



# SCIENCE CURRICULUM PROGRESSION MAP

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Science intent

From Pre-school all the way to year 6, Belthorn pupils will be inspired and develop a sense of curiosity about the world we live in. Pupils will develop their investigation skills over time and, by the end of year 6, children will have the skills to answer their own questions using different areas of inquiry. Children will recognise that the skills developed through our curriculum are used in a variety of different jobs and careers. Throughout their time at Belthorn, children will develop their confidence in working collaboratively and independently. Children will leave Belthorn with the knowledge to equip them on their next steps to become responsible and engaged citizens of the world.

Character Education

Our school values seek to ensure that through our curriculum we teach our children to be ambitious, passionate, kind, confident, happy, safe, valued, resilient and accepting. These values permeate through everything we do as a school.

We promote Character Education through the following:

- **Communication and Curiosity:** Practical work will enable pupils to question, explore, and experiment, nurturing their innate curiosity and fuelling a lifelong love for learning.
- **Respect and Responsibility:** We will foster an environment of teamwork and collaboration, where students learn to communicate effectively, respect diverse perspectives, and work towards common goals.
- **Responsibility and Citizenship:** Ethical considerations will be woven into our curriculum, ensuring students understand the responsible use of technology and environmental sustainability.
- **Resilience:** By embracing challenges, learning from failures, and adopting a growth mind-set, students will develop resilience and perseverance, preparing them for future success.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Pre School Cycle A	Animals, excluding humans	Humans (vol 1)	Plants	<u>Exploring senses</u> (vol 1)	Electricity –Light (vol 1)	Materials, including changing materials (vol 1)
Pre School Cycle B	Animals, excluding humans	Humans (vol 2)	Plants	<u>Exploring senses</u> (vol 2)	Electricity –Light (vol 2)	Materials, including changing materials (vol 2)
Reception	Animals, excluding humans	Humans	Materials, including changing materials	Light and Sound	Living things and their habitat	Forces
Year 1	ANIMALS INCLUDING HUMANS'	PLANTS (Introducing Common Names and Basic Structure & ongoing nature journals)	'EVERYDAY MATERIALS'	'ANIMALS (Other Animals: Basic Structure)	'PLANTS' Theme continued with a block at end of year as well as throughout year	'PLANTS' Theme continued with a block at end of year as well as throughout year

	(Humans: Basic Structure & Senses)					
Observe plants throughout the year Observe seasonal changes ( LIGHT & ASTRONOMY) throughout the year (including sunlight, weather and link with plants)						
Year 2	HEALTH 'ANIMALS, INCL HUMANS' (Humans: Grow & Stay Healthy)	'ANIMALS, (Animal survival and growth)	'USES OF EVERYDAY MATERIALS'	LIVING THINGS AND THE ENVIRONMENT	'PLANTS' (Growing Plants)	Consolidation of learning Scientific Enquiry
Observe plants and animals in the local environment throughout the year						
Year 3	'ROCKS'	LIGHT & ASTRONOMY 'Y3 LIGHT' (Shadows and Reflective surfaces)	'ANIMALS, INCL HUMANS' (Skeletons and Movement)	HEALTH 'ANIMALS, INCL HUMANS' (Health & Nutrition)	'FORCES AND MAGNETS'	'PLANTS' (Functions of plant parts and growth)
Year 4	Electricity	'ANIMALS, INCL HUMANS' (Teeth and Digestion)	MATERIAL PROPERTIES & MATERIAL CHANGES (States Of Matter)		'SOUND'	'LIVING THINGS & THEIR HABITATS (biodiversity, classification & care of environments)
Use the local environment throughout the year to identify, study and observe changes of plants and animals in their habitat						
Year 5	'LIVING THINGS & THEIR HABITATS'	LIGHT & ASTRONOMY 'EARTH & SPACE'	'FORCES'	(Material Properties) 'PROPERTIES & CHANGES OF	(Material. Changes) 'PROPERTIES & CHANGES OF	(Material changes) 'PROPERTIES & CHANGES OF

	(observing life cycles /reproduction in animals and plants)		(Friction and air resistance and mechanisms)	MATERIALS' (Testing material properties)	MATERIALS' (Reversible changes)	MATERIALS' (Irreversible changes)
<p>Observe life cycles of plants and animals in the local enviro Observe life cycles of plants and animals in the local environment throughout the year  'ANIMALS, INCL HUMANS' (Y5 Human life cycles) teach through PSHE lessons plus ideas incorporated into 'Living Things and Their Habitats throughout the year  'ANIMALS, INCL HUMANS' (Y5 Human life cycles) teach through PSHE lessons plus ideas incorporated into 'Living Things and Their Habitats'</p>						
Year 6	'LIVING THINGS & THEIR HABITATS' (classification)	'EVOLUTION & INHERITANCE' (incl. adaptations)	'ANIMALS, INCL HUMANS' (Circulatory system and Exercise)	HEALTH 'ANIMALS, INCL HUMANS' (Keeping Healthy, Diet & Lifestyle)	LIGHT & ASTRONOMY 'Y6 LIGHT'	ELECTRICITY

Pre-School

Term	Unit Name	Curriculum Content Skills and knowledge	Key vocabulary	Authentic outcome	Cultural Capital/ SMSC / British Values	Evidence
Autumn 1 A What do you celebrate?	Animals, excluding humans (vol 1)	<p>Compare adult animals to their babies</p> <p>–Observe how baby animals change over time</p> <p><u>Understanding the World</u></p> <p>Understand the key features of the life cycle of a plant and an animal.</p> <p>-Begin to understand the need to respect and care for the natural environment and all living things these shapes to represent objects.</p>	<p>plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead, soil, names of plants they grow</p>	Trip to Mrs Brown's Farm	<p>Individuality</p> <p>Trip to the Farm</p>	Floor Books /Facebook/ Displays
Autumn 2 A What do you celebrate?	Humans (vol 1)	<p><u>Humans</u></p> <p>-Learn about the life cycles of humans</p> <p>-Learn about how to take care of themselves</p> <p>- Learn about their senses</p> <p><u>Understanding the World</u></p> <p>-Use all their senses in hands-on exploration of natural materials.</p>	<p>grow, change, baby, toddler, child, adult, old person, smell, taste, touch, feel, hear, see</p>	Visit from Dentist	Individuality	Floor Books /Facebook/ Displays

