



All Saints' Catholic Primary School

Science

Curriculum Progression

## OUR CURRICULUM INTENT

- ❖ We have designed an ambitious curriculum for all pupils that develops their knowledge, creativity, curiosity and skills-base. Utilising our location within North-West Durham, we deliver a curriculum that draws upon our rich history, cultural heritage and local resources.
- ❖ Our school life holds Gospel Values at its centre – this is evident within our curriculum delivery; we prioritise themes of fairness, integrity, compassion and responsibility and have high standards of all pupils in all subjects.
- ❖ Our curriculum is taught sequentially and systematically across each year group and assessments are used to inform current knowledge and future planning. Depending upon the individual needs of different cohorts or groups of pupils, the curriculum is adapted to ensure all children can access it and progress within it. Regardless of year group or subject, individual learning as well as collaborative learning is supported as part of a positive, hard working ethos.
- ❖ Prior learning is built upon with links made between old and new concepts. Meaningful learning is embedded throughout educational visits and creative activity and opportunity.
- ❖ When the children leave our school, we expect them to be confident learners who have a sound understanding of their place within our local community, our wider location and our global family. As a school, we are proud that our curriculum follows national policy but is also flexible and responsive to current issues.
- ❖ Our intention is for our pupils to be inspired to pursue knowledge and celebrate diversity in all areas.

**For each individual subject document which shows progression throughout and across each year group, please access the One Drive or see each subject coordinator.**

## SCIENCE RATIONALE

- ❖ At All Saints', we want our children to be ambitious and curious pupils who apply their skills in a scientific way. Our science curriculum aims to inspire all children and gives them the confidence to ask and answer challenging questions and carry out interesting, fair investigations.
- ❖ Our science curriculum holds Gospel Values at its centre – this is evident within our curriculum delivery; we prioritise themes of dignity, responsibility, fairness, stewardship and have high standards for all pupils in all subjects.
- ❖ Our school garden provides the perfect opportunity for all children across the school to apply what they have learned in topics such as Plants, Seasonal Changes, Animals including humans and Living Things and their Habitats. Educational visits to our local botanical garden help to strengthen our children's prior learning and provides them with first-hand experience and the opportunity to ask questions and learn from our local experts. Visits to our local Centre for Life planetarium are fantastic opportunities for our Key Stage Two pupils to widen their knowledge of space and provides an amazing experience particularly during our annual space week.
- ❖ We pride ourselves on our strong links with the science department at our local secondary school and intend for children across the school to continue participating in STEM projects linked to our primary curriculum. Additionally, as part of the OGDEN Partnership we share our knowledge and practice with other schools in the region in order to provide excellent teaching and learning.
- ❖ When the children leave our school, we expect them to be inspired to further their scientific knowledge and to be provided with the skills they need for their Key Stage Three journey and beyond. Children are taught to use disciplinary literacy in science, understanding that presenting information in a variety of ways is appropriate to this subject.





