ST CATHERINE'S CE PRIMARY SCHOOL
SCIENCE CURRICULUM PROGRESSION



Science at St Catherine's inspires children to live out their Christian values, especially the call to love like Jesus, by engaging both their minds (head) and their hearts. Through exploring the natural world, children develop a deep appreciation for the beauty, order, and complexity of God's creation, sparking awe, curiosity, and a profound sense of connection to life.

As they investigate topics such as living things, ecosystems, and human impact on the environment, children grow in their understanding of their God-given responsibility to care for the Earth. Science nurtures not only knowledge but also wisdom; the ability to apply learning thoughtfully, compassionately, and purposefully.

By embedding this wisdom in their daily choices, pupils learn to make decisions grounded in love, responsibility, and care for others and the wider community. Science thus becomes a meaningful pathway for children to connect their learning with their Christian faith, empowering them to love like Jesus with both head and heart, and to serve with kindness and respect for all, regardless of differences.

St Catherine's CofE Science Progression Map

Early Years	Characteristics of Effective Learning	Early Learning Goals
Enquiry Skills	Show curiosity about objects, events and people Questions why things happen Engage in open-ended activity Take a risk, engage in new experiences and learn by trial and error Find ways to solve problems / find new ways to do things / test their ideas Develop ideas of grouping, sequences, cause and effect Comments and asks questions about aspects of their familiar world such as the place where they live or the natural world Use senses to explore the world around them Make links and notice patterns in their experiences Create simple representations of events, people and objects Build up vocabulary that reflects the breadth of their experience	Explore the natural world around them, making observations and drawing pictures of animals and plants. • Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class. • Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.
The Natural World	Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.	

		Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Key Vocabulary		***Plants:*** wild plants/ garden plants deciduous, evergreen ***Animals including Humans:*** mammals herbivore, carnivore, omnivore Five senses (sight, touch,smell, taste, hearing) ***Everyday Materials:*** material, everyday materials (wood, plastic, glass, metal, water, rock), property/ies, waterproof/non-waterproof ***Seasonal Changes:*** four seasons (spring, summer, autumn, winter), weather **Working Scientifically** Questions, answers, equipment, measure, record, results, sort, group,	***Living Things and their Habitats:*** living/non-living, habitat, microhabitat, mini-beast, food chain ***Plants:*** mature plants, seed, bulb, harvest, nurture ***Animals including Humans:*** offspring, reproduction, environment, exercise, diet, hygiene, ***Uses of Everyday Materials:*** natural, man-made, suitability, squash, bend, twist, stretch **Working Scientifically** Questions, answers, equipment, gather, measure, record, results, sort, group, test, observe, compare, describe, similar/ities, different/ces	***Plants:*** flowering plants, roots, stem, trunk, leaves, flowers, nutrients, pollination, seed formation, seed dispersal ***Animals including Humans:*** nutrition, skeleton, muscle, vertebrates, invertebrates, exoskeleton ***Rocks:*** rock, fossil, organic matter, colour, texture, erosion, permeability, prehistoric, paleontologist, ***Light:*** light, dark, absence, shadow, light source, transparent, translucent opaque, ***Forces and Magnets:*** forces, surface, push, pull, magnet/ic, attract, repel, (magnetic) poles **Working Scientifically** Questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, similar/ities, different/ces keys, bar charts, table, results, conclusions, predictions, support,	***Living Things and their Habitats:*** Classification keys, environment, fish, amphibians, reptiles, birds, mammals, vertebrates, invertebrates, names of them, human impact, positive, negative (impact). ***Animals including Humans:*** food chain, producer, consumer, predator, prey, tooth decay, digestive system ***States of Matter:*** solid, liquid, gas, change of state, evaporation, condensation, temperature, water cycle,freezing/melting point ***Sound:*** Sound, sound source, noise, vibration, travel, solid, liquid, gas, pitch, tune, high, low, volume, loud, quiet, fainter, muffle, strength of vibrations, insulation, instrument, percussion, strings, bass, woodwind, tuned instrument ***Electricity:*** appliance, electrical circuit, mains/battery, cell, wire, bulb, switch, buzzer,conductors, insulators **Working Scientifically** Previous Vocabulary plus:	***Living Things and their Habitats:*** Life cycle, reproduction, sexual, asexual, germination, pollination, seed formation, seed dispersal, pollen, stamen, stigma, plantlets, runners, mammal, amphibian, insect, bird, fish, reptile, eggs, live young ***Animals including Humans:*** gestation, develop, childhood, puberty, adulthood, old age ***Properties and Changes of Materials:*** dissolve/ing, solution, substance, separation, filter, sieve, reversible, irreversible, solubility ***Earth and Space:*** solar system, spherical, rotation, theorist, geocentric, heliocentric ***Forces:*** gravity, unsupported, friction, air resistance, water resistance, mechanism, lever, pulley, gear Questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, similar/ities,	***Living Things and their Habitats:*** Organism, micro-organism, fungus, mushrooms, classification keys, environment, fish, amphibians, reptiles, birds, ,mammals, vertebrates, invertebrates, name some of these: arachnid, mollusc, insect, crustacean ***Animals including Humans:*** Circulatory system, heart, blood, blood vessels, pumps, oxygen, carbon dioxide, lungs, nutrients, water, diet, exercise, drugs, lifestyle ***Inheritance and Evolution:*** evolution, suited/suitable, adapted, adaptation, offspring, reproduction, variation, inherit, inheritance, fossils ***Light:*** Light, light source, darkness, reflect, reflective, shadow, block, absorb, direction, transparent, opaque, translucent ***Electricity:*** Electricity, appliance, device, electrical circuit, complete circuit, circuit diagram, circuit symbol, components, cell, battery, positive, negative, terminal,