		<ul style="list-style-type: none"> <li>- Begin to make sense of their own life story and family's history.</li> <li>-Understand the key features of the life cycle of a plant and an animal</li> </ul> <p><u>Personal Social and Emotional Development</u></p> <ul style="list-style-type: none"> <li>-Be increasingly independent in meeting their own care needs, e.g. brushing teeth, using the toilet, washing and drying their hands thoroughly.</li> <li>- Make healthy choices about food, drink, activity and tooth brushing.</li> </ul> <p><u>Expressive Arts and Design</u></p> <ul style="list-style-type: none"> <li>- Explore natural materials, indoors and outside. (Birth to three)</li> <li>- Make connections between the features of their family and other families.</li> <li>- (Birth to three)</li> </ul> <p>-Notice differences between people. (Birth to three)</p>				
<p>Spring 1 A</p> <p>What grows like a beanstalk?</p>	<p>Plants</p>	<p><u>Living things and their habitats –</u></p> <p>Explore the plants in the surrounding natural environment</p> <ul style="list-style-type: none"> <li>- Explore the animals in the surrounding natural environment</li> <li>-Explore plants and animals in a contrasting natural environment</li> </ul>	<p>plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting</p>	<p>Sunflower Growing competition</p> <p>Seeds to be given out at start of term.</p>	<p>Acceptance, Individuality, Respect</p>	<p>Floor Books/Face book/Displays</p>

		<u>Understanding the World</u> <ul style="list-style-type: none"> <li>• Draw information from a simple map.</li> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel whilst outside.</li> <li>• Recognise some environments that are different to the one in which they live.</li> </ul>	environment e.g. beach, forest			
Spring 2 A	Animals, excluding humans (vol 2)	<u>Animals, excluding humans</u> - Name and describe animals that live in different habitats. -Describe different habitats.  <u>Understanding the World</u> <ul style="list-style-type: none"> <li>• Recognise some environments that are different to the one in which they live. Physical Development</li> <li>• Revise and refine the fundamental movement skills they have already acquired: rolling;</li> </ul>	names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice	Learning Lion King songs	Acceptance, Individuality, Respect	Floor Books/Face book/Displ ays
Summer 1 A  Is outdoors the place to be?	Exploring senses (vol 1)	Play and explore outside – Throughout year  <u>Understanding the World</u> <ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel whilst outside</li> </ul>	spring, summer, autumn, winter, seasons, sunny, cloudy, hot,	Welly Walks with parents (stay and play)	Individuality	Floor Books/Face book/Displ ays



		<ul style="list-style-type: none"> <li>• Understand the effect of changing seasons on the natural world around them.</li> </ul> <p><u>Encouraging scientific enquiry</u></p> <p>Which clothes are suitable for each season? Observing over time How does a puddle change over time?</p>	warm, cold, shower, raining, storm, thunder, lightning, hail, sleet, snow, icy, frost, puddles, windy, rainbow, animals, young, plants, flowers			
Summer 2 A	Understanding the World Materials	Use all their senses in hands-on exploration of natural materials	Shiny, soft, hard, flexible, comfy, dull, bright, colourful, smooth, rough	STEM three little pigs house building activity	Individuality, Respect	Floor Books/Face book/Displays
Autumn 1 B						
Autumn 2 B	Humans (vol 2)	-Learn about how to take care of themselves - Learn about their senses	grow, change, baby, toddler, child, adult,	Children matching up baby pictures of parents	Acceptance, Individuality, Respect	Floor Books/Face book/Displays

		<p><u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Begin to make sense of their own lifestory and family’s history.</li> <li>• Understand the key features of the life cycle of a plant and an animal. Personal, Social and Emotional Development</li> </ul> <ul style="list-style-type: none"> <li>• Be increasingly independent in meeting their own care needs, e.g. brushing teeth, using the toilet, washing and drying their hands thoroughly.</li> </ul> <ul style="list-style-type: none"> <li>• Make healthy choices about food, drink, activity and toothbrushing. Expressive Arts and Design</li> </ul> <ul style="list-style-type: none"> <li>• Explore natural materials, indoors and outside. (Birth to three) • Make connections between the features of their family and other families.</li> </ul> <p>How does a baby change over time? Research using secondary sources Find out about the human life cycle from an expectant mother, a parent with a baby and an elderly person.</p>	old person, smell, taste, touch, feel, hear, see, blind, deaf	Social Media engagement		
Spring 1 B	Materials, including changing materials (vol 2)	<p>Combine and mix ingredients -Change materials by heating and cooling, including cooking.</p> <p><u>Understanding the World</u></p>	stir, cook, hot, oven, microwave, change, burn, melt, hard, runny, set, freeze,	Making chocolate cornflake cakes for parents/guardians	Acceptance, Individuality, Respect,  - experience of cooking, being safe, where	Floor Books/Face book/Displays

		<ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials.</li> <li>• Explore collections of materials with similar and/or different properties.</li> <li>• Talk about the differences between materials and changes they notice. Expressive Arts and Design</li> <li>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>• Develop their own ideas and then decide which materials to use to express them.</li> <li>• Join different materials and explore different textures.</li> </ul> <p><u>Encouraging scientific enquiry Classification</u></p> <p>Sort materials using simple properties.</p> <p>Observing over time How does the cake mixture change?</p> <p>How does chocolate change when heated?</p> <p>How does fruit juice change when put in the freezer?</p> <p>How does fruit change when blended?</p>	<p>freezer, cold, blended, hard, soft, bendy, stiff, wobbly, wood, plastic, paper, card, fabric</p>		<p>does our food come from?</p>	
<p>Spring 2 B</p>	<p>Electricity – Light (vol 2)</p>	<p>- Use battery-powered devices</p> <p>Understanding the World</p> <ul style="list-style-type: none"> <li>• Explore how things work</li> </ul> <p><u>Encouraging scientific enquiry Classification</u> Identify objects that use electricity to work. Identify devices that use batteries and/or mains electricity.</p>	<p>battery, plug, socket, electricity, wire, sound, light, move</p>	<p>Bring a battery powered toy from home</p>	<p>Acceptance, Individuality, Respect,</p>	<p>Floor Books Facebook Displays</p>

Summer 1 B	Exploring senses (vol 2)	<p>- Sound</p> <p><u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>• Explore how things work. Expressive Arts and Design • Use drawing to represent ideas like movement or loud noises.</li> <li>• Listen with increased attention to sounds.</li> <li>• Respond to what they have heard, expressing their thoughts and feelings.</li> <li>• Explore different materials freely, in order to develop their ideas about how to use them and what to make.</li> <li>• Develop their own ideas and then decide which materials to use to express them.</li> <li>• Join different materials and explore different textures.</li> </ul>	<p>sound, noise, loud, quiet, high, low, music, bang, blow, pluck, soft, hard, fast, slow, names of instruments</p>	<p>Song performance for graduation using instruments that have made.</p>	<p>Acceptance, Individuality, Respect,</p>	<p>Floor Books Facebook Displays</p>
Summer 2 B	Plants (vol 2)	<p>- Grow plants</p> <p><u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>• Use all their senses in hands-on exploration of natural materials. • Explore collections of materials with similar and/or different properties.</li> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> </ul>	<p>plant, leaf, stem, branch, root, bark, flower, petal, seed, berry, fruit, vegetable, bulb, plant, hole, dig, water, weed, grow, shoot, die, dead,</p>	<p>Eating vegetables they have planted previously in the year with Mr Griffiths</p>	<p>Acceptance, Individuality, Respect,</p>	<p>Floor Books Facebook Displays</p>