All Saints' Catholic Primary School

# Science Intent

# Science Year One

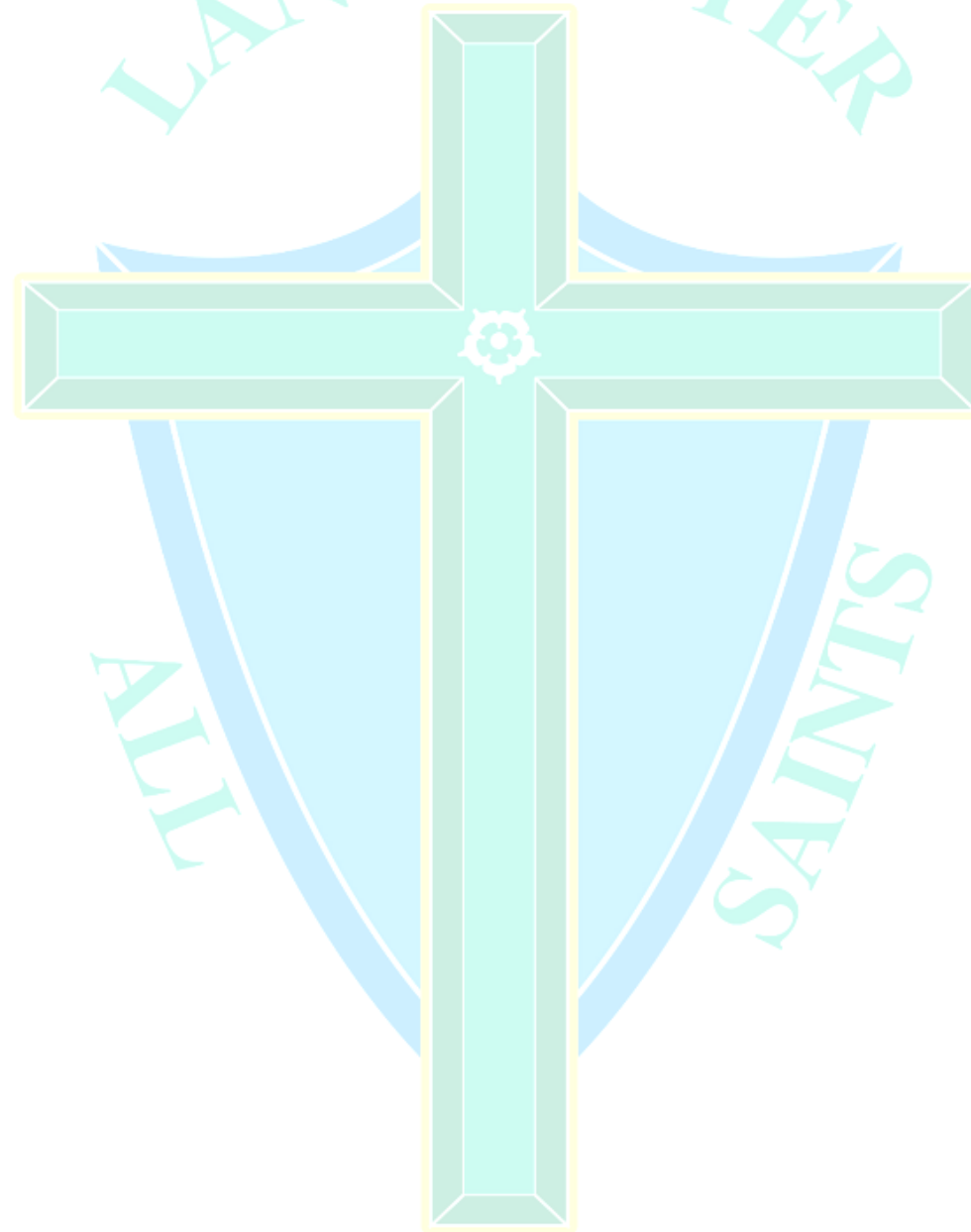
Autumn Term	Spring Term	Summer Term
Seasons (Autumn and Winter)	Everyday Materials	Animal Diets
My Body and My Senses	Animal Groups	Plants – Park Explorers
<b>Working Scientifically</b> - asking simple questions and recognising that they can be answered in different ways; observing closely, using simple equipment; performing simple tests; identifying and classifying; using their observations and ideas to suggest answers to questions; gathering and recording data to help in answering questions		
<b>Seasonal Changes (Aut – Win)</b> <ul style="list-style-type: none"> <li>To observe changes between autumn and winter</li> <li>To name the four seasons in order.</li> <li>To observe and talk about the changes in the weather</li> <li>To observe that they length of a day varies</li> </ul> <b>My Body and My Senses</b> <ul style="list-style-type: none"> <li>Pupils should identify, name, draw, and label the basic parts of the human body and say which part is associated with each sense.</li> </ul>	<b>Everyday Materials</b> <ul style="list-style-type: none"> <li>distinguish between an object and the material from which it is made</li> <li>identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock</li> <li>describe the simple physical properties of a variety of everyday materials</li> <li>compare and group together a variety of everyday materials on the basis of their simple physical properties.</li> </ul> <b>Animal Groups</b> <ul style="list-style-type: none"> <li>Identify and name a variety of common animals, including fish, amphibians, reptiles, birds, and mammals</li> <li>Describe and compare the structure of a variety of common animals</li> </ul>	<b>Animal Diets</b> <ul style="list-style-type: none"> <li>identify and name a variety of common animals that are carnivores, herbivores and omnivores</li> </ul> <b>Plants</b> <ul style="list-style-type: none"> <li>identify and name a variety of common wild and garden plants, including deciduous and evergreen trees</li> <li>identify and describe the basic structure of a variety of common flowering plants, including trees.</li> </ul>
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
Summer, winter, autumn, spring, day, daytime, wind, rain, snow, hail, sleet, fog, sun, hot, warm, cold  Head, arm, leg, hands, feet, ears, eyes, nose, mouth, teeth, sight, hearing, taste, touch, smell, rough, bumpy, smooth, soft, sweet, sour, salty	Object, material, wood, plastic, metal, glass, rock, fabric, hard, soft, rough, smooth, shiny, dull, waterproof, absorbent, bendy, stiff  mammals, birds, reptiles, amphibians, fish, carnivore, herbivore, omnivore, fur, feathers, scales, gills, lungs, eggs, birth, young, adult, habitat, water, land, wings, fins, beak, claws	Omnivore, carnivore, herbivore, meat, plants, badger, human, lion, shark, horse, mice  Air, blossom, branch, bud, deciduous, evergreen, feel, flower, fruit, garden, grow, leaf, leaves, light, look, petals, plant, root, seed, smell, soil, sprout, stem, tree, trunk, water, wild
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
EYFS	EYFS	EYFS
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
Living things (Y2)	Materials (Y2)	Animals inc humans (Y2)

