Science

Quote: *"Somewhere, something incredible is waiting to be known."* **– Carl Sagan**

Intent: At Cannington Primary School, we believe that every child is a scientist. Rooted in our Christian values and a sense of wonder in God's creation, our science curriculum nurtures children's natural curiosity and encourages them to ask questions about the world around them.

Through practical investigations, observation and enquiry, children develop the knowledge, skills and vocabulary needed to explore scientific ideas with confidence. They learn to think critically, make predictions, gather evidence and draw conclusions, helping them to understand how science shapes the world in which we live.

Children are inspired by the achievements of diverse scientists and discover how scientific understanding has helped us to make sense of the natural and physical world. We want every child to leave Cannington with a love of discovery, confidence in scientific thinking and an appreciation of the importance of science in everyday life.

Curriculum Overview						
	Autumn 1	**Autumn 2**	**Spring 1**	**Spring 2**	**Summer 1**	**Summer 2**
YR	Staying healthy How has my body changed? Body parts Magnets Seasons	Lights, reflections and shadows Reactions Natural world seasonal changes Hibernation and nocturnal animals	Freezing and melting Pushing and pulling Seasons	Space Weather experiments and forecasts Floating and sinking	Life cycles Food chains Habitats Pond dipping Animal categories Natural and man made Planet Earth	Food origins Kitchen health and safety Healthy food Senses
Y1	Seasonal Changes	Animals including humans	Seasonal Changes	Plants	Working Scientifically	Everyday materials
Y2	Use of everyday materials	Animals including humans	Seasonal Changes	Plants	Working Scientifically	Living things and their habitats
Y3	Rocks and Soils	Forces	Animals including humans	Light – eyes, shadows	Working Scientifically	Plants
Y4	Sound	Animals including humans	States of Matter	Living things and their habitats	Working Scientifically	Electricity
Y5	Earth and Space	Properties and changes in materials	Forces	Living things and their habitats	Working Scientifically	Animals including humans
Y6	Light	Animals including humans	Evolution and inheritance	Living things and their habitats	Working Scientifically	Electricity

Science Disciplinary Knowledge Progression (Working Scientifically)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Planning • Ask simple scientific questions when prompted. • Suggest simple ways of answering questions. **Conducting Enquiries** • Make relevant observations. • Conduct simple tests with support. **Recording Evidence** • Gather and record simple data. • Begin using simple scientific language. **Reporting Findings** • Begin to identify and classify. **Predictions &**	**Planning** • Ask simple scientific questions. • Recognise that questions can be answered in different ways. **Conducting Enquiries** • Observe closely using simple equipment. • Perform simple tests. **Recording Evidence** • Gather and record data to answer questions. • Use simple scientific vocabulary. **Reporting Findings** • Identify and classify objects and living things.	**Planning** • Ask relevant scientific questions. • Set up simple practical enquiries. • Begin fair and comparative testing. **Conducting Enquiries** • Make systematic observations. • Use simple equipment accurately. • Measure using standard units. **Recording Evidence** • Record findings using tables, keys and bar charts. • Gather and classify data. **Reporting Findings** • Report results	**Planning** • Ask relevant questions independently. • Set up fair and comparative tests. **Conducting Enquiries** • Make careful observations using a range of equipment. • Use thermometers and data loggers. • Take accurate measurements. **Recording Evidence** • Use scientific language, labelled diagrams, keys, tables and bar charts. • Record and present data in different ways. **Reporting Findings** • Present conclusions orally and in writing. • Use presentations and displays effectively.	**Planning** • Plan different types of scientific enquiries. • Begin recognising and controlling variables. **Conducting Enquiries** • Select appropriate equipment with support. • Take accurate measurements and repeat readings. **Recording Evidence** • Begin recording increasingly complex data. • Use classification keys, tables, bar graphs, line graphs and scatter graphs. **Reporting Findings** • Begin reporting causal relationships. • Present findings in oral and written forms.	**Planning** • Independently plan scientific enquiries. • Recognise and control variables appropriately. **Conducting Enquiries** • Select and use a range of scientific equipment. • Take precise measurements with increasing accuracy. • Take repeat readings where appropriate. **Recording Evidence** • Record complex results using scientific diagrams, classification keys, tables, bar graphs, line graphs and scatter graphs. **Reporting Findings** • Present conclusions and causal relationships clearly. • Explain the degree of trust in findings. • Present findings confidently in oral and written formats.

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Conclusions • Use observations to suggest answers to questions.	**Predictions & Conclusions** • Use observations and ideas to answer questions.	orally and in writing. • Present findings using displays and presentations. **Predictions & Conclusions** • Identify similarities, differences and changes. • Draw simple conclusions. • Use evidence to answer questions.	**Predictions & Conclusions** • Draw conclusions from evidence. • Make predictions. • Suggest improvements. • Use scientific evidence to support findings.	• Begin discussing the reliability of results. **Predictions & Conclusions** • Use test results to make predictions. • Begin evaluating scientific evidence. • Begin identifying evidence that supports or refutes ideas.	**Predictions & Conclusions** • Use evidence to support or refute arguments. • Use results to set up further enquiries. • Evaluate scientific evidence critically.