		<ul style="list-style-type: none"> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul> <p>Mathematics</p> <ul style="list-style-type: none"> <li>• Talk about and identify the patterns around them. For example: stripes on clothes, designs on rugs and wallpaper. Use informal language like 'pointy', 'spotty', 'blobs' etc.</li> </ul> <p>Expressive Arts and Design</p> <ul style="list-style-type: none"> <li>• Create closed shapes with continuous lines and begin to use these shapes to represent objects.</li> <li>• Draw with increasing complexity and detail, such as representing a face with a circle and including details.</li> </ul> <p>Encouraging scientific enquiry Comparative testing Compare how quickly different seeds/bulbs germinate</p> <p>Compare how different vegetable tops grow.</p> <p>Observing over time How does a plant change as it grows?</p> <p>What happens to fruit, vegetables and flowers when left over time?</p> <p>Researching using secondary sources Look at seed and bulb packets to learn how to plant and care for them.</p>	soil, names of plants they grow			

Reception						
Term	Unit Name	Curriculum Content Skills and knowledge	Key vocabulary	Authentic outcome	Cultural Capital/ SMSC / British Values	Evidence
Autumn 1 <b>What makes me unique?</b>	Animals excluding humans	<p><b><u>Animals, excluding humans</u></b></p> <p>-Name and describe animals that live in different habitats -Describe different habitats</p> <p><b><u>Understanding the World</u></b></p> <ul style="list-style-type: none"> <li>• Recognise some environments that are different to the one in which they live. Physical Development</li> <li>• Revise and refine the fundamental movement skills they have already acquired: rolling; crawling; walking; jumping; running; hopping; skipping; climbing.</li> </ul> <p><b><u>Encouraging scientific enquiry</u></b></p> <p>Classification - Sort animals according to where they live. Researching using secondary sources Learn how animals from a different habitat are cared for. Learn about animals in a different habitat.</p>	names of animals, live, on land, in water, jungle, desert, North Pole, South Pole, sea, hot, cold, wet, dry, snow, ice	Trip to Mrs Brown's farm.	Acceptance, Individuality, Respect,  Going to a farm.	Floor Books Facebook Displays

Autumn 2	Humans	<p><b>Humans</b></p> <p>-Talk about members of their immediate family and community.</p> <p>-Learn about how to take care of themselves</p> <p><b>Understanding the World</b></p> <ul style="list-style-type: none"> <li>• Talk about members of their immediate family and community.</li> <li>• Name and describe people who are familiar to them. Personal, Social and Emotional Development</li> <li>• See themselves as a valuable individual.</li> <li>• Manage their own needs. Physical Development</li> <li>• Know and talk about the different factors that support their overall health and wellbeing: regular physical activity; healthy eating;</li> <li>• toothbrushing; sensible amounts of 'screen time'; having a good sleep routine; being a safe pedestrian.</li> <li>• Further develop the skills they need to manage the school day successfully: lining up and queuing; mealtimes; personal hygiene. Mathematics</li> <li>• Compare length, weight and capacity. Encouraging scientific enquiry Classification Sort images of people according to their</li> </ul>	<p>hair (black, brown, dark, light, blonde, ginger, grey, white, long, short, straight, curly), eyes (blue, brown, green, grey), skin (black, brown, white), big/tall, small/short, bigger/smaller, baby, toddler, child, adult, old person, old, young, brother, sister, mother, father, aunt, uncle, grandmother, grandfather, cousin, friend, family, boy, girl, man, woman</p>	<p>Visit from doctor/dentist /nurse</p>	<p>Acceptance, Individuality, Respect,</p> <p>Visit from doctor/dentist /nurse</p> <p>All families are different</p>	<p>Floor Books</p> <p>Facebook Displays</p>

		characteristics. Researching using secondary sources Find out information from visitors (dentist, nurse etc.). Pattern seeking Are taller children faster? Are taller children stronger?					
Spring 1	What makes the world around us?	Materials including changes in materials	<p><b>Materials, including changing materials</b></p> <ul style="list-style-type: none"> <li>-Explore a range of materials, including natural materials</li> <li>-Make objects from different materials, including natural materials</li> <li>-Observe, measure and record how materials change when heated and cooled</li> <li>-Compare how materials change over time and in different conditions</li> </ul> <p><b><u>Understanding the World</u></b></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel whilst outside.</li> </ul> <p><u>Encouraging scientific enquiry</u></p> <p>Comparative testing</p> <p>How is popcorn made in a microwave compare to popcorn made on a fire?</p> <p>How quickly do ice cubes melt in different areas of the playground?</p> <p>How are pizza bases different when made with different flours?</p> <p>How does a loaf cook differently in different tins?</p>	ice, water, frozen, snow, melt, wet, cold, slippery, smooth, big, bigger, biggest, smaller, smaller, smallest, hard, soft, bendy, rigid, wood, plastic, paper, card, metal, strong, weak, hot, apply heat, waterproof, soggy, not waterproof, best, change, change back	Weekly welly walks- Stay and Play STEM activity – Three little pigs- House building.	Acceptance, Individuality, Respect,	Floor Books Facebook Displays



		<p>How do cupcakes cook if they have different amounts of mixture?</p> <p>Observing over time How does the block of ice change over time?</p> <p>How does cake mixture/bread dough change as it is cooked?</p>				
Spring 2	Light and sound	<p>Light -Explore shadows -Explore rainbows</p> <p><u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>Describe what they see, hear and feel whilst outside.</li> </ul> <p><u>Personal, Social and Emotional Development</u></p> <ul style="list-style-type: none"> <li>Manage their own needs.</li> </ul> <p><u>Encouraging scientific enquiry</u> Comparative testing Compare the shape of shadows made by different objects. Classification Which objects/materials make dark shadows?</p>	<p>Sun, sunny, light, shadow, clouds, torch, see-through, non-see-through</p>	<p>Puppet show- Filmed for Parents/Guardians</p>	<p>Acceptance, Individuality, Respect,</p>	<p>Floor Books Facebook Displays</p>
<p>Summer 1</p> <p><b>Can you tell a tale?</b></p>	<p>Living things and their habitat</p>	<p>Living things and their habitats</p> <p>-Explore the plants in the surrounding natural environment -Explore the animals in the surrounding natural environment -Explore plants and animals in a contrasting natural environment <u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>Draw information from a simple map.</li> <li>Explore the natural world around them.</li> <li>Describe what they see, hear and feel whilst outside.</li> </ul>	<p>plant, tree, bush, flower, vegetable, herb, weed, animal, names of plants and animals they see, name of a contrasting environment e.g. beach, forest</p>	<p>Mini beast hunt, visit to Mrs Brown's farm, Egg hatching?</p>	<p>Acceptance, Individuality, Respect,</p>	<p>Floor Books Facebook Displays</p>

