



St Michael's CE Primary School

Science Curriculum

2026-2027

Courage to Flourish in the Love of God

Curriculum Intent

At St Michael's CE Primary, our Science curriculum is rooted in our vision, 'Courage to Flourish in the Love of God'. We believe science provides opportunities for pupils to explore and understand God's world, inspiring awe and wonder about the natural phenomena around them. Through science, pupils are encouraged to question, investigate and deepen their understanding of the world.

We aim to foster pupils' curiosity, enquiry skills and scientific thinking, enabling them to work and think like scientists. Pupils are supported to ask questions, carry out practical investigations and draw conclusions, developing confidence in using scientific knowledge and skills to make sense of the world.

Our curriculum reflects our commitment to inclusion and ambition for all. Every pupil is supported to access and succeed in science, regardless of starting point, and is given opportunities to develop confidence, resilience and independence through hands-on, practical experiences. Pupils explore scientific ideas across different contexts and time periods. This fosters respect for the work of others, an understanding of the impact of science on society and an appreciation of those who contribute to scientific discovery.

Over time, pupils develop secure knowledge of key scientific concepts alongside the skills of enquiry, investigation and reasoning. By the end of primary school, they are equipped with the knowledge, skills and confidence to continue their scientific learning with curiosity, responsibility and a sense of wonder.



Curriculum Implementation

Curriculum and Sequencing

The Science curriculum at St Michael's CE Primary is bespoke to our school. It is carefully designed and structured by knowledgeable subject leaders, drawing on resources such as White Rose to support and enhance its delivery.

The curriculum is fully aligned with the expectations of the National Curriculum for Science, ensuring the progressive development of both scientific knowledge and working scientifically skills across all year groups.

Learning is sequenced so that new knowledge builds securely on prior learning, rather than being taught in isolation. This enables pupils to make meaningful connections across units and year groups, supporting strong progression in both their scientific understanding and enquiry skills

Scientific Enquiry

Our Science curriculum is built around a range of enquiry types, including **comparative and fair testing**, **pattern-**

seeking, observation over time, research, and identifying, grouping and classifying. These approaches enable pupils to explore scientific concepts in different ways, helping them to develop a deeper and more flexible understanding of scientific ideas.

Comparative / fair testing

Changing one variable to see its effect on another, whilst keeping all others the same.



Research

Using secondary sources of information to answer scientific questions.



Observation over time

Observing changes that occur over a period of time ranging from minutes to months.



Pattern-seeking

Identifying patterns and looking for relationships in enquiries where variables are difficult to control.



Identifying, grouping and classifying

Making observations to name, sort and organise items.



Problem-solving

Applying prior scientific knowledge to find answers to problems.



Progression in enquiry is carefully mapped to ensure that pupils revisit and apply each type across all year groups and within a variety of contexts. This ensures that skills are not taught in isolation, but are developed systematically over time, supporting increasing independence and confidence in scientific thinking.

Through this approach, we have developed a clear enquiry cycle which underpins all scientific learning. Pupils are taught **to ask questions, make predictions, and set up tests**, before **observing and measuring** outcomes using appropriate equipment. They then **record data, interpret and communicate their results**, and finally **evaluate** their findings, reflecting on the reliability of their evidence and suggesting improvements.

This structured cycle helps pupils to understand how scientific knowledge is developed, while providing them with the tools and confidence to think and work like scientists.

Teaching and Learning Approaches

Lessons follow a structured sequence of modelling, guided practice, independent application and reflection, adapted to the St Michael's lesson structure.

Teachers model techniques and vocabulary clearly, ensuring pupils understand processes before working independently.

Pupils are given opportunities to explore and investigate scientific concepts through practical enquiry. They practise key skills such as observing, measuring and recording, while reflecting on their findings to deepen their understanding and improve their approach.

Asking questions

Asking questions that can be answered using a scientific enquiry.



Making predictions

Using prior knowledge to suggest what will happen in an enquiry.



