

Science Progression Map

At Christ Church, Science helps children understand the natural and physical world through curiosity, careful observation and evidence. From EYFS onwards, pupils build secure substantive knowledge while learning how scientists ask questions, test ideas and improve explanations.

Our curriculum is deliberately cumulative. Important ideas are revisited in new contexts so that pupils connect learning about living things, materials, forces, energy, Earth and space rather than remembering each unit in isolation.

Science supports our vision, 'Together, We Flourish.' Pupils learn to be curious, show perseverance and responsibility; to collaborate respectfully; and to recognise how scientific knowledge can improve lives and help us care for our shared world.

Our Four Key Science Schemas

These four recurring lenses help pupils organise knowledge, make connections and explain increasingly complex scientific ideas.

	Patterns & Change <i>What changes, what stays the same, and what repeats?</i> Pupils notice, describe and explain patterns across time, materials, living things and the physical world. They connect early observations of growth, seasons and simple change with later learning about life cycles, states of matter, planetary motion, inheritance and evolution.
	Cause & Effect <i>What happens when something changes - and why?</i> Pupils explore how one factor influences another. They move from noticing the effects of pushes, care and material choices to explaining forces, sound, light, electricity, chemical change, health and adaptation using increasingly secure scientific knowledge and evidence.
	Systems & Relationships <i>How do the parts work together or depend on one another?</i> Pupils learn that parts interact within systems. They connect body parts, plants, materials and habitats with food chains, circuits, the digestive and circulatory systems, the solar system, classification and the relationships between organisms and their environments.
	Working Scientifically <i>How do we find out, record evidence and improve our explanations?</i> Pupils learn to ask and refine questions; plan and carry out different enquiries; observe, measure and record; and use evidence to explain, evaluate and communicate. Independence, accuracy, precision and critical thinking increase from EYFS to Year 6.

Whole-School Science Structure

The sequence follows the school's agreed teaching order. Each unit revisits prior knowledge and develops one or more of the four schemas.

Year Group	AUTUMN 1 & 2	SPRING 1 & 2	SUMMER 1 & 2
EYFS	Continuous provision: natural world, living things, materials and how things work	Continuous provision: growth, health, forces, seasonal and environmental change	Continuous provision: observation, questioning, talk, drawing and simple comparison
Year 1	1. Animals Including Humans 2. Seasonal Changes: Autumn and Winter	1. Everyday Materials 2. Seasonal Changes: Spring and Summer	1. Plants 2. Scientists and Inventors
Year 2	1. Living Things and Their Habitats 2. Animals Including Humans	1. Uses of Everyday Materials 2. Plants	1. Biodiversity: Mini beasts 2. Scientists and Inventors
Year 3	1. Rocks 2. Animals Including Humans	1. Forces and Magnets 2. Plants	1. Light 2. Reduce, Reuse, Recycle / Scientists and Inventors
Year 4	1. Living Things and Their Habitats 2. Animals Including Humans	1. Electricity 2. States of Matter	1. Sound 2. Reduce, Reuse, Recycle / Scientists and Inventors
Year 5	1. Properties and Changes of Materials 2. Forces	1. Earth and Space 2. Animals Including Humans	1. Living Things and Their Habitats 2. Scientists and Inventors
Year 6	1. Living Things and Their Habitats 2. Animals Including Humans	1. Light 2. Electricity	1. Evolution and Inheritance 2. Scientists and Inventors



Progression in Science - Patterns & Change

What changes, what stays the same, and what repeats?