		<ul style="list-style-type: none"> <li>• Recognise some environments that are different to the one in which they live.</li> <li>• Plant seeds and care for growing plants.</li> <li>• Understand the key features of the life cycle of a plant and an animal.</li> <li>• Begin to understand the need to respect and care for the natural environment and all living things.</li> </ul> <p><u>Encouraging scientific enquiry</u> Classification Name and describe plants and animals they find in the school grounds.</p> <p>Pattern seeking Look for minibeasts in different areas of the school grounds. Look for plants in different areas of the school grounds.</p>				
Summer 2	Forces	<p>Forces</p> <ul style="list-style-type: none"> <li>-Explore how to change how things work</li> <li>- Explore how the wind can move objects</li> <li>- <u>Explore how objects move in water</u></li> </ul> <p><u>Understanding the World</u></p> <ul style="list-style-type: none"> <li>• Explore the natural world around them.</li> <li>• Describe what they see, hear and feel whilst outside. <u>Encouraging scientific enquiry</u></li> </ul> <p>Comparative testing How many cubes/small plastic animals can fit in different boats?</p>	float, sink, up, down, top, bottom, surface, move, roll, drop, fly, turn, spin, fall, fast, slow, faster, slower, fastest, slowest, further, furthest, wind, air, water, blow, bounce	Facebook post of children's work. Making boats. How many marbles can they hold?	Acceptance, Individuality, Respect,	Floor Books Facebook Displays

		<p>Compare how cars move down ramps/gutters.</p> <p>Compare how wheels turn when sand or water is poured through.</p> <p>Compare how objects fall.</p> <p>Compare how objects fall with and without parachutes. Compare how different balls bounce. Compare how things move when blown. Compare how a marble moves through different liquids.</p> <p>Compare how different paper aeroplanes fly.</p>				
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Year 1						
Term	Unit Name	Procedural knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1 Was the past a blast?	Seasonal changes	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe changes across the four seasons</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>	<p>Understand how the observed weather is typical (or not) of the weather for the season.</p> <p>Understand that day length varies according to the season.</p> <p>Understand it is not safe to look directly at the sun, even when wearing dark glasses.</p>	Weather, seasons, day length		<p>Acceptance, Individuality, Respect,</p> <p>Weather reports – awareness of different areas</p>
Autumn 2	Plants- Basic Structures	<p>Ask simple questions and recognise that they can be answered in different ways</p> <p>Predict the outcomes of the bean and seeds and set up a diary to observe the growth over time. Observe closely, using simple equipment.</p>	<p>Become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</p> <p>Understand the basic structure of a flower and the basic function of the main parts.</p>	Names of common wild and garden plants, including evergreen and deciduous trees. leaves, flowers (blossom), petals, fruit, roots, bud, bulb, seed, trunk,	Trip to our forest school area to take bark prints/rubbings	<p>Acceptance, Individuality, Respect, Appreciation of the natural world</p>

				branches, stem		
Spring 1 Where can Disney take us?	Materials including changing materials	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Describe materials using scientific vocabulary.</p> <p>Sort objects into categories</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests Investigate why ice melts.</p> <p>Investigate materials that are waterproof using their observations and ideas to suggest answers to questions</p>	<p>Understand that objects need to be distinguished from their materials.</p> <p>Understand that objects are made from materials with properties and begin to describe those properties.</p> <p>Identify, name &amp; classify a variety of everyday materials.</p> <p>Learn to compare and group together a variety of everyday materials on the basis of their properties.</p> <p>Understand that water is a material and ice is water</p>	<p>Compare, observe, changes over time, explore, patterns, relationships, classify.</p> <p>Measurement s, describe, data, record, tables, charts.</p> <p>Material, wood, glass, plastic, metal, water, rock, brick, paper, fabric, physical properties.</p>	<p>STEM activity Link to Disney. Mickey's house needs to withstand a hurricane</p>	<p>Acceptance, Individuality, Respect,</p>
Spring 2	Materials – Environmental focus	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Search for and find different wooden and plastic objects around school</p> <p>Sort objects into plastic and not</p> <p>Observe closely, using simple equipment.</p> <p>Perform simple tests</p>	<p>Know that some materials can be recycled and others can't</p> <p>Learn to identify and distinguish plastics from non-plastics</p> <p>Identify and classify using observations and ideas to suggest answers to questions</p>	<p>Compare, observe changes over time, explore, patterns, relationships, classify.</p> <p>Measurement s, describe, data, record, tables, charts.</p>	<p>Create a fact sheet about plastics.</p> <p>Visitor discussion re looking after our environment</p>	<p>Acceptance, Individuality, Respect,</p> <p>Awareness of re-cycling and why it is important</p>

		<p>Gather and record data to help in answering questions.</p> <p>Investigate which wooden and plastic objects float or sink</p> <p>Investigate if all plastics are waterproof.</p>	<p>Distinguish between an object and the material from which it is made.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p>	<p>Material, wood, glass, plastic, metal, water, rock, brick, paper, fabric, physical properties</p>		
<p>Summer 1 + 2</p>	<p>Plants and Seasonal Change</p>	<p>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Predict the outcomes of the bean and seeds investigations and set up a diary to observe the growth over time.</p> <p>Observe closely, using simple equipment.</p> <p>Keep records of how plants change over time (including buds growing and leaves falling off trees).</p> <p>Observe and examine fruits. (Brief introduction ready for Y2)</p> <p>Explore and compare the differences between things that are living, dead.</p>	<p>Become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).</p> <p>Understand the basic structure of a flower and the basic function of the main parts.</p> <p>Identify a variety of trees and discuss their similarities and differences. Take bark and leaf rubbings using paper and wax crayons.</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 (seasonal changes).</p>	<p>Names of common wild and garden plants, including evergreen and deciduous trees. leaves, flowers (blossom), petals, fruit, roots, bud, bulb, seed, trunk, branches, stem. Identify, group, describe, diagrams, observe. Names of equipment, such as 'magnifying glass'.</p>	<p>Planting with Mr Griffiths Snr</p> <p>Trip to forest school area</p> <p>What trees can we identify</p> <p>Leaf rubbings</p> <p>Art with natural materials found</p>	<p>Learning where our food comes from.</p> <p>Awe and wonder at the natural world.</p> <p>Respect for living things</p>

Pupils should use the local environment throughout the year to explore and answer questions about plants growing in their habitat. Where possible, they should observe the growth of flowers and vegetables that they have planted.

They should become familiar with common names of flowers, examples of deciduous and evergreen trees, and plant structures (including leaves, flowers (blossom), petals, fruit, roots, bulb, seed, trunk, branches, stem).

