p>	<p>Mermaids and Miners (Local History) Animals including humans (Y3)</p>	<p>Where in the World are we? Animals including humans (Y4)</p>	<p>Amazing Amazon Plants (Y3)</p>	<p>Romans Plants (Y3)</p>
	<p>Intent 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>Sequence of Lessons:</p> <ol style="list-style-type: none"> Compare and group together different kinds of rocks based on their appearance and simple physical properties Make rocks using chocolate Describe in simple terms how fossils are formed when things that have lived are trapped within rock 	<p>Intent: 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>Sequence of Lessons:</p> <ol style="list-style-type: none"> Compare and group materials in to solid, liquid or gas. Ask questions about exploding pop fireworks Measure the time taken for marbles to travel through different liquids Observe that some materials like chocolate change state when heated or cooled. <p>Vocabulary Solid, liquid, gas, particles, state, materials, properties, matter, melt,</p>	<p>Intent: To know animals can't make their food. The functions of skeletons.</p> <p>Sequence of Lessons:</p> <ol style="list-style-type: none"> What are the 7 nutrient groups? Write conclusions using food labels. How to measure the amount of vitamin C in drinks. Why do we need skeletons? Are all animal skeletons the same? <p>Vocabulary Nutrients, nutrition, carbohydrates, protein, fats, vitamins, minerals, water, fibre, skeleton, bones, joints, endoskeleton, exoskeleton, hydrostatic skeleton, vertebrates, invertebrates, muscles, contract, relax.</p>	<p>Intent: 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>Sequence of Lessons:</p> <ol style="list-style-type: none"> Name the parts of the digestive system. Describe the functions of the digestive system. Identify the different types of teeth in humans and their simple functions. Why do we brush our teeth? <p>Vocabulary</p>	<p>Intent: 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>Sequence of Lessons:</p> <ol style="list-style-type: none"> Name parts of a flowering plant and their functions. Make a model to demonstrate how water is transported in flowering plants. What is the Life cycle of a flowering plant? How are seeds dispersed? <p>Vocabulary</p>	<p>Intent: 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>Sequence of Lessons:</p> <ol style="list-style-type: none"> Review the life cycle of a flowering plant. Make seeds and explain how they are adapted to their method of dispersal. Plan a simple practical enquiry to investigate what plants require for life and growth. Record findings using diagrams and tables. Use results to draw simple conclusions <p>conclusions.</p> <p>Vocabulary</p>








	<p>4. Look at life of Mary Anning and how she was treated as a pioneering palaeontologist and fossil collector</p> <p>5. Recognise that soils are made from rocks and organic matter</p> <p>Vocabulary Rocks, igneous, metamorphic, sedimentary, permeable, impermeable, body fossil, trace fossil, Mary Anning, cast fossil, , extinct, organic matter, topsoil, sub soil, base rock.</p>	freeze, water, ice, temperature, process condensation, evaporation, water vapour, energy, precipitation, collection.		Herbivore, Carnivore, Digestive system, tongue, mouth, teeth, oesophagus, stomach, gall bladder, small intestine, pancreas, large intestine, liver, tooth, canine, incisor, molar, premolar.	Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll	Air, light, water, nutrients, soil, support, anchor, reproduction, pollination, dispersal, transportation, flower, energy, growth, seedling, carbon dioxide, oxygen, sugar, material, photosynthesis, chlorophyll
Cycle B	<p>Animals around the world Living things and their Habitats (Y4)</p>	<p>Rivers and Mountains States of matter Y4</p>	<p>Victorian Britain Electricity (Y4)</p>	<p>Dragons: Fact or Fiction? Sound (Y4)</p>	<p>Who built the pyramids? Forces (Y3) Magnets</p>	<p>Carnivals Around the World Light (Y3)</p>