Plants (Y2)

Animals inc humans (Y2)  
Living things (Y2)

Plants (Y2)

Animals inc humans (Y2)



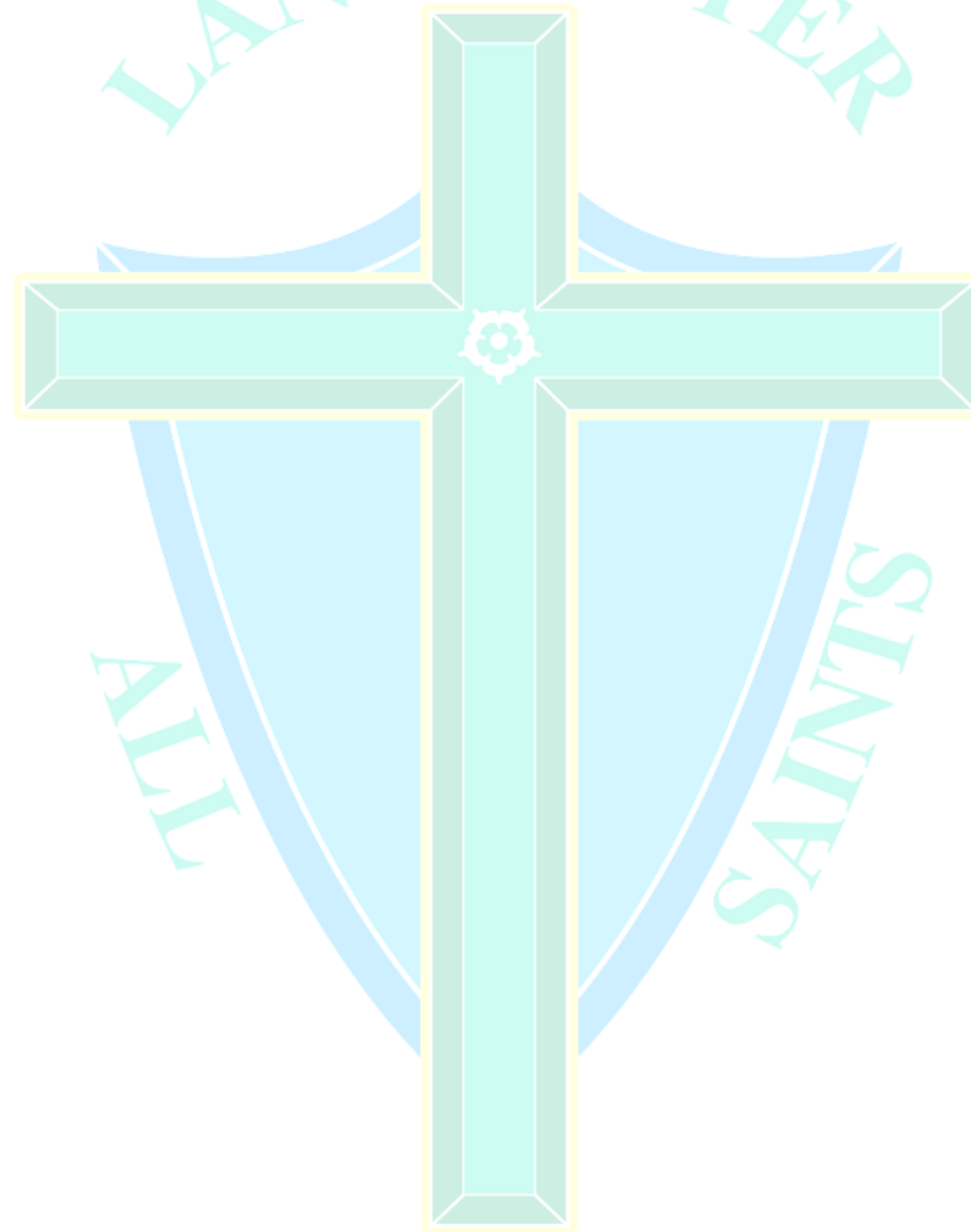
# Science Year Two

Autumn Term	Spring Term	Summer Term
How can materials be grouped and organised?  How can materials be changed?	How can we tell if something is alive or not?  Why do plants and animals live in certain places?	Do plants need the same conditions to grow?  What do animals, including humans, need to stay alive and healthy?
<b>Working Scientifically</b> - asking simple questions and recognising that they can be answered in different ways; observing closely, using simple equipment; performing simple tests; identifying and classifying; using their observations and ideas to suggest answers to questions; gathering and recording data to help in answering questions		
<b>Materials</b>	<b>Living Things and their Habitats</b>	<b>Plants</b>
<ul style="list-style-type: none"> <li>identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses</li> <li>find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching</li> <li>find out about people who have developed useful new materials, for example John Dunlop, Charles Macintosh or John McAdam</li> </ul>	<ul style="list-style-type: none"> <li>explore and compare the differences between things that are living, dead, and things that have never been alive</li> <li>identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other</li> <li>identify and name a variety of plants and animals in their habitats, including microhabitats</li> <li>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</li> </ul>	<ul style="list-style-type: none"> <li>observe and describe how seeds and bulbs grow into mature plants</li> <li>find out and describe how plants need water, light and a suitable temperature to grow and stay healthy</li> </ul> <p><b>Animals, Including Humans</b></p> <ul style="list-style-type: none"> <li>notice that animals, including humans, have offspring which grow into adults</li> <li>find out about and describe the basic needs of animals, including humans, for survival (water, food and air)</li> <li>describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene</li> </ul>
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
Material, natural, man-made, hard, soft, rigid, flexible, transparent, opaque, similar, different, same, recycle, recyclable, squashing, bending, twisting, stretching, rubber tyres, predict, method, results, conclusion, fair test	Living, non-living, alive, dead, not alive, movement, respiration, sensitivity, growth, reproduction, excretion, nutrition.  Habitat, desert, ocean, arctic, rainforest, microhabitat, local habitat, food chain	Seeds, bulbs, plants, germinate, dormant  Nutrition, shelter, growth, young, life cycle, egg, tadpole, froglet, frog, lay eggs, have live babies, exercise, diet, hygiene
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
Materials (Y1)	Animal Groups (Y1) Animal Diets (Y1) Plants (Y1)	Animal Groups (Y1) Animal Diets (Y1) Plants (Y1)
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>

States of Matter (Y4)

Animals inc humans (Y3)  
Plants (Y3)

Plants (Y3)  
Animals inc humans (Y3)





# Science Year Three

Autumn Term	Spring Term	Summer Term
What is under our feet?	Animals Including humans	Forces and magnets
What is light and what is shadow?	What do plants need and how do they grow	The bee project

**Working Scientifically** – asking relevant questions and using different types of scientific enquiries to answer them; setting up simple practical enquiries, comparative and fair tests; making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; 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; reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; identifying differences, similarities or changes related to simple scientific ideas and processes; using straightforward scientific evidence to answer questions or to support their findings.