Setting up tests

Deciding on the method and equipment to use to carry out an enquiry.



Observing and measuring

Using senses and measuring equipment to make observations about the enquiry.



Recording data

Using tables, drawings and other means to note observations and measurements.



Interpreting and communicating results

Using information from the data to say what you found out.



Evaluating

Reflecting on the success of the enquiry approach and identifying further questions for enquiry.



Knowledge and Vocabulary

Key vocabulary is explicitly taught at the start of lessons and revisited regularly. Retrieval practice through 'Do Now' activities reinforces prior learning and supports long-term retention.

The spiral curriculum ensures knowledge and vocabulary are built on over time, allowing pupils to deepen understanding and use subject-specific language with increasing confidence.

Practice, Application & Outcomes

Pupils regularly apply their knowledge and skills through practical enquiry. Time is given for exploration, investigation and refinement, enabling pupils to test ideas and deepen their understanding of scientific concepts.

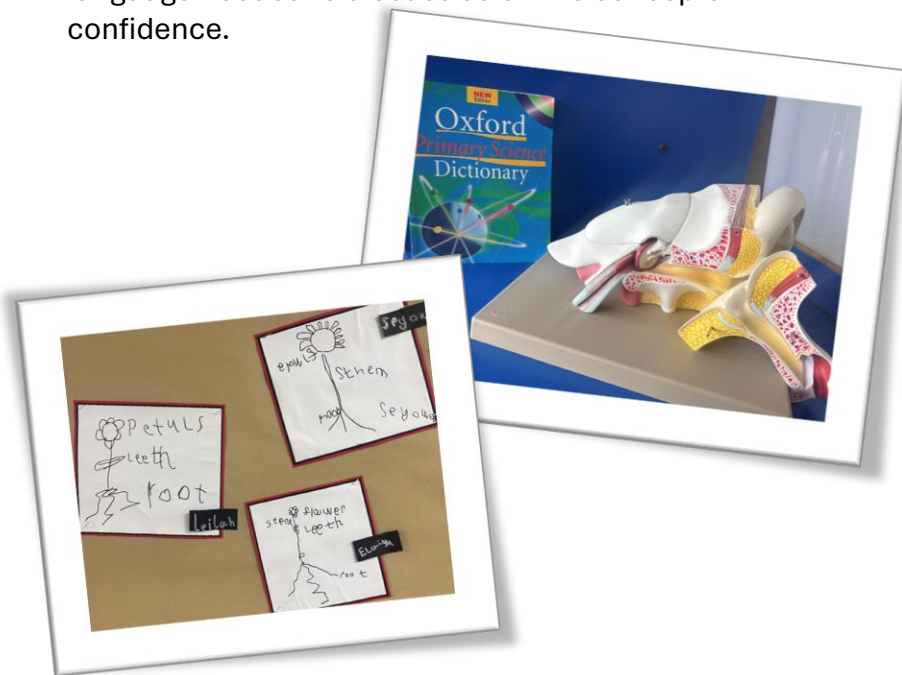
All learning is recorded in science books, which capture both practical activities and written outcomes. These show the development of pupils' enquiry skills, including questioning, predicting, observing, recording and evaluating.

Progression is evident in pupils' ability to plan and carry out investigations, use equipment accurately, record and interpret data, and draw conclusions with increasing independence and confidence. It is also seen in their developing scientific knowledge, as pupils build secure understanding over time

and apply this to explain, predict and reason increasingly effectively.

Reading

Reading is central to our Science curriculum. During direct instruction, pupils engage with carefully chosen, age-appropriate texts that introduce key knowledge while explicitly teaching subject-specific vocabulary in context. Pupils develop fluency, comprehension and help broaden their understanding of the subject, equipping them with the language needed to discuss scientific concepts with confidence.



Resources

A wide range of resources is available to support the teaching of Science. These include a variety of equipment for measuring, testing and investigating, as well as practical resources that help pupils to explore and understand scientific concepts. Visual aids, models and demonstrations are also used to support understanding and make abstract ideas more accessible.