	<p>Intent: 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>Sequence of Lessons: 1.How do Scientists group living things? 2.What are the five main groups of vertebrates? 3.Which invertebrate can you name? 4.What are the main characteristics of mammals? 5.How do I create my own classification Key? 6. Why are bees in danger?</p> <p>Vocabulary flowering, nonflowering, plants, animals, vertebrates, fish, amphibians, reptiles, mammals, invertebrate, human impact.</p> <p>-</p> <p>-</p>	<p>Intent: 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>Sequence of Lessons: 1. How do I group materials together, according to whether they are solids, liquids or gases? 2. What is evaporation? 3. How can I measure the temperatures of liquids? 4. How does water circulate around Earth?</p> <p>Vocabulary Solid, liquid, gas, particles, state, materials, properties, matter, melt, freeze, water, ice, temperature, process, condensation, evaporation, water vapour, energy, precipitation, collection,</p>	<p>Intent 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>Sequence of Lessons: 1. Name four common household appliances that run on electricity. 2. What are the names of the components in an electrical circuit? 3. When will a bulb light? 4. Which materials conduct and insulate electricity? 5.How can I communicate my findings to help a soldier fix his GPS coat ? 6. Which questions will help us learn about circuits?</p> <p>Vocabulary Electricity, electric current, appliances, mains, crocodile clips, wires, bulb, battery cell, battery holder, motor, buzzer, switch, conductor, electrical insulator, components</p>	<p>Intent 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>Sequence of Lessons: 1. How are sounds made? 2. How does a string telephone work? 3. How do I change the volume of a sound? 4. How do I change the pitch of a sound? 5. What happens to the sound as I move away from the source?</p> <p>Vocabulary Amplitude, volume, quiet, loud, ear, pitch, high, low, particles, instruments, wave.</p>	<p>Intent Children will work scientifically and to investigate friction, by exploring the movement of objects over different surfaces. They will work in a hands on way to identify magnetic materials. Furthermore, they will conduct an investigation into the strength of different types of magnet. The children will have chance to explore the way magnetic poles can attract and repel.</p> <p>Sequence of Lessons: 1/2. How do objects move on different surfaces? 3. Which materials are magnetic? 4. How are magnetic forces different to other push and pull forces? 5. Will magnets attract or repel each other? 6. How can magnets be useful in our everyday life?</p> <p>Vocabulary Force, push, pull, friction, surface, magnet, magnetic, magnetic field, pole, north, south, attract, repel, compass</p>	<ul style="list-style-type: none"> recognise that they need light in order to see things and that dark is the absence of light notice that light is reflected from surfaces recognise that light from the sun can be dangerous and that there are ways to protect their eyes recognise that shadows are formed when the light from a light source is blocked by a solid object find patterns in the way that the size of shadows change. <p>Light source, dark, reflect, ray, mirror, bounce, visible, beam, sun, glare, travel, straight, opaque, shadow, block, transparent, translucent.</p>

UKS2	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Cycle A	<p>Saxon Settlers</p> <p>Properties and Changes of materials A (Y5)</p>	<p>Explorers</p> <p>Properties and Changes of materials B (Y5)</p>	<p>Over land and sea</p> <p>Living Things in their habitat (Y5 &6)</p>	<p>World War 2</p> <p>Electricity (Y6)</p>	<p>Vikings Invaders</p> <p>Animals including Humans (Y5)</p>	<p>Change</p> <p>Evolution and inheritance (Y6)</p>
	<p><u>Intent</u> 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><u>Learning Sequence</u></p> <ol style="list-style-type: none"> 1. What are the properties of solids, liquids and gases? 2. How can I describe the properties of materials? 3. Which materials make the best thermal insulators? 4. Which materials are magnetic? 5. Which materials are soluble and which are insoluble? 6. How can mixed materials be separated? 7. What is irreversible change? <p><u>Vocabulary</u> insulator, thermal, heat, transparent, translucent, opaque, magnetic, attract.</p> <p>soluble, insoluble, saturation, solute, filtration, boiling, condensing, evaporation, freezing, melting point, chemical, physical, reversible, irreversible</p>	<p><u>Intent</u> They will learn about different types of mammals and their different life cycles, making life cycle wheels to present their learning.</p> <p><u>Learning Sequence</u></p> <ol style="list-style-type: none"> 1. Sort and group animals based on their features, giving reasons (Revision) 2. How do the life cycles of different groups of animals differ? 