<p><b>Rocks</b></p> <ul style="list-style-type: none"> <li>compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</li> <li>describe in simple terms how fossils are formed when things that have lived are trapped within rock</li> <li>recognise that soils are made from rocks and organic matter</li> </ul> <p><b>Light and Shadows</b></p> <ul style="list-style-type: none"> <li>recognise that they need light in order to see things and that dark is the absence of light</li> <li>notice that light is reflected from surfaces</li> <li>recognise that light from the sun can be dangerous and that there are ways to protect their eyes</li> <li>recognise that shadows are formed when the light from a light source is blocked by an opaque object</li> <li>find patterns in the way that the size of shadows change</li> </ul>	<p><b>Animals, Including Humans (Nutrition)</b></p> <ul style="list-style-type: none"> <li>To explain the importance of a nutritionally balanced diet</li> <li>To explain how nutrients, water and oxygen are transported around the body</li> <li>To identify that animals, including humans cannot produce their own food and that they get nutrients from what they eat</li> <li>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</li> <li>identify that humans and some other animals have skeletons and muscles for support, protection and movement</li> </ul> <p><b>Plants</b></p> <ul style="list-style-type: none"> <li>identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers</li> <li>explore the requirements of plants for life and growth (air, light, water, nutrients from soil, and room to grow) and how they vary from plant to plant</li> <li>investigate the way in which water is transported within plants</li> <li>explore the part that flowers play in the life</li> </ul>	<p><b>Forces and Magnets</b></p> <ul style="list-style-type: none"> <li>compare how things move on different surfaces</li> <li>notice that some forces need contact between 2 objects, but magnetic forces can act at a distance</li> <li>observe how magnets attract or repel each other and attract some materials and not others</li> <li>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</li> <li>describe magnets as having 2 poles</li> <li>predict whether 2 magnets will attract or repel each other, depending on which poles are facing</li> </ul> <p><b>The Bee Project</b></p> <ul style="list-style-type: none"> <li>explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal</li> <li>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</li> <li>identify that humans and some other animals have skeletons and muscles for support, protection and</li> </ul>
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	cycle of flowering plants, including pollination, seed formation and seed dispersal	movement
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
<p>crust, meteorites, minerals, granite, mineralogist, porosity, properties, talc, crystal, lava, magma, obsidian, pumice, boulder, continents, fossils, meteorologist, palaeontologist, pebble, sediment, metamorphic, pressure, temperature, bedrock, humus, organic matter, silt, topsoil, waterlogged</p> <p>light source, reflection, shadow, transparent, translucent, opaque, dim, bright, shiny, dull, mirror, pupil, iris, telescope, optician, lens, scatter</p>	<p>carbohydrates, fats, protein, vitamins, minerals, fibre, obesity, starvation, collagen, exoskeleton, biceps, contract, muscle, tendon, triceps</p> <p>absorb, anchor, carbon dioxide, flowers, fertiliser, leaves, minerals, nutrients, stem, trunk, roots, carpel, filament, anther, stamen, stigma, style, pollen egg, ovary, fruit, seed, germination, pollination, fertilisation</p>	<p>contact, contraction, tendon, friction, lubricant, attract, repel, gravity, magnetic, pole, compass</p> <p>Abdomen, antennae, mandible, proboscis, stinger, thorax, venom, bee bread, cells, colonies, drone, hexagonal, larva, pupa, royal jelly, social bees, honey stomach, propolis, swarm, waggle dance, honeydew, solitary, sugarbag, beekeepers, insecticide</p>
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
<p>Materials (Y2)</p> <p>Materials (Y1)</p> <p>Materials (Y2)</p>	<p>Animals inc, humans (Y2)</p> <p>Plants (Y2)</p>	<p>Materials (Y2)</p> <p>Rocks (Y3)</p> <p>Animals inc. humans (Y2)</p> <p>Plants (Y3)</p>
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
<p>Forces (Y3)</p> <p>States of matter (Y4)</p> <p>Living things (Y6)</p> <p>Sound (Y4)</p> <p>Electricity (Y4)</p> <p>Light (Y6)</p> <p>Electricity (Y6)</p>	<p>Animals inc. humans (Y6)</p> <p>Light (Y3)</p> <p>Evolution and inheritance (Y6)</p>	<p>Materials (Y5)</p> <p>Animals inc. humans (Y4,5,6)</p> <p>Living things and their habitats (Y4,5,6)</p>