Progression of Scientific Enquiry Skills

Disciplinary Strand	KS1 (Y1-2)	Lower KS2 (Y3-4)	Upper KS2 (Y5-6)
Planning	Ask simple questions and recognise different ways to answer them	Plan simple enquiries and fair tests	Plan independent enquiries and control variables
Observation & Measurement	Observe closely using simple equipment	Make systematic observations and accurate measurements	Take precise measurements using a range of scientific equipment
Recording	Record using simple tables, pictures and charts	Use tables, diagrams, keys and bar charts	Use graphs, scatter graphs and complex data presentations

Disciplinary Strand	KS1 (Y1-2)	Lower KS2 (Y3-4)	Upper KS2 (Y5-6)
Classifying	Sort and identify	Classify using scientific criteria and keys	Use and develop classification systems
Reporting	Describe observations and findings	Report conclusions using scientific vocabulary	Present evidence-based findings and evaluate reliability
Concluding	Suggest answers from observations	Draw conclusions and make predictions	Use evidence to support or refute scientific ideas
Evaluating	Talk about what happened	Suggest improvements to investigations	Evaluate accuracy, reliability and validity

Science Substantive Knowledge Progression (National Curriculum Content)

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Animals including Humans • Name common animals (fish, amphibians, reptiles, birds, mammals) • Classify carnivores, herbivores and omnivores • Identify body parts and senses	**Animals including Humans** • Understand growth from offspring to adult • Identify basic survival needs • Understand healthy diets, exercise and hygiene **Plants** • Observe seeds and bulbs growing	**Animals including Humans** • Understand nutrition • Know functions of skeletons and muscles **Plants** • Functions of roots, stems, leaves and flowers • Water transport in	**Animals including Humans** • Understand the digestive system • Identify tooth types and functions • Construct food chains **Living Things & Habitats** • Use classification systems	**Animals including Humans** • Describe human development and ageing **Living Things & Habitats** • Compare life cycles • Understand reproduction in plants and animals	**Animals including Humans** • Understand the circulatory system • Describe functions of blood, vessels and heart • Understand effects of diet, exercise and lifestyle • Explain transport of nutrients and water **Living Things & Habitats** • Classify living things using

Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Plants • Identify common wild and garden plants • Identify deciduous and evergreen trees • Describe basic plant structures **Seasonal Changes** • Observe seasonal changes • Describe weather patterns and day length **Everyday Materials** • Identify common materials • Describe simple material properties • Compare and group materials	• Understand requirements for plant growth **Living Things & Habitats** • Identify living, dead and never-living things • Explore habitats and microhabitats • Understand simple food chains **Uses of Materials** • Compare suitability of materials • Investigate changing shape by bending, twisting, stretching and squashing	plants • Pollination, seed formation and dispersal **Rocks** • Compare rock types • Understand fossil formation • Recognise that soils are made from rocks and organic matter **Light** • Understand light sources, reflection and shadows **Forces & Magnets** • Compare movement on surfaces • Understand magnetic forces, poles, attraction and repulsion	• Understand environmental change **States of Matter** • Compare solids, liquids and gases • Understand changes of state • Explain evaporation and condensation within the water cycle **Sound** • Understand vibrations and sound travel • Explore pitch and volume **Electricity** • Build simple circuits • Identify conductors and insulators	**Properties & Changes of Materials** • Compare material properties • Understand dissolving and solutions • Separate mixtures • Understand reversible changes **Forces** • Understand gravity, friction, air and water resistance • Explore levers, pulleys and gears **Earth & Space** • Understand the Solar System • Explain day and night • Describe movement of Earth and Moon	observable characteristics and microorganisms **Light** • Explain how light travels • Understand reflection and shadow formation **Electricity** • Investigate voltage and brightness • Use circuit symbols and diagrams **Evolution & Inheritance** • Understand evolution over time • Use fossil evidence • Understand adaptation, inheritance and variation

Science Knowledge Progression by Strand

Strand	KS1 (Y1-Y2)	Lower KS2 (Y3-Y4)	Upper KS2 (Y5-Y6)
Animals Including Humans	Animal groups, body parts, senses, survival, growth, health	Nutrition, skeletons, muscles, digestion, teeth, food chains	Human development, circulatory system, healthy lifestyles
Plants	Plant identification and basic structure	Plant functions, life cycles, pollination and seed dispersal	Plant reproduction and life cycles
Living Things & Habitats	Habitats, microhabitats, food chains	Classification and environmental change	Life cycles, reproduction and advanced classification
Materials	Identify and compare materials	States of matter and changes of state	Material properties, dissolving and irreversible changes
Forces	Simple pushes, pulls and magnets	Magnets and friction	Gravity, resistance and mechanisms
Light	Light sources and shadows	Reflection and shadow patterns	Light rays, reflection and vision
Sound	—	Sound, vibration, pitch and volume	—
Electricity	—	Simple circuits	Voltage, circuit diagrams and component function
Earth & Space	Seasonal changes	—	Earth, Moon, Sun and Solar System
Evolution & Inheritance	—	—	Evolution, adaptation and inheritance