3. How can we identify living things using classification keys? 4. How do we know microorganisms are living things? 5. What characteristics do different types of microorganisms have? 6. How are living things classified using the Linnaean system? <p><u>Vocabulary</u> Vertebrates, invertebrates, fish, amphibians, reptiles, birds, mammals, insects, Microorganism</p>	<p><u>Intent</u> 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><u>Learning Sequence</u></p> <ol style="list-style-type: none"> 1. How do I draw a scientific diagram of a circuit? 2. How does voltage in a circuit affect the brightness of a bulb? 3. How do I plan a fair test experiment to investigate variations in how components function? 4. How do I write a conclusion for my investigation? 5. What is renewable and non-renewable energy? <p><u>Vocabulary</u> appliance, battery, components, conductor, electrical, insulator, mains power, pylon renewable energy non-renewable energy</p>	<p><u>Intent</u> 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><u>Learning Sequence</u></p> <ol style="list-style-type: none"> 1. How do humans change throughout their life? 2. How do we develop in the womb? 3. How do we change through puberty? 4. How do humans change as we become senior? <p><u>Vocabulary</u> Birth conception/ fertilisation, death, develop, egg, foetus Puberty, sperm, womb</p>	<p><u>Intent</u> During this unit of work, children will explore how animals and plants are adapted to the environment in which they live. They will learn that adaptations occur over time and that may lead to a species evolving. Children will conduct an experiment to answer the question; which beak is best adapted to pick up a seed? They will consider how certain adaptations occur in response to environmental conditions. They will learn about natural selection and how this links to inheritance and how some characteristics are inherited from parents and some are not. Children will consolidate previous learning on fossilisation and understand how studying fossils has helped explain the theory of evolution.</p> <p><u>Learning Sequence</u></p> <ol style="list-style-type: none"> 1. How are plants adapted to their environment? 2. How are animals adapted to their environment? 3. What is natural selection and how does this lead to evolution? 4. How do adaptations lead to evolution? 5. What characteristics can you inherit from your parents? 6. How can fossils help us explain evolution? <p><u>Vocabulary</u> adaptation, environment, evolution, gene, natural selection, inheritance, organism, species</p>	

Cycle B	<p>Ancient Greece</p> <p>Animals including humans (Y6)</p>	<p>Extreme Earth</p> <p>Forces A (Y5)</p>	<p>Out of this World</p> <p>Earth and Space (Y5)</p>	<p>Local Geography</p> <p>Light (Y6)</p>	<p>To America</p> <p>Forces B(Y5)</p>	<p>Mayans</p> <p>Living Things in their habitat B (Y5)</p>
	<p><u>Intent</u> During this unit of work, children will learn about the importance of the circulatory system and how it transports oxygen around our body. They will learn about the heart and how it is an important muscle in our bodies. Children will learn about their heart rate and different activities that can increase the heart rate. Children will learn about being healthy and things they can do to lead a healthy lifestyle as well as</p>	<p><u>Intent</u> During this unit of work, children will consolidate and extend their knowledge of forces by naming individual forces (e.g. gravity, friction, upthrust). They will extend their knowledge of frictional forces (air resistance and water resistance) and plan fair test investigations to discover which shoe has the greatest friction and which shapes offer the most water resistance. They will learn how forces can be helpful and unhelpful in various scenarios and</p>	<p><u>Intent</u> During this unit of work, children will learn that the Earth is part of the solar system and that the Sun is at the centre of that system. They will learn the names of the other planets (based on their distance from the Sun) and be able to describe the movement of Earth (and other planets) in relation to the Sun. Children will discover why there is day and night on Earth and relate this to time. They will plan an investigation to answer the question</p>	<p><u>Light</u></p> <ol style="list-style-type: none"> 1. How does light travel? 2. Which materials make the best reflectors? 3. How does the eye work? 4. How do shadows change during the day? 5. Why do objects look different in water? 6. How do mirrors work? <p><u>Vocabulary</u></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>Plants</u></p> <ol style="list-style-type: none"> 1) What are the parts of a flowering plant? 2) How do flowers reproduce? 3) How do seeds spread? 4) How do some plants reproduce independently? 5) What happens if a plant does not have flowers? <p><u>Vocabulary</u> fertilisation, pollination, pollen, stamen, pistil, seed dispersal, reproduction</p>