These resources enable pupils to engage in hands-on learning, develop enquiry skills and gain a deeper understanding of the scientific concepts being taught.

Assessment

Assessment is ongoing and linked to the St Michael's teaching and learning framework. 'Do Now' quizzes check prior learning, while exit quizzes assess understanding from each lesson. Teachers use questioning, observation and pupils' work to inform next steps and support progress.

Diversity

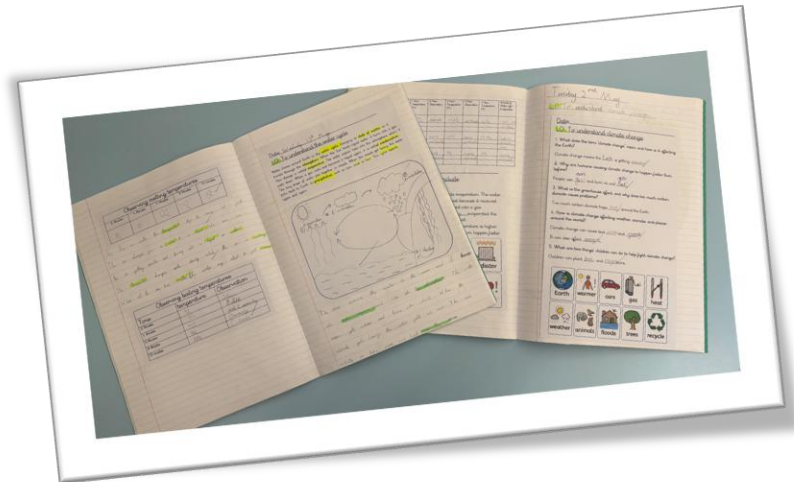
A diverse Science curriculum helps to challenge stereotypes, build respect for different perspectives and highlight the contributions of a wide range of scientists to our

understanding of the world.

Our Science curriculum supports this by:

- Including scientists from a range of backgrounds, cultures and time periods within units of work.
- Highlighting the achievements and contributions of both historical and contemporary scientists, ensuring representation across gender, ethnicity and nationality.

Our science curriculum reflects the diversity of the scientific community by introducing pupils to scientists from a wide range of genders, ethnicities, cultures and historical periods. Scientists are carefully chosen to link directly to each unit of learning, ensuring pupils encounter diverse role models while recognising the contributions of both pioneering historical figures and contemporary scientists to the development of scientific knowledge.



Inclusion

Learning is adapted to meet the needs of all pupils through scaffolding, modelling, and flexible support. Tasks are accessible yet appropriately challenging, enabling all pupils to participate, develop skills, and express their ideas with increasing confidence and independence.

SMSC

Science supports SMSC by encouraging children to:

- Explore different perspectives.
- Reflect on ethical issues.
- Collaborate with others.
- Appreciate cultural diversity through subject-specific content.

British Values

Science supports the promotion of British values by providing opportunities for pupils to question, investigate and form their own conclusions based on evidence.

Through discussion and enquiry, pupils learn to respect different viewpoints, understand the importance of evidence and develop tolerance and mutual respect. Lessons encourage independent thinking and curiosity, while collaborative investigations help pupils understand fairness,

shared responsibility and the value of working with others to reach informed conclusions.

Rights Respecting Schools

Our Science curriculum makes a significant contribution to our Rights Respecting Schools ethos by providing regular opportunities for pupils to develop curiosity, ask questions and investigate the world around them through enquiry and exploration.

Through carefully sequenced learning, pupils fulfil Article 29 by developing scientific knowledge, enquiry skills and critical thinking, Article 28 through access to a high-quality science education, and Article 13 by communicating their observations, ideas and conclusions using scientific vocabulary and evidence. Pupils are encouraged to ask questions, make predictions, evaluate evidence and share their findings, supporting Article 12