Stage	Cumulative 'I know' statements
 Nursery	- I know that living things grow and change over time. - I know that materials can change when they are squashed, mixed, heated or cooled. - I know that weather and the natural world change through the year.
 Reception	- I know that the four seasons bring changes in weather, daylight, plants and animals. - I know that plants and animals have life cycles with recognisable stages. - I know that some materials change state, for example when water freezes or ice melts.
 Year 1	- I know that weather and day length vary across the four seasons in a repeating yearly pattern. - I know that seeds and bulbs grow into plants and that plants can be compared as they change. - I know that humans and other animals share patterns in their body parts and senses but also have differences.
 Year 2	- I know that animals, including humans, have offspring that grow into adults in different ways. - I know that seeds and bulbs grow into mature plants when conditions are suitable. - I know that materials have patterns in their properties and that some solid objects can change shape.
 Year 3	- I know that flowering plants follow a cycle of pollination, seed formation and seed dispersal. - I know that rocks weather over time, fossils form in rock, and soils develop from rock and organic matter. - I know that shadow size changes in a pattern when the positions of the light source, object and surface change.
 Year 4	- I know that materials can change state when heated or cooled and that different materials change state at different temperatures. - I know that evaporation and condensation form a repeating water cycle and that temperature affects the rate of evaporation. - I know that patterns in vibrations explain changes in the pitch and volume of sounds.
 Year 5	- I know that mammals, amphibians, insects and birds have different life cycles and that living things reproduce in different ways. - I know that humans change through recognisable stages from birth to old age. - I know that Earth's rotation and orbit, and the Moon's orbit, create repeating patterns of day, night and movement in the sky.
 Year 6	- I know that offspring inherit characteristics but are not identical to their parents. - I know that living things have changed over millions of years and that fossils provide evidence of this change. - I know that variation, adaptation and natural selection can lead to evolution over many generations.



Progression in Science - Cause & Effect

What happens when something changes - and why?

Stage	Cumulative 'I know' statements
 Nursery	- I know that pushes and pulls can make objects start, stop or change direction. - I know that plants and animals need care and suitable conditions to grow. - I know that healthy choices about food, activity and toothbrushing help to care for my body.
 Reception	- I know that actions such as pushing, pulling, bending, heating and cooling can cause changes. - I know that living things need particular conditions to grow and stay healthy. - I know that I can use what I observe to give a simple reason why something happened.
 Year 1	- I know that water and light help plants to grow and remain healthy. - I know that the properties of a material affect what it is suitable for. - I know that changes in weather, temperature and daylight affect what we observe in each season.
 Year 2	- I know that food, water and air are needed for survival and that exercise, a balanced diet and hygiene support human health. - I know that plants need water, light and a suitable temperature to grow and stay healthy. - I know that forces can squash, bend, twist or stretch some objects and that material properties affect suitability.
 Year 3	- I know that contact forces, including friction, affect movement, while magnetic forces can act at a distance. - I know that reflected light enables us to see and that an opaque object blocking light causes a shadow. - I know that nutrition supports animals and that skeletons and muscles enable support, protection and movement.
 Year 4	- I know that heating and cooling cause changes of state and that higher temperature increases evaporation. - I know that vibrations cause sound; vibration strength affects volume and the vibrating object affects pitch. - I know that a lamp lights only in a complete circuit and that switches and conducting materials affect whether it works.
 Year 5	- I know that gravity pulls unsupported objects towards Earth, while friction, air resistance and water resistance oppose motion. - I know that levers, pulleys and gears can change the effect of a force. - I know that material properties determine use; some changes are reversible, while others form new materials and are usually irreversible.
 Year 6	- I know that light travels in straight lines, which explains how we see objects and why shadows have the same shape as the objects casting them. - I know that the number and voltage of cells, and the arrangement of components, affect how a circuit functions. - I know that diet, exercise, drugs and lifestyle affect how the circulatory system and the wider body function.



Progression in Science - Systems & Relationships

How do the parts work together or depend on one another?