# Science Year Four

Autumn Term	Spring Term	Summer Term
States of matter	Sound	Electricity
Animals including humans	Living things and their habitats	History of Science
<p><b>Working Scientifically</b> – asking relevant questions and using different types of scientific enquiries to answer them; setting up simple practical enquiries, comparative and fair tests; making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers; 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; reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions; using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions; identifying differences, similarities or changes related to simple scientific ideas and processes; using straightforward scientific evidence to answer questions or to support their findings.</p>		
<p><b>States of Matter</b></p> <ul style="list-style-type: none"> <li>compare and group materials together, according to whether they are solids, liquids or gases</li> <li>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)</li> <li>identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature</li> </ul> <p><b>Animals, Including Humans (Teeth and the Digestive System)</b></p> <ul style="list-style-type: none"> <li>describe the simple functions of the basic parts of the digestive system in humans</li> <li>identify the different types of teeth in humans and their simple functions</li> <li>construct and interpret a variety of food chains, identifying producers, predators and prey</li> </ul>	<p><b>Sound</b></p> <ul style="list-style-type: none"> <li>identify how sounds are made, associating some of them with something vibrating</li> <li>recognise that vibrations from sounds travel through a medium to the ear</li> <li>find patterns between the pitch of a sound and features of the object that produced it</li> <li>find patterns between the volume of a sound and the strength of the vibrations that produced it</li> <li>recognise that sounds get fainter as the distance from the sound source increases</li> </ul> <p><b>Living Things and Their Habitats (Classification of animals)</b></p> <ul style="list-style-type: none"> <li>recognise that living things can be grouped in a variety of ways</li> <li>explore and use classification keys to help group, identify and name a variety of living things in their local and wider environment</li> <li>recognise that environments can change and that this can sometimes pose dangers to living things</li> </ul>	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>identify common appliances that run on electricity</li> <li>construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers</li> <li>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</li> <li>recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit</li> <li>recognise some common conductors and insulators, and associate metals with being good conductors</li> </ul> <p><b>History of Science</b></p> <ul style="list-style-type: none"> <li>Explain how science can help humans survive</li> <li>Explain how Ancient Egyptians responded to challenges using science.</li> </ul>