Year 2						
Term	Unit Name	Procedural Knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1	'ANIMALS, INCL HUMANS' -Health Focus-	Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene	To know the importance of eating the right amounts of different types of food for humans.  To know the importance of exercise for humans.	adult develop life cycle offspring reproduce young live young dehydrate diet disease energy exercise germs heart rate hygiene, nutrition, pulse	Visit from dentist, doctor, nurse, sports coach  Visit from nutritionist/school cook	Learning about the NHS.  How we can stay healthy
Autumn 2	Animals including humans  (Animal survival and growth)	Pupils should be taught to: notice that animals, including humans, have offspring which grow into adults find out about and describe the basic needs of animals, including humans, for survival (water, food and air)  To investigate whether children get faster as they get older.	To know that animals have offspring which grow into adults.  To learn how humans grow and change.  To find out about and describe the basic needs of animals for survival.	adult develop life cycle offspring reproduce young live young dehydrate diet disease energy exercise germs heart rate hygiene, nutrition, pulse	Visit from dentist, doctor, nurse, sports coach  Children to design a healthy, nutritious meal to showcase learning.	Learning about the NHS.  How we can stay healthy  Respect for living things



Spring 1	'USES OF EVERYDAY MATERIALS'	<p>Explore the properties of different kitchen paper and disposable cloths.</p> <p>Make predictions about which would be best at mopping up a spillage of water.</p> <p>Investigate which papers are the most absorbent by choosing a method and working in a group.</p> <p>Investigate and discover how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p> <p>Devise an investigation to test a variety of materials for their absorbent property.</p> <p>Make predictions and to observe and record results</p> <p>Discuss findings and suggest explanations.</p>	<p>Know the different reasons why people may need to use absorbent materials.</p> <p>Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.</p> <p>Know that materials have different properties.</p> <p>Consider what buildings are made of, and why.</p> <p>Identify waterproof materials and their uses.</p> <p>Identify and discuss the difference between natural and manmade objects.</p> <p>Learn about what happens when a material is heated up and why it changes shape.</p> <p>Identify uses of different everyday materials.</p> <p>Compare the suitability of different everyday materials.</p>	<p>materials suitability properties squash bend twist stretch</p>	<p>Investigation - how we can make materials waterproof?</p> <p>Exploring how the Mackintosh was invented</p>	<p>Acceptance, Individuality, Respect, Working together</p> <p>Link to inventors and why they have made an impact</p>
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			Know that the shapes of objects made from some materials can be changed and be able to explain this.			
Spring 2	LIVING THINGS AND THE ENVIRONMENT	<p>Investigate the differences between things that are living, dead, and things that have never been alive</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>Ask simple questions and recognise that they can be answered in different ways.</p> <p>Observe closely, using simple equipment. Identify and classify.</p> <p>Use observations and ideas to suggest answers to questions.</p> <p>Map a habitat and identify what is in it.</p>	<p>Know and compare the differences between things that are living, dead and have never been alive.</p> <p>Know that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.</p> <p>Identify and name a variety of plants and animals in their habitats, including microhabitats</p> <p>Describe a habitat and identify animals that live in it. Identify how an animal is suited to its habitat.</p> <p>Know and explain how living things in a habitat depend on each other.</p> <p>Identify animals in their habitats</p>	<p>life processes</p> <p>living</p> <p>dead</p> <p>never living</p> <p>food chain</p> <p>food sources</p> <p>habitat</p> <p>microhabitat</p> <p>depend</p> <p>survive</p>	<p>Visit to farm, Mrs Brown coming to talk about her farm</p> <p>Exploring the school environment</p> <p>Making use of Forest Education and resources – using skills and knowledge</p>	<p>Where our food comes from, exploring food chains</p> <p>Awe and wonder at the natural world</p> <p>Respect Social – working together</p>

Summer 1	'PLANTS' (Growing Plants)	<p>Plant seeds and bulbs and suggest how to care for them.</p> <p>Use observations to explain what plants need. Observe and describe the growth of different plants.</p> <p>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>	<p>Understand how plants disperse their seeds.</p> <p>Look closely at plants and trees and record what can be seen.</p> <p>Explain the life cycle of the plants.</p> <p>Suggest a way we can tell plants are living things. Describe what plants need to grow and stay healthy</p>	<p>life processes living dead never living food chain food sources habitat microhabitat depend survive</p>	<p>Sunflower growing competition.</p>	<p>Respect for living things</p> <p>Appreciation of the natural world and the school locality</p>
Summer 2	PLANTS' (Growing Plants)	<p>Observe and record, with some accuracy, the growth of a variety of plants as they change over time from a seed or bulb.</p> <p>Observe similar plants at different stages of growth;</p> <p>Set up a comparative test to show that plants need light and water to stay healthy</p>	<p>Understand and describe how seeds and bulbs 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>Know that plants are living and eventually die.</p>	<p>life processes living dead never living food chain food sources habitat microhabitat depend survive</p>	<p>Taking home seeds the children have sowed</p>	<p>Acceptance, Individuality, Respect, Appreciation of nature</p> <p>Working collaboratively</p>
Scientific enquiry : Ongoing observing plants and animals in the local environment throughout the year						

Year 3						
Term	Unit Name	Procedural Knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1  How did people from the past shape the world?	Rocks and Fossils	<p>Devise comparative tests for rocks, record and evaluate observations and results.</p> <p>Collect evidence of the local bedrock and other rocks in the local area by doing a rock survey.</p> <p>Gather evidence on how different soils can vary and suggest reasons for this.</p> <p>Investigate, discover and classify the different components of soil</p>	<p>Understand that rocks are formed in 3 different ways.</p> <p>Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties.</p> <p>Use knowledge of the properties of rocks to determine why particular rocks were selected for different tasks.</p> <p>Know and describe in simple terms how fossils are formed when things that have lived are trapped within rock</p> <p>Understand the process of fossil formation and be able to describe it in simple terms.</p> <p>Know that soils are made from rocks and organic matter.</p>	Appearance, physical properties, food, organic matter, soils, fossils, crystals, sedimentary	<p>Career/museum visit - archaeologist</p> <p>Forest Education. Link to history unit</p> <p>Using skills to explore the outside environment.</p>	Acceptance, Individuality, Respect, Collaboration and co-operation