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				thermometers	increase, decrease, identify, classify, order, notice patterns, relationships, appearance, present results	different/ces, beaker, pipette, syringe **Working Scientifically** Previous Vocabulary plus: notice patterns, relationships, accuracy, precision, degree of trust, classification keys, line graphs	connection, short circuit, wire, crocodile clip, bulb, bright/dim, switch, buzzer, volume, motor, conductor, insulator, voltage, current, resistance Questions, answers, equipment, gather, measure, record, results, sort, group, test, explore, observe, compare, describe, similar/ities, different/ces, beaker, pipette, syringe **Working Scientifically** Previous Vocabulary plus: notice patterns, relationships, independent variable, dependent variable, controlled variable, accuracy, precision, degree of trust, classification keys, scatter graphs, line graphs
Knowledge		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. Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals Identify and name a variety of common animals that are carnivores, herbivores and omnivores Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets) Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense Distinguish between an object and the material from which it is made. Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock. Describe the simple physical properties of a variety of everyday materials. Compare and group together a variety of everyday materials on the basis of their simple physical properties. Observe changes across the four seasons - observe and describe	Explore and compare the differences between things that are living, dead, and things that have never been alive. 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. Identify and name a variety of plants and animals in their habitats, including microhabitats.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 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 Understand that animals, including humans, have offspring which grow into adults Describe the basic needs of animals, including humans, for survival (water, food and air) Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.	Identify and describe the functions of different parts of flowering plants: roots, stem/trunk, leaves and flowers. 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. Investigate the way in which water is transported within plants Explore the part that flowers play in the life cycle of flowering plants, including pollination, seed formation and seed dispersal. 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 identify that humans and some other animals have skeletons and muscles for support, protection and movement Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties. Describe in simple terms how fossils are formed when things that have lived are trapped within rock. Recognise that soils are made from rocks and organic matter. Recognise that they need light in order to see things and that dark	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. Recognise that environments can change and that this can sometimes pose dangers to living things. Describe the simple functions of the basic parts of the digestive system in humans. Identify the different types of teeth in humans and their simple functions. Construct and interpret a variety of food chains, identifying producers, predators and prey. Compare and group materials together, according to whether they are solids, liquids or gases. 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). Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature. Identify how sounds are made, associating some of them with something vibrating. Recognise that vibrations from sounds travel	Describe the differences in the life cycles of a mammal, an amphibian, an insect and a bird. Describe the life process of reproduction in some plants and animals. Describe the changes as humans develop to old age. 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. Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution 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 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.	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. Give reasons for classifying plants and animals based on specific characteristics. 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. Describe the ways in which nutrients and water are transported within animals, including humans recognise that living things have changed over time and that fossils provide information about living things that inhabited the Earth millions of years ago - recognise that living things produce offspring of the same kind, but normally offspring vary and are not identical to their parents - identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution.