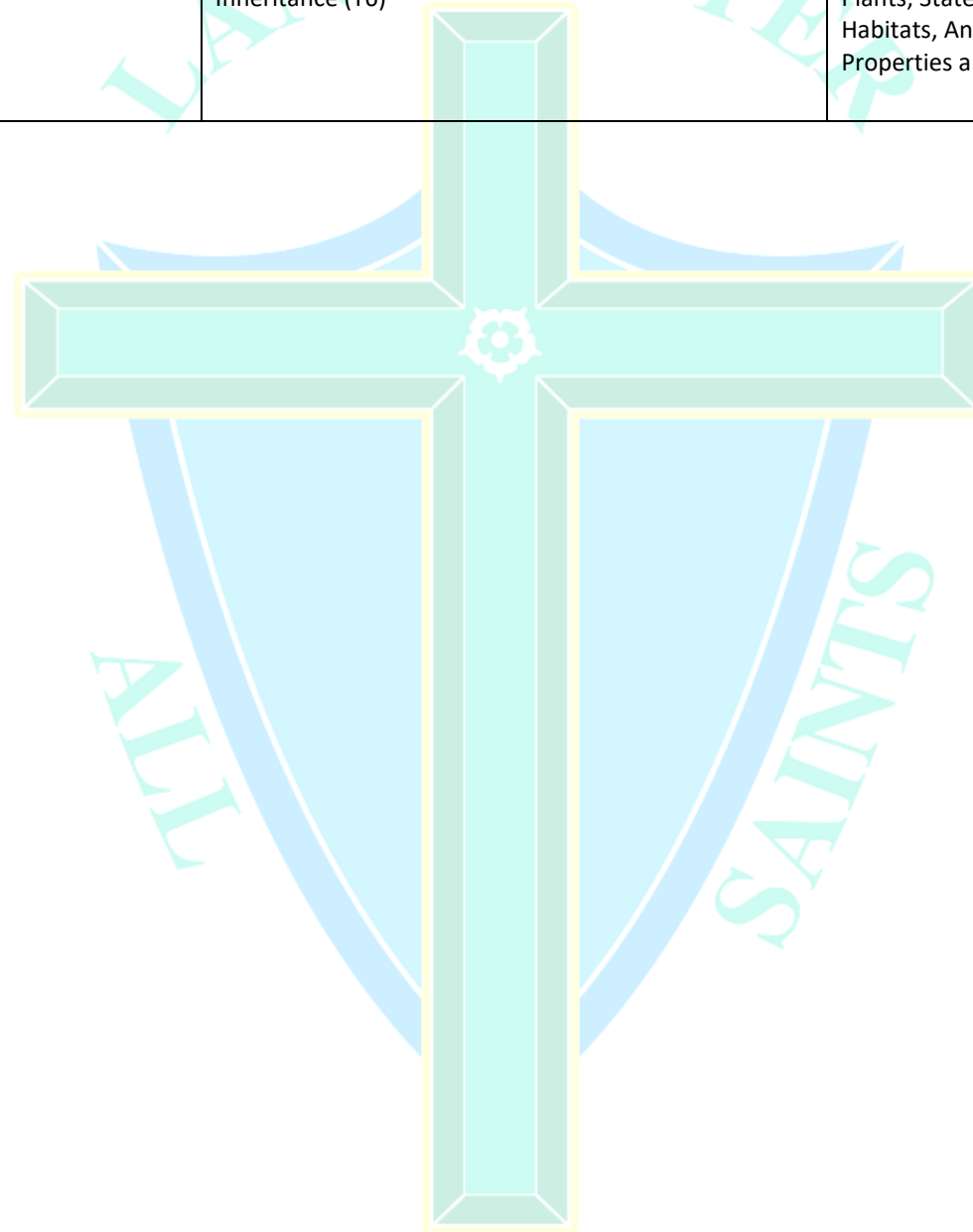
		<ul style="list-style-type: none"> <li>Recall some important modern scientists</li> <li>Explain some issues scientists faced trying to introduce new knowledge</li> <li>Suggest how and why modern scientists changed the way people think about the world</li> </ul>
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
<p>solid, liquid, gas, melting, freezing, evaporation, water vapour, cloud, condensation, fog, precipitation.</p> <p>carnivore, consumer, herbivore, omnivore, predator, prey, producer, food chain, microplastics, canines, enamel, incisors, molars, premolars, salivary glands, taste buds, umami</p>	<p>Brass, string, woodwind, vibration, vocal chord, echoes, medium, particle, wave, auditory nerve, audiologist, cochlea, ear canal, ear drum, hearing impairment, pinna, amplifier, decibel, audible range, echolocation, hertz, pitch, sonar, ultrasound</p> <p>characteristics, invertebrates, vertebrates, cold-blooded, warm-blooded, gills, entomologist, antennae, abdomen, thorax, colonies, pooter, sweep net, deforestation, endangered, extinct, slash-and-burn.</p>	<p>charge, electrostatic forces, static, flow, appliances, circuit, current, fossil fuels, nuclear, renewable, components, voltage, generator, hazards, conductor, insulator, electric shock.</p> <p>Machines, prehistoric, technology, bronze, civilisations, mummification, papyrus, horizon, pharaohs, philosophy, aqueducts, hygiene, malaria, mosquitoes, algebra, Baghdad, Kaaba, Persia, Timbuktu, gravity, Renaissance.</p>
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
<p>Materials (Y2)</p> <p>Rocks (Y3)</p> <p>Food chains (Y2)</p>	<p>Materials (Y2)</p> <p>Light and forces (Y3)</p> <p>States of Matter (Y4)</p> <p>Animals including humans, living things and their habitats, changes in seasons (KS1)</p> <p>Plants (Y3)</p>	<p>Materials (y2)</p> <p>Animals including humans (KS2)</p> <p>The Bee project (Y3)</p> <p>KS1: Plants, animals inc. humans, materials, changes in season (KS1)</p>
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
<p>Sound (Y4)</p> <p>Properties and changes of materials (Y5)</p> <p>Plants, Animals including Humans (Y3)</p> <p>Living things and their habitats (Y4,5,6)</p> <p>Animals including humans (Y5,6)</p>	<p>Electricity (Y4)</p> <p>Light and Electricity (Y6)</p> <p>Living things and their habitats (Y5)</p> <p>Evolution and Inheritance (Y6)</p>	<p>The History of Science (Y4)</p> <p>Materials (Y5)</p> <p>Electricity (Y6)</p> <p>Properties and changes of materials (Y5)</p> <p>Earth and space (Y5)</p> <p>Forces (Y5)</p> <p>Evolution and inheritance (Y6)</p> <p>Light (Y6)</p>

