



Church (C of E) Moreton Primary School Science Overview 2022/2023



Outline of topics covered in the curriculum

(Note: Foundation Stage is covered through overall theme and the strand of 'Understanding the World'). Coverage is identified on the overview where applicable.)

Topic	FS1/2	Y1	Y2	Y3	Y4	Y5	Y6
Seasonal Change							
Plants							
Living things & their Habitats							
Animals including Humans							
Evolution and Inheritance.							
Materials and their properties							
Sound							
Light (including Earth and Space)							
Forces and Electricity							

Christ Church Science Overview: (Foundation Stage is a guide only and may be changed due to the children's interests or curiosity). Please see WS documents for ways to incorporate working scientifically within these lessons.

Topic	FS1	FS2	Y1	Y2	Y3	Y4	Y5	Y6
Seasonal Change	<p>Notice changes to the natural world around them e.g. water changing to ice in colder weather, leaves falling from trees in autumn.</p> <p>Use opportunities that arise through weather and daily routine to explore natural events such as rainbows, thunder storms etc</p>	<p>Regular CP and Forest School opportunities to develop understanding of the natural world, noticing environments and linking to senses.</p> <p>Learn about changes throughout the seasons and why this happens. Learn vocabulary linked to changes in weather / seasons</p>	<p>Observe changes across the four seasons.</p> <p>Observe and describe weather associated with the seasons and how day length varies.</p>					
Plants	<p>Explore new signs of life in spring and plant/grow food and flowers in Forest school</p>	<p>Regular CP and Forest School opportunities to develop understanding of the natural world, noticing environments and linking to senses.</p> <p>Understanding lifecycles – planting of seeds activity and the journey of a plant growing.</p> <p>Explore new signs of life in spring and plant/grow food and flowers in Forest school</p>	<p>Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.</p> <p>Identify and describe the basic structure of a variety of common flowering plants, including trees</p>	<p>Observe 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>Identify and describe the Functions of different parts of flowering plants: roots, stem/trunk/ leaves/flowers.</p> <p>Explore the requirements of plants for life and growth (air/light/water/ nutrients from soil/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>			

	FS1	FS2	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Living things & their Habitats	<p>Learn about the lifecycle of minibeasts (from / caterpillar-butterfly)</p> <p>Learn about the habitats for minibeasts Understand how to care for animals and the natural world around them, learning responsibilities and processes needed to keep things alive</p> <p>Learning about Vets and the treatments they can give animals</p>	<p>Understanding lifecycles – exploration of lifecycles. Eggs hatching. Etc.</p> <p>Looking at the natural world and the places that different animals live – fish live in the ocean.</p> <p>Learn about nocturnal animals and the adaptations to their body that enable them to be this way</p> <p>Explore different and contrasting environments/climates on Earth and how animals adapt to live in these</p>		<p>Explore and compare the difference between things that are living, dead and things that have never been alive.</p> <p>Identify that most living things live in habitats to which they are suited and describe how different habitats provide 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. Describe how animals obtain food from plants and other animals, using the ideas of a simple food chain and identify and name different sources of food.</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.</p> <p>Recognise that environments can change and that this can sometimes pose dangers to living things</p>	<p>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>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.</p> <p>Give reasons for classifying plants and animals based on specific characteristics</p>