Autumn 2	LIGHT & ASTRONOMY 'Y3 LIGHT' (Shadows and Reflective surfaces)	<p>Discover through active investigation that without light you cannot see.</p> <p>Actively investigate the nature of white light through a number of practical activities.</p> <p>Observe that light is reflected from surfaces</p> <p>Find patterns in the way that the size of shadows changes.</p> <p>Predict and then investigate which colours show up best and least in the dark.</p> <p>Investigate the effect of shining a torch on various objects including reflective materials.</p> <p>Investigate how light is reflected by different surfaces, looking for similarities and differences and noting observations.</p> <p>Investigate the nature of reflections in mirrors through a variety of practical tasks including mirror writing, navigating mirror mazes and multiple mirror reflections.</p>	<p>Learn through investigation that light travels in straight lines.</p> <p>Recognise we need light in order to see things and that dark is the absence of light</p> <p>Recognise that light from the sun can be dangerous and that there are ways to protect their eyes</p> <p>Recognise that shadows are formed when the light from a light source is blocked by an opaque object</p> <p>Know what a light source is and that the sun is a light source which is so powerful that it will damage your eyes if you look at it (even with sunglasses).</p> <p>Understand how a shadow changes depending on the object's orientation.</p>	<p>Dark, absence of light, reflected, surfaces, reflective, dangerous, protect, blocked, opaque, shadows, light source, object,</p>	<p>Children making their own shadow puppets – link to English unit.</p>	<p>Acceptance, Individuality, Respect, Appreciation of senses Collaborative work Taking different roles within a team</p>
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		Investigate how objects made from different materials cast shadows				
Spring 1	'ANIMALS, INCL HUMANS' (Skeletons and Movement)	Investigate whether people who do more sport have stronger muscles.  Gather, record, classify and present data in a variety of ways to help answer questions.  Record findings using simple scientific language, bar charts, and tables.	Understand the 5 food groups and the proportions of each needed to create a healthy, balanced diet.  Know that humans and some other animals have skeletons and muscles for support, protection and movement.	Humans, animals, nutrition, skeleton, muscles, function, grouping, observe, compare, research	Visit from nurse/sports coach/nutritionist	Acceptance, Individuality, Respect,  Healthy living Working together
Spring 2	HEALTH 'ANIMALS, INCL HUMANS' (Health & Nutrition)	Gather, record, classify and present data in a variety of ways to help answer questions.  Record findings using simple scientific language, bar charts, and tables.  Using secondary resources to find sugar content	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.  Know the nutritional properties of carbohydrates, fruit and vegetables, proteins and dairy foods as well as importance of limiting fat and sugar intake.	Humans, animals, nutrition, skeleton, muscles, function, grouping, observe, compare, research	Visit from nurse/sports coach/nutritionist  Link to Computing unit	Acceptance, Individuality, Respect,
Summer 1	'FORCES AND MAGNETS	Ask questions and answer them by planning and carrying out a fair test.	Understand that forces are pushes and pulls which can make things move, stop or change shape. Set up	Magnetic forces, attract, repel, magnetic	Children making their own	Acceptance, Individuality, Respect,

		<p>Explore forces and discover that gravity and magnetism can act without contact.</p> <p>Explore how magnets behave towards each other and form theories to explain it.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others</p> <p>Predict whether two magnets will attract or repel each other, depending on which poles are facing</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. Describe magnets as having two poles</p>	<p>and conduct a comparative fair test, record measurements and discuss results.</p> <p>Understand that magnets have 2 poles and that opposite poles attract and like poles repel. compare how things move on different surfaces</p> <p>Understand that some forces need contact between two objects, but magnetic forces can act at a distance.</p>	<p>materials, poles, direct contact</p>	<p>magnetic board games</p>	<p>Working together - democracy</p>
<p>Summer 2</p>	<p>'PLANTS' (Functions of plant parts and growth)</p>	<p>Explain how to make a test fair.</p> <p>Dissect a flower and label the parts</p> <p>Explore the requirements of plants for life and growth (air,</p>	<p>Name the main parts of a plant. Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers Describe the functions of the roots of plants.</p>	<p>light, water, nutrients from soil, and room to grow, transported, life cycle, pollination, seed formation</p>	<p>Sunflower Competition</p>	<p>Acceptance, Individuality, Respect,</p>

		<p>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</p> <p>Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal.</p>	<p>Name the life processes common to all living things.</p> <p>Understand that plants make their own food in their leaves. Understand that there are nutrients in the soil that plants use for healthy growth.</p> <p>Explain how fertilisers can replace or add to the nutrients in the soil. List the functions of plant stems. Explain what seeds need to germinate and grow.</p> <p>Describe the life cycle of a flowering plant. Describe the different ways in which seeds can be dispersed.</p> <p>Know why it is important for seeds to be dispersed.</p>	<p>and seed dispersal, nutrition, reproduction, compare, factors</p>		
	<p>There should be plenty of opportunities throughout the year for children to use the school/local environment to observe plant lifecycles with a particular focus on the different parts of a plant (e.g. comparing fruits and seeds and looking for examples of pollination). This could be done through an ongoing/monthly nature journal to observe, record and review over a period of time.</p>					



Year 4						
Term	Unit Name	Procedural knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1 How much power is too much power?	Electricity	<p>Construct simple circuits.</p> <p>Explore and 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>Investigate some common conductors and insulators, and associate metals with being good conductors.</p>	<p>Understand that some appliances run from mains electricity, while others run off batteries.</p> <p>Identify common appliances that run on electricity.</p> <p>Learn how to construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</p> <p>Identify problems within a faulty circuit (e.g. missing bulb, etc).</p> <p>Know some common conductors and insulators.</p> <p>Associate metals with being good conductors.</p> <p>Know 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>insulators, conductors, components, pictorial representations.</p>	<p>Link to making motorised cars in DT</p>	<p>Acceptance, Individuality, Respect,</p> <p>Learning about engineering jobs that use aspects of STEM</p>

Autumn 2	'ANIMALS, INCL HUMANS' (Teeth and Digestion)	<p>Name the different types of teeth and identify their function.</p> <p>To name the key parts of the digestive system and describe their simple functions.</p> <p>Identify and name the key feature of a food chain.</p> <p>Ask relevant questions and using different types of scientific enquiries to answer them</p>	<p>Learn to identify the different types of teeth in humans and their simple functions.</p> <p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey.</p>	Herbivore, carnivores, digestive system, functions, food chains, producers, predators and prey mouth, tongue, teeth, oesophagus, stomach, and small and large intestine	<p>Dentist to visit.</p> <p>Cleaning teeth in class.</p>	Acceptance, Individuality, Respect,
Spring 1 Is Europe a great continent?	MATERIAL PROPERTIES & MATERIAL CHANGES (States Of Matter)	<p>Investigate the differences between solids and liquids</p> <p>Observe that some materials change state when they are heated or cooled, and measure or research the temperature at which this happens in degrees Celsius (°C).</p> <p>Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables reporting on findings from enquiries,</p>	<p>Learn how to compare and group materials together, according to whether they are solids, liquids or gases</p> <p>To learn about the water cycle and begin to understand the terms.</p> <p>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	Solids, liquids, gases, materials, change state, heated, cooled, temperature, degrees Celsius, evaporation, condensation, water cycle.	<p>Share our investigations on our school facebook page</p> <p>Children showcasing skills – data collection linked to environmental issues/weather</p>	<p>Acceptance, Individuality, Respect,</p> <p>Learning about engineering jobs that use aspects of STEM</p>

Spring 2	'SOUND'	<p>Explore the effect of distance on sound.</p> <p>Work scientifically by: finding patterns in the sounds that are made by different objects.</p> <p>Find patterns between the volume of a sound and the strength of the vibrations that produced it.</p> <p>Investigate patterns between pitch of sound and object that produced it, and volume and strength of vibrations that produced the sound.</p> <p>Set up simple practical enquiries, comparative and fair tests. Make systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers</p>	<p>Recognise that vibrations from sounds travel through a medium to the ear.</p> <p>Identify how sounds are made, associating some of them with something vibrating.</p> <p>Recognise that sounds get fainter as the distance from the sound source increases.</p> <p>Understand how we hear sounds, and how we can alter the volume of the sounds we hear.</p>	<p>Travel, vibrations, pitch, sound, produce, distance, volume, fainter, names of instruments.</p>	<p>Making instruments from recycled materials</p>	<p>Acceptance, Individuality, Respect,</p> <p>Instruments/music from around the world.</p>
<p>Summer 1 + 2</p> <p>Is it right to always do the right thing?</p>	<p>LIVING THINGS &amp; THEIR HABITATS (biodiversity, classification &amp; care of environments)</p>	<p>Recognise that living things can be grouped in a variety of ways</p> <p>Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment recognise</p>	<p>To know the 7 characteristics of a living thing. Sort living things in a variety of ways. within the local environment, observe habitats and record the different living things</p>	<p>Living things, local, wider environment, human impact, positive, negative, nature reserve,</p>	<p>Trip to forest school area. Minibeast hunt and tree identification.</p>	<p>Acceptance, Individuality, Respect, Appreciation of the world around them.</p>