Stage	Cumulative 'I know' statements
 Nursery	• I know that plants, animals and my body have parts that can be named. • I know that living things belong in places where they can find what they need. • I know that objects are made from materials with different properties.
 Reception	• I know that living things interact with their environment and that environments can be different. • I know that the parts of plants and animals help them to live and grow. • I know that food, sleep, activity and hygiene work together to support my health and wellbeing.
 Year 1	• I know that animals can be grouped by their features and diets, including fish, amphibians, reptiles, birds, mammals, herbivores, carnivores and omnivores. • I know that the main parts of the human body are associated with different senses. • I know that flowering plants and trees have basic parts, including roots, stems or trunks, leaves and flowers.
 Year 2	• I know that a habitat provides the basic needs of the plants and animals living there. • I know that a simple food chain shows how animals obtain food from plants and other animals. • I know that objects are made from materials selected for their properties and intended use.
 Year 3	• I know that roots, stems, leaves and flowers have functions and that water is transported through a plant. • I know that skeletons and muscles work together to support, protect and move animals. • I know that soils are systems made from weathered rock, organic matter, water and air.
 Year 4	• I know that teeth and the parts of the digestive system have different functions that work together to process food. • I know that food chains connect producers, consumers, predators and prey within habitats that can change. • I know that cells, wires, switches and components must be connected in a complete loop for a circuit to work.
 Year 5	• I know that the Sun, Earth, Moon and other planets are bodies within a solar system whose movements are related. • I know that reproduction connects the life cycles of plants and animals and ensures continuity between generations. • I know that mixtures can be separated by filtering, sieving or evaporation because their substances have different properties.
 Year 6	• I know that the heart, blood vessels and blood form a circulatory system that transports oxygen, nutrients and water around the body. • I know that living things, including microorganisms, plants and animals, can be classified in nested groups using shared characteristics. • I know that organisms are related to their environments through adaptation, competition, inheritance and interdependence.



Progression in Science - Working Scientifically

How do we find out, record evidence and improve our explanations?

Stage	Cumulative 'I know' statements
 Nursery	• I know how to ask simple 'why' questions about what I notice. • I know how to explore safely using my senses and simple equipment. • I know how to talk about or draw what I observe. • I know how to notice simple similarities, differences and changes.
 Reception	• I know how to ask questions and say what I think might happen. • I know how to observe closely, compare and sort what I find. • I know how to record an observation through talk, drawing or simple writing. • I know how to explain what I found using newly learned vocabulary.
 Year 1	• I know how to ask a simple scientific question and begin to choose a way to answer it. • I know how to observe closely, use simple equipment, perform a simple test and identify or classify. • I know how to gather and record observations using labelled diagrams or simple tables. • I know how to use my observations to suggest an answer and share what I found.
 Year 2	• I know how to ask simple questions and recognise that different questions need different ways of finding out. • I know how to observe over time, carry out simple comparative tests and seek patterns. • I know how to measure and record using simple tables, tally charts, pictograms or block diagrams. • I know how to notice patterns, draw a simple conclusion and communicate it using scientific vocabulary.
 Year 3	• I know how to raise relevant questions and recognise when a comparative or fair test is useful. • I know how to make systematic observations and take measurements using standard units and suitable equipment. • I know how to record findings using scientific drawings, labelled diagrams, tables and bar charts. • I know how to use evidence to draw a simple conclusion and suggest improvements or further questions.
 Year 4	• I know how to choose an enquiry approach and help plan a comparative or fair test. • I know how to make careful, systematic observations and take accurate measurements using a wider range of equipment. • I know how to record and present findings using tables, bar charts, classification keys and oral or written reports. • I know how to identify patterns, draw conclusions, make predictions and suggest improvements.
 Year 5	• I know how to plan different enquiries, identify variables and decide what to observe, measure and control. • I know how to make accurate and precise measurements, repeat readings when appropriate and select reliable sources. • I know how to record increasingly complex data using diagrams, keys, tables, bar charts, line graphs or scatter graphs. • I know how to analyse patterns and possible causes, draw evidence-based conclusions, make predictions and consider trust in results.
 Year 6	• I know how to plan an appropriate enquiry independently and control variables where necessary. • I know how to improve reliability through systematic methods, accurate and precise measurement, repeats and suitable sample sizes. • I know how to select and use scientific diagrams, classification keys, tables, scatter graphs, bar graphs and line graphs. • I know how to explain causal relationships, evaluate trust and limitations, and present how evidence supports or refutes ideas.