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Animals including Humans	<p>Learn about my body and body parts (head, arm, leg, stomach etc)</p> <p>Learn about the 5 senses (names, how we use them etc)</p> <p>Engage in activities that explore our senses</p>	<p>Learn about my body and how I am similar / different to others</p> <p>Exploring lifecycles and the lifecycles of a variety of different animals.</p> <p>Taking care of creatures and living things in the world around them.</p> <p>Understanding healthy choices and the need for us to be healthy.</p> <p>Establishing routines that help with this.</p> <p>Looking at the natural world and the places that different animals live – fish live in the ocean.</p> <p>Sort and categorise dinosaurs (what they eat / species / features etc)</p> <p>Learn different categories of animals (mammals, fish, reptiles etc)</p> <p>Learn about specific animal habitats and how these may differ depending on the animal.</p>	<p>Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.</p> <p>Identify and name a variety of common animals that are carnivores, herbivores and omnivores.</p> <p>Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets)</p> <p>Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.</p>	<p>Notice that animals, including humans, have off-spring which grow into adults.</p> <p>Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).</p> <p>Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.</p>	<p>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</p> <p>Identify that humans and some other animals have skeletons and muscles for support, protection and movement</p>	<p>Describe the simple functions of the basic parts of the digestive system in humans.</p> <p>Identify the different types of teeth in humans and their simple functions.</p> <p>Construct and interpret a variety of food chains, identifying producers, predators and prey</p>	<p>Describe the changes as humans develop to old age</p>	<p>identify and name the main parts of the human circulatory system, and describe the functions of the heart, blood vessels and blood</p> <p>recognise the impact of diet, exercise, drugs and lifestyle on the way their bodies function</p> <p>describe the ways in which nutrients and water are transported within animals, including humans</p>

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Evolution Inheritance.	<p>(Year 6 topic only) – However prior knowledge on living things and their habitats across the year groups/ fossils in the Y3 topic of rocks is essential for this unit of work.</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 normally offspring vary and are not identical to their parents.</p> <p>Identify how animals and plants are adapted to suit their environment in different ways and that adaptation may lead to evolution</p>							
Materials and their properties	<p>Explore properties of materials to find the most appropriate for making boats</p> <p>Learn about baking processes and the changes to ingredients when making a cake</p>	<p>Dinosaurs- Observing fossils and artefacts at the museum.</p> <p>Explore palaeontology and how we can learn facts about animals that no longer exist through this process</p> <p>Learn vocabulary linked to changes in weather / seasons e.g. freezing, evaporating, solid, liquid, heat etc</p> <p>Explore materials and their properties, which are waterproof or not?</p> <p>Explore floating and sinking</p>	<p>Everyday materials: Distinguish between an object and the material from which it is made</p> <p>Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.</p> <p>Describe the simple physical properties of a variety of everyday materials.</p> <p>Compare and group together a variety of everyday materials on the basis of their simple physical properties.</p>	<p>Uses of everyday materials: 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>Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.</p>	<p>Rocks and Fossils Compare and group together different kinds of rocks on the basis of their appearance and simple physical properties</p> <p>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</p>	<p>States of Matter Compare and group materials together, according to whether they are solids, liquids or gases.</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>Identify the part played by evaporation and condensation in the water cycle and associate the rate of evaporation with temperature.</p>	<p>Properties and changes Compare & group together everyday materials on the basis of their properties, including their hardness, solubility, transparency, conductivity (electrical and thermal), and response to magnets.</p> <p>Know that some materials will dissolve in liquid to form a solution, and describe how to recover a substance from a solution.</p> <p>Use knowledge of solids, liquids and gases to decide how mixtures might be separated, including through filtering, sieving and evaporating.</p> <p>Give reasons, based on evidence from comparative and fair tests, for the particular uses of everyday materials, including metals, wood and plastic.</p> <p>Demonstrate that dissolving, mixing and changes of state are reversible changes</p> <p>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 acid on bicarbonate of soda.</p>	

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Sound	Explore making sounds, hearing sounds. Engage in activities that explore our senses	Explore making sounds, hearing sounds Engage in activities that explore our senses			<u>Year 4 Topic only.</u> Identify how sounds are made, associating some of them with something vibrating Recognise that vibrations from sounds travel 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			
Light (including Earth and Space)	Engage in activities that explore our senses Explore the natural world around them, commenting on what they can see, hear, feel and smell	Aspirations – looking at astronauts. Learn about space travel and astronauts Looking at Earth as the place in which we live (and maps associated with this). Use puppets/ resources and lights/torches to create shadows – explore how this happens			Recognise that they need light in order to see things and that dark is the absence of light Notice that light is reflected from surfaces. Recognise that light from the sun can be dangerous and that there are ways to protect their eyes. Recognise that shadows are formed when the light from a light source is blocked by an opaque object. Find patterns in the way that the size of shadows change		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	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