	<p>learning about things that people do that can cause them to be unhealthy.</p> <p>Learning Sequence</p> <ol style="list-style-type: none"> 1. What is the circulatory system? 2. How does our heart work? 3. How does exercise affect my heart rate? 4. What does the blood transport around the body? 5. How can I live a healthy lifestyle? 6. What can damage our health? <p>Vocabulary heart, lungs, blood, veins, arteries, heart rate</p>	<p>identify the forces involved in each scenario. They will learn what a mechanism is and how pulleys, levers and gears are used to allow a smaller force to have a greater effect.</p> <p>Learning Sequence</p> <ol style="list-style-type: none"> 1. What is gravity? 2. What is friction? 3. Whose shoe has the greatest friction? 4. What is air resistance? 5. What is water resistance? 6. What are gears, levers and pulleys? <p>Vocabulary Force, Friction, Gravity, Pull, Resistance, Drag, Streamlined, Upthrust or buoyancy, Newton (N), Gear, Lever, Pulley</p>	<p>- what happens to the Sun during the daytime? Children will also gain an understanding of the phases of the Moon and be able to describe the Moon's movement in relation to the Earth.</p> <p>Earth and Space</p> <ol style="list-style-type: none"> 1) Which is the biggest? Earth, Sun or Moon 2) How do we day and night? 3) Why do we get seasons? 4) What are the phases of the Moon? 5) What is an eclipse? 6) How many planets are there? <p>Vocabulary 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>dark, reflect, shadow, opaque, translucent, transparent, luminous, scattering, absorption, refraction</p>		<p>INVESTIGATION – Which flower attracts most insects? Focus – observations</p>
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Disciplinary skills progression

			EYFS	KS1	Lower KS2	Upper KS2
				Y1	Y2	Y3
WORKING SCIENTIFICALLY	PLAN	Planning  Asking questions  Making predictions  Setting up tests		<ul style="list-style-type: none"> asking simple questions and recognising that they can be answered in different ways 	<ul style="list-style-type: none"> asking relevant questions and using different types of scientific enquiries to answer them setting up simple practical enquiries, comparative and fair tests 	<ul style="list-style-type: none"> planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
		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"> observing closely, using simple equipment performing simple tests identifying and classifying 	<ul style="list-style-type: none"> making systematic and careful observations and where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers 	<ul style="list-style-type: none"> taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate
		Recording  Recording data		<ul style="list-style-type: none"> gathering and recording data to help in answering questions 	<ul style="list-style-type: none"> gathering, recording, classifying and presenting data in a variety of ways to help in answering questions recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables 	<ul style="list-style-type: none"> recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
	REVIEW	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"> using their observations and ideas to suggest answers to questions 	<ul style="list-style-type: none"> reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions identifying differences, similarities or changes related to simple scientific ideas and processes Using straightforward scientific evidence to answer questions or to support their findings 	<ul style="list-style-type: none"> 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.
		Evaluating  Evaluating			<ul style="list-style-type: none"> using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions. 	<ul style="list-style-type: none"> using test results to make predictions to set up further comparative and fair tests. identifying scientific evidence that has been used to support or refute ideas or arguments