# Science Year Five

Autumn Term	Spring Term	Summer Term
Properties and changes of materials	Forces	Earth and space
Animals including humans	Living things and their habitats	The scientific method
<p><b>Working Scientifically</b> - planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; using test results to make predictions to set up further comparative and fair tests; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; identifying scientific evidence that has been used to support or refute ideas or arguments</p>		
<p><b>Properties and Changes of Materials: Reversible and Irreversible</b></p> <ul style="list-style-type: none"> <li>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</li> <li>know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution</li> <li>use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating</li> <li>give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic</li> <li>demonstrate that dissolving, mixing and changes of state are reversible changes</li> <li>explain that some changes result in the formation of new materials, and that this kind of change is not usually reversible.</li> </ul> <p><b>Animals, Including Humans (Growing Older)</b></p> <ul style="list-style-type: none"> <li>describe the changes as humans develop to old age</li> </ul>	<p><b>Forces</b></p> <ul style="list-style-type: none"> <li>explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object</li> <li>identify the effects of air resistance, water resistance and friction, that act between moving surfaces</li> <li>recognise that some mechanisms including levers, pulleys and gears allow a smaller force to have a greater effect</li> </ul> <p><b>Living Things and Their Habitats</b></p> <ul style="list-style-type: none"> <li>describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird</li> <li>describe the life process of reproduction in some plants and animals</li> </ul>	<p><b>Earth and Space</b></p> <ul style="list-style-type: none"> <li>describe the movement of the Earth and other planets relative to the sun in the solar system</li> <li>describe the movement of the moon relative to the Earth</li> <li>describe the sun, Earth and moon as approximately spherical bodies</li> <li>use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky</li> <li>that the sun is a star at the centre of our solar system and that it has 8 planets</li> <li>understanding how the geocentric model of the solar system gave way to the heliocentric model by considering the work of scientists such as Ptolemy, Alhazen and Copernicus</li> </ul> <p><b>The Scientific Method</b></p> <ul style="list-style-type: none"> <li>planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary</li> <li>taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate</li> <li>recording data and results of increasing</li> </ul>

		<p>complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs</p> <ul style="list-style-type: none"> <li>• using test results to make predictions to set up further comparative and fair tests</li> <li>• reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations</li> <li>• identifying scientific evidence that has been used to support or refute ideas or arguments</li> </ul>
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
<p>Ceramics, durability, silica, silicon, synthetic, thermal conductors, thermal insulators, microplastics, sieve, acetone, alloy, dissolved, soluble, solution, solvent, alkali, bicarbonate, irreversible, neutralisation, phlogiston</p> <p>Milestones, adolescence, adolescent, puberty, scrotum, testes, foetus, mature, wet dreams, mature, menstrual cycle, mood swing, peer pressure, period, womb, amniotic fluid, ultrasound, umbilical chord, gestation period, Alzheimer's disease, dementia</p>	<p>Catapults, grit, newton meter, newtons, trebuchets, synovial fluid, aerodynamics, drag, mechanical engineer, streamlined, marine engineer, mass, clutch, effort, fulcrum, gear, lever, load</p> <p>Mammary glands, marsupials, offspring, camouflaged, clusters, embryo, frog spawn, metamorphosis, tadpole, cocoon, entomologists, larva/ larvae (plural), moulting, nymph, parasites, pupa, scabies, down, egg tooth, incubated, asexual, fertilisation, ovaries, ovules, testes, variation, bulb, cutting, clone, plantlet, regenerate, tuber</p>	<p>Asteroid, celestial bodies, comet, elliptical, galaxy, orbit, sphere, universe, axis, rotation, crescent, phase, satellite, Geocentric, Heliocentric</p> <p>Hypothesis, variables, Bunsen burner, data, measuring cylinder, pipette, accurate, average, conclusion, precision, precise, repeatable</p>
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
<p>Materials (Y2) Rocks (Y3) Forces (Y3) States of matter (Y4)</p> <p>Animals inc humans (Y 2,3, 4)</p>	<p>Forces and magnets, Animals including humans (Y3) Properties and changes of materials (Y5)</p> <p>Plants (Y3) Living Things and Their Habitats (Y4) Animals Including Humans(Y4) Year 5: Animals Including Humans (Y5)</p>	<p>Light, Forces and magnets (Y3) States of matter, Sound (Y4) Forces (Y5)</p>
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>