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Forces and Electricity	<p>Continuous provision enhancements that encourage children to explore cause and effect, forces, how things work and properties of materials e.g. sand/water play, vehicles and ramps, wobble boards etc</p> <p>Explore forces and speed through toy vehicles linked to transport</p>	<p>Observation and exploration of the ways in which things move. E.g. push and pull.</p> <p>Continuous provision enhancements that encourage children to explore cause and effect, forces, how things work and properties of materials e.g. sand/water play, vehicles and ramps, wobble boards etc</p> <p>Learn about gravity and explore this through continuous provision e.g. which falls faster feather or cube...why?</p>			<p>Compare how things move on different surfaces.</p> <p>Notice that some forces need contact between 2 objects, but magnetic forces can act at a distance.</p> <p>Observe how magnets attract or repel each other and attract some materials and not others.</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</p> <p>Describe magnets as having 2 poles and predict whether 2 magnets will attract or repel each other, depending on which poles are facing</p>	<p>Identify common appliances that run on electricity.</p> <p>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</p> <p>Recognise some common conductors and insulators, and associate metals with being good conductors</p>	<p>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 allow a smaller force to have a greater effect</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>Use recognised symbols when representing a simple circuit in a diagram</p>

Working Scientifically

Children will work scientifically across the seven key areas. A WS will be included in work to highlight the area being taught. Whilst some lessons may cover a range of ways of working scientifically, it is important that there is an explicit focus on one of these seven areas. Teachers will use the Working Scientifically Butterfly (KS1) or the Working Scientifically Wheel (KS2) to track coverage of these areas.

Strand	Foundation Stage	KS1	LKS2	UKS2
Questioning and Predicting	<p>In Foundation Stage, there will be no emphasis on the 7 ways of working scientifically. These will be introduced when children start in Key Stage 1.</p> <p>Children however, through the nature of foundation stage will engage in a range of working scientifically.</p>	Asking simple questions & recognising that they can be answered in different ways.	Asking relevant questions and using different types of scientific enquiries to answer them.	Using test results to make predictions to set up further comparative and fair tests.
Classifying		Sorting into groups based on physical properties and observations (5 senses)	Sorting into groups based on physical properties and observations (5 senses). Groups sorted based on the results from practical enquiries. Begin to use classification keys to sort objects (Y4)	Sorting into groups based on physical properties and observations (5 senses). Groups sorted based on the results from practical enquiries. Use classification keys to support classification.
Investigating		Performing simple tests (scaffolded and supported by the teacher)	Setting up simple practical enquiries, comparative and fair tests. <i>note: children should be given free choice about what they want to investigate. Whilst planning and carrying out investigations does need to be modelled. Children should be allowed to think about what they want to investigate and what equipment they want to use. This will allow foundations to be set ready to achieve the expected standard in UKS2)</i>	planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
Observing		Observing closely, using simple equipment.	Making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers.	taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
Recording		Gathering and recording data to help in answering questions	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.	Recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
Researching		Gathering information find out information and to research about famous scientists and influential people in science.	Gathering information to answer questions. Researching about famous scientists and influential people in science. Gathering information to support investigations and lead onto scientific enquiry.	Gathering information to answer questions. Researching about famous scientists and influential people in science. Gathering information to support investigations and lead onto scientific enquiry. To use research to look at how there is not always once answer and science enquiry is an ongoing process.
Concluding		Using their observations and ideas to suggest answers to questions	Understanding what has happened and being able to explain. Using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions Using straightforward scientific evidence to answer questions or to support their findings. Identifying differences, similarities or changes related to simple scientific ideas and processes. To report on findings in a range of ways – e.g. paragraph, oral telling, poster	Understanding what has happened and being able to explain and link to other ideas. Identifying scientific evidence that has been used to support or refute ideas or arguments. 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. To report on findings in a range of ways – e.g. paragraph, oral telling, poster