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		weather associated with the seasons and how day length varies.	Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses to find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.	is the absence of light. Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by a solid object. Find patterns in the way that the size of shadows change - Compare how things move on different surfaces - notice that some forces need contact between two objects, but magnetic forces can act at a distance - observe how magnets attract or repel each other and attract some materials and not others - 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 - predict whether two magnets will attract or repel each other, depending on which poles are facing	through a medium to the ear. Find patterns between the pitch of a sound and features of the object that produced it. Find patterns between the volume of a sound and the strength of the vibrations that produced it. Recognise that sounds get fainter as the distance from the sound source increases. Identify common appliances that run on electricity. Construct a simple series electrical circuit, identifying and naming its basic parts, including cells, wires, bulbs, switches and buzzers. 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. Recognise that a switch opens and closes a circuit and associate this with whether or not a lamp lights in a simple series circuit. Recognise some common conductors and insulators, and associate metals with being good conductors.	Describe the movement of the Earth, and other planets, relative to the Sun in the solar system - describe the movement of the Moon relative to the Earth - describe the Sun, Earth and Moon as approximately spherical bodies - use the idea of the Earth's rotation to explain day and night and the apparent movement of the sun across the sky. .- Explain that unsupported objects fall towards the Earth because of the force of gravity acting between the Earth and the falling object - identify the effects of air resistance, water resistance and friction, that act between moving surfaces - recognise that some mechanisms, including levers, pulleys and gears, allow a smaller force to have a greater effect.	Recognise that light appears to travel in straight lines 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 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 use the idea that light travels in straight lines to explain why shadows have the same shape as the objects that cast them. - Associate the brightness of a lamp or the volume of a buzzer with the number and voltage of cells used in the circuit - 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 - use recognised symbols when representing a simple circuit in a diagram.
Skills	**Asking Questions**	Ask simple questions and recognise that they can be answered in different ways.	Ask simple questions and recognise that they can be answered in different ways.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests.	Ask relevant questions and use different types of scientific enquiries to answer them. Set up simple practical enquiries, comparative and fair tests.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.	Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
	Measuring and Recording	Observe closely using simple equipment, Perform simple tests. Gather and record data to help in answering questions. .	Observe closely using simple equipment. Perform simple tests. Gather and record data to help in answering questions. Record data in a table or tally chart.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers. Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.	Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate. Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

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				Gather, record, classify and present data in a variety of ways to help in answering questions.	Gather, record, classify and present data in a variety of ways to help in answering questions.		
	Concluding	Identify and classify Use their observations and ideas to suggest answers to questions.	Identify and classify. Use their observations and ideas to suggest answers to questions.	Identify differences, similarities or changes related to simple scientific ideas and processes. Report on findings from enquiries, including oral and written explanations, displays or presentations or results and conclusions. Use straightforward scientific evidence to answer questions or to support their findings.	Identify differences, similarities or changes related to simple scientific ideas and processes. Report on findings from enquiries, including oral and written explanations, displays or presentations or results and conclusions. Use straightforward scientific evidence to answer questions or to support their findings.	Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, on oral and written forms such as displays and other presentations.	Identify scientific evidence that has been used to support or refute ideas or arguments. Report and present findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, on oral and written forms such as displays and other presentations.
	Evaluating	Explain what happened in an investigation and compare this with what was predicted.	Explain what happened in an investigation and compare this with what was predicted.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.	Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions	Use test results to make predictions to set up further comparative and fair tests.	Use test results to make predictions to set up further comparative and fair tests.

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Our Intention is to ensure that the children at our school:

- **Enjoy it**
- **Believe they can do it**
- **See the purpose in it**
- **Do it confidently**
- **Can do it now, tomorrow and forever**

Every subject, every cross- curricular theme, every aspect of our work is an 'it'!
Every child has at least one 'it' – we need to find it!