<p>KS3</p> <p>Evolution and inheritance (Y6)</p>	<p>Earth and space (Y5)</p> <p>Living Things and Their Habitats, Evolution and Inheritance (Y6)</p>	<p>Light (Y6)</p> <p>Working Scientifically across KS2: Plants, States of Matter, Living Things and Their Habitats, Animals Including Humans, Earth and space, Properties and changes of materials.</p>
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# Science Year Six

Autumn Term	Spring Term	Summer Term
Animals including humans	Electrical circuits	Living things and their habitats
The science of light	Evolution and inheritance	Preparing for Secondary Science
<p><b>Working Scientifically</b> - planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary; taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate; recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs; using test results to make predictions to set up further comparative and fair tests; reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations; identifying scientific evidence that has been used to support or refute ideas or arguments</p>		
<p><b>Animals, Including Humans</b></p> <ul style="list-style-type: none"> <li>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</li> <li>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</li> <li>describe the ways in which nutrients and water are transported within animals, including humans</li> </ul> <p><b>Light</b></p> <ul style="list-style-type: none"> <li>recognise that light appears to travel in straight lines</li> <li>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</li> <li>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</li> <li>use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them</li> </ul>	<p><b>Electricity</b></p> <ul style="list-style-type: none"> <li>associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit</li> <li>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</li> <li>use recognised symbols when representing a simple circuit in a diagram</li> </ul> <p><b>Evolution and Inheritance (Adaptation)</b></p> <ul style="list-style-type: none"> <li>recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago</li> <li>recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents</li> <li>identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</li> </ul>	<p><b>Living Things and Their Habitats (Classification and Food Webs)</b></p> <ul style="list-style-type: none"> <li>describe how living things are classified into broad groups according to common observable characteristics and based on similarities and differences, including micro-organisms, plants and animals</li> <li>give reasons for classifying plants and animals based on specific characteristics</li> </ul> <p><b>Preparing for Secondary Science</b></p> <ul style="list-style-type: none"> <li>Develop scientific knowledge and conceptual understanding</li> <li>Understand the nature, processes, and methods of science</li> <li>Be equipped with the scientific knowledge required to understand the uses and implications of science.</li> </ul>
<b>Vocabulary</b>	<b>Vocabulary</b>	<b>Vocabulary</b>
Cardiac muscle, circulatory system, valves, arteries, blood pressure, capillaries, veins, clot, plasma, platelet, red blood cells, white blood cells, cholesterol, stroke	voltage, brightness, volume, switch, bulb, buzzer, motor, circuit, component, insulator, risk assessment, surge protector	classification, taxonomy, species, adaptation, microorganism, habitat, ecosystem, biodiversity, vertebrate, invertebrate, evolution, food chain,



Opaque, translucent, transparent, shadow, pupil, iris, lens, reflection, refraction, convex, concave	Genes, offspring, species, variation, adaptation, natural selection, reproduction, camouflage, amber, fossils, evolution, Mary Anning, Charles Darwin, Alfred Wallace	organism, environment, extinction eyepiece, focus knobs, indicator, chromatography, pigments, photosynthesis, chlorophyll, sound waves, pitch, energy transformation
<b>Prior Knowledge</b>	<b>Prior Knowledge</b>	<b>Prior Knowledge</b>
Animals inc. humans (Y3, 4, 5)  Light (Y3) Plants (Y3) Sound (Y2)	Animals inc humans (Y3, 4, 5)  Basic characteristics and needs of living things (Y2) Life cycles of various organisms (Y4) Introduction to adaptation and survival (Y4) Reproduction (Y5) Classification of organisms (Y5) Simple inheritance patterns (Y5)	Classification of living things (Y4) Food chains and interdependence (Y3) Life cycles and reproduction (Y5) Basic characteristics of plants and animals (Y2) Seasonal changes and impact on habitats (KS1)  Basic properties of materials (Y2) Introduction to forces (Y3) States of matter and changes (Y4) Basic principles of light and sound (Y5) Electricity and circuits (Y6)
<b>Future Knowledge</b>	<b>Future Knowledge</b>	<b>Future Knowledge</b>
KS3	KS3	KS3