		<p>that environments can change and that this can sometimes pose dangers.</p>	<p>found. Make a branching database to sort and identify the local invertebrates. Recognise that living things can be grouped in a variety of ways. Explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment.</p>	<p>population, litter, deforestation, plants, animals, habitat, vertebrate, invertebrate, fish, amphibians, reptiles, birds, and mammals; and invertebrates</p>		<p>Working together-social skills</p>
	<p>There should be plenty of opportunities throughout the year for children to use the school/local environment to observe and identify how a habitat changes. This could include a focus on the relationships between the plants and animals within a habitat. This could be done through an ongoing/monthly nature journal to observe, record and review over a period of time</p>					

Year 5						
Term	Unit Name	Procedural Knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1 What makes Britain great?	LIGHT & ASTRONOMY 'EARTH & SPACE'	<p>Describe the movement of the Earth and other planets relative to the sun in the solar system.</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. Investigate the way that ideas about the solar system have developed.</p> <p>Work scientifically by: comparing the time of day at different places on the Earth through internet links and direct communication; creating simple models of the solar system;</p>	<p>Learn about the movement of the Sun and Earth to create night and day.</p> <p>Understand that the sun is a star at the centre of our solar system and that it has 8 planets: Mercury, Venus, Earth, Mars, Jupiter, Saturn, Uranus and Neptune (Pluto was reclassified as a 'dwarf planet' in 2006).</p> <p>Understand that a moon is a celestial body that orbits a planet (Earth has 1 moon; Jupiter has 4 large moons and numerous smaller ones).</p> <p>Understand how the geocentric model of the solar system gave way to the heliocentric model by considering the work of</p>	Rotate, axis, celestial, solar system, sundial, solar system	Trip to Jodrell Bank	<p>Acceptance, Individuality, Respect,</p> <p>Trip to an observatory</p> <p>Learning about engineering jobs that use aspects of STEM</p> <p>Appreciation of the importance of astronomy and how theories have changed over history.</p>

			<p>scientists such as Ptolemy, Alhazen and Copernicus.</p> <p>Understand that some people think that structures such as Stonehenge might have been used as astronomical clocks. (relate to learning in Y4 - prehistory).</p>			
Autumn 2	'FORCES' (Friction and air resistance and mechanisms)	<p>Explore falling objects and raise questions about the effects of air resistance.</p> <p>Explore the effects of air resistance by observing how different objects such as parachutes and sycamore seeds fall. Pupils explore the effects of friction on movement and find out how it slows or stops moving objects, for example, by observing the effects of a brake on a bicycle wheel.</p> <p>Explore the effects of levers, pulleys and simple machines on movement.</p> <p>Work scientifically by: exploring falling paper cones or cupcake</p>	<p>Learn how scientists, for example, Galileo Galilei and Isaac Newton helped to develop the theory of gravitation.</p> <p>Know and 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</p>	Resistance, friction, gravity	Experiments shared on school Facebook Parachute investigation slow motion videos	<p>Acceptance, Individuality, Respect,</p> <p>Learning about jobs that use aspects of STEM</p> <p>Appreciation of the work of scientists from the past to shape modern day thinking</p>

		<p>cases, and designing and making a variety of parachutes and carrying out fair tests to determine which designs are the most effective.</p> <p>Explore resistance in water by making and testing boats of different shapes</p>	<p>allow a smaller force to have a greater effect. Experience forces that m</p>			
<p>Spring 1</p> <p>Do you always appreciate everything we've got?</p>	<p>' Animals and Humans</p>	<p>Explore the keys stages of human development (including foetal development).</p> <p>Work scientifically by researching the gestation periods of other animals and comparing them with humans; by finding out and recording the length and mass of a baby as it grows.</p> <p>Work scientifically by recording data using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.</p> <p>Explore the physical and mental changes to the human body as it ages.</p>	<p>Know and describe the changes as humans develop to old age.</p> <p>Learn about the changes experienced in puberty.</p> <p>Understand the six key areas of human development.</p> <p>To understand the physical and mental effects as humans and animals age.</p> <p>Apply knowledge to draw a timeline to indicate stages in the growth and development of humans.</p>	<p>Gestation, puberty foetus, baby, child, adolescent, adult, old age</p>	<p>Visit by health worker.</p>	<p>Acceptance, Individuality, Respect.</p> <p>Appreciation of human life</p>

<p>Spring 2</p>	<p>LIVING THINGS &amp; THEIR HABITATS'</p> <p>(observing life cycles /reproduction in animals and plants)</p>	<p>Observe life-cycle changes in a variety of living things, for example plants in the vegetable garden or flower border, and animals in the local environment.</p> <p>Work scientifically by: observing and comparing the life cycles of plants and animals in their local environment with other plants and animals around the world (in the rainforest, in the oceans, in desert areas and in prehistoric times), asking pertinent questions and suggesting reasons for similarities and differences.</p> <p>Observe changes in an animal over a period of time (for example, by hatching and rearing chicks), comparing how different animals reproduce and grow.</p>	<p>Know and 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>Learn out about different types of reproduction, including sexual and asexual reproduction in plants, and sexual reproduction in animals.</p> <p>Learn how to grow new plants from different parts of the parent plant, for example, seeds, stem and root cuttings, tubers, bulbs.</p>	<p>life cycle, sexual, asexual, reproduction</p>	<p>Children growing willows from a cutting.</p>	<p>Acceptance, Individuality, Respect.</p>
<p>Summer 1 + 2</p> <p>What is true beauty according you?</p>	<p>Materials</p>	<p>Explore and compare the properties of a broad range of materials.</p> <p>Explore reversible changes, including evaporating, filtering, sieving, melting and dissolving, recognising that melting and dissolving are different processes.</p>	<p>Relate learning to what they learnt about magnetism in year 3 and about electricity in year 4 know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p>	<p>Material, magnetism, filter, sieve, melt, dissolve, reaction, explore, compare, observe, fair test, reversible, irreversible</p>	<p>Fashion show inked to DT – using different materials.</p> <p>Visit by STEM ambassador</p>	<p>Acceptance, Individuality, Respect,</p> <p>Learning about jobs that use aspects of STEM</p>



		<p>Explore changes that are difficult to reverse, for example, burning, rusting and other reactions, for example, vinegar with bicarbonate of soda.</p> <p>Work scientifically by: carrying out tests to answer questions, for example, 'Which materials would be the most effective for making a warm jacket, for wrapping ice cream to stop it melting, or for making blackout curtains?' Observe and compare the changes that take place, for example, when burning different materials or baking bread or cakes.</p>	<p>Compare and group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets. Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating. Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic. Demonstrate that dissolving, mixing and changes of state are reversible changes. Know and 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</p>			
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			acid on bicarbonate of soda			
<p>There should be plenty of opportunities throughout the year for children to use the school/local environment to observe and identify a variety of plant and animal life cycles. This could be done through an ongoing/monthly nature journal to observe, record and review a variety of examples over a period of time. The unit on 'Human life cycles' can be linked to PSHEE work on 'Relationships' and the Year 5 Science unit 'Habitats and life cycles' rather than being taught as a separate unit.</p>						

Year 6						
Term	Unit Name	Procedural Knowledge	Knowledge	Key vocabulary	Authentic Outcome	Cultural Capital/ SMSC / British Values
Autumn 1 Is change always a good thing?	'LIVING THINGS & THEIR HABITATS' (classification)	<p>Describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including microorganisms, plants and animals</p> <p>Give reasons for classifying plants and animals based on specific characteristics Analyse the advantages of certain plant features.</p> <p>Apply scientific knowledge to discuss a statement.</p>	<p>Understand the process of photosynthesis.</p> <p>Revise and understand the seven life processes.</p> <p>Understand a classification key Create a branching database to classify animals. Understand how animals have adapted for the environment that they live in.</p>	<p>Microorganisms Circulation Invertebrates Vertebrates Classifications Characteristics Algae</p>	<p>Children making bug hotels/bird boxes – link to prior learning in DT</p>	<p>Respect for living things</p> <p>Social – collaboration and team work. Sharing out roles, Democracy.</p>

		Create a habitat and animal protection	Understand that micro-organisms can cause useful decay.			
Autumn 2	'EVOLUTION & INHERITANCE' (incl. adaptations)	<p>Research a leading scientist. Introduce the changes in the complexity of life over vast periods of time using a time line. Write an explanation text about their creature.</p> <p>Identify how animals and plants are adapted to suit their environment</p>	<p>Understand that inheritance of features comes from parents.</p> <p>Understand reasons for extinction.</p> <p>Understand how fossils provide evidence of changes over time.</p> <p>Understand the meaning of survival of the fittest.</p> <p>Recognise how the human skeleton has evolved.</p> <p>Recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago.</p> <p>Recognise that living things produce offspring of the same kind, but</p>	<p>Characteristics</p> <p>Differences</p> <p>Environment</p> <p>Evolution</p> <p>Generations</p> <p>Genes Inherit</p> <p>Inheritance</p> <p>Parents</p> <p>Similarities</p> <p>Variation</p> <p>Evolve Theory</p> <p>Observations</p> <p>Homosapien</p> <p>Selection</p> <p>Survival of the fittest</p> <p>Skelton</p> <p>Adaptation</p>	<p>Children bringing pictures of themselves as babies.</p>	<p>Acceptance, Individuality, Respect, Reflection on the wonders of the natural world</p> <p>Appreciation of the work of scientists indifferent eras</p>

			normally offspring vary and are not identical to their parents.			
Spring 1 What makes the earth angry?	'ANIMALS, INCL HUMANS' (Circulatory system and Exercise)	Investigate how the heart works to pump blood around the body.  Find out about blood composition, types, vessels and functions.	Identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood.  Recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function.	Virus Blood vessels Artery Veins	Visitor to discuss health, fitness and how to live a healthy lifestyle.  Nurse/nutritionist/sports coach or athlete. Design a fitness for another year group to try.	Acceptance, Individuality, Respect, Learning about jobs that use aspects of STEM Visit from nurse/sports professional.
Spring 2	HEALTH 'ANIMALS, INCL HUMANS' (Keeping Healthy, Diet & Lifestyle)	Investigate the effect of exercise and rest on pulse rate	Describe the ways in which nutrients and water are transported within animals, including humans.  Understand how the gas exchange takes place in the lungs.  To understand why exercise is good for our health. Revise and understand what happens to food in	Virus Blood vessels Artery Veins	Design a fitness circuit for Year 5	Acceptance, Individuality, Respect,  Visit from nurse/sports professional.

			<p>our bodies. Understand how nutrients are transported within animals.</p> <p>Understand that tobacco, alcohol and other drugs can have a negative effect on the body.</p>			
<p>Summer 1 Does everyone's opinion matter?</p>	<p>LIGHT &amp; ASTRONOMY 'Y6 LIGHT'</p>	<p>Carry out an investigation to explain how shadows are formed.</p> <p>Investigate why rainbows appear in the sky. Explore refraction.</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</p>	<p>Know that light has to travel from a source.</p> <p>Gain a basic understanding of how pictures are seen and interpreted by the brain.</p> <p>Understand that light travels in straight lines. Know how to show the direction of light travelling. Know that shadows are created when an object blocks light. Know and understand how light allows us to see colour. Recognise that light appears to travel in straight lines</p>	<p>Iris Blind spot Sclera Cornea Retina Angle of incidence Transparent Translucent Opaque Refraction</p>	<p>Photography competition – link with art unit – Photographer in class.</p>	<p>Acceptance, Individuality, Respect,</p> <p>Visit from photographer</p>

Summer 2	ELECTRICITY	<p>Systematically identifying the effect of changing one [thing] component at a time in a circuit.</p> <p>Designing and make a set of traffic lights, a burglar alarm or some other useful circuit</p>	<p>Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit.</p> <p>Compare and give reasons for variations in how components function, including the brightness of bulbs, the loudness of buzzers and the on/off position of switches.</p> <p>Know and use recognised symbols when representing a simple circuit in a diagram.</p> <p>Circuit diagrams can be used to construct a variety of more complex circuits predicting whether they will 'work'.</p>	<p>insulators, conductors, components, pictorial representations.</p>	<p>Children making their own alarm / designing a unique circuit using the skills they have learnt.</p>	<p>Acceptance, Individuality, Respect,</p> <p>Learning about jobs that use aspects of STEM</p> <p>Visit from Electrician</p>
<p>There should be plenty of opportunities throughout the year for children to use the school/local environment to observe and identify a variety of plants and animals that live there focusing on their adaptations for survival. This could be done through an ongoing/monthly nature journal to observe, record and review a variety of examples over a period of time and would support their learning and wider research in the 'Living Things and Their Habitats' unit and the 'Evolution and Inheritance' unit.</p>						

### **Impact**

An engaging, high-quality science education, provides children with the foundations for understanding the world around them. Opportunities to study well-known scientists guides children in understanding the impact science has on changing our world. Children learn the possibilities for careers in science as a result of links with industry and connection with national agencies such as the STEM association and Ogden Trust.

Standards in science are monitored in a variety of ways to ensure maximum impact. These include book looks, professional dialogue, pupil voice questionnaires and interviews, staff questionnaires, lesson observations and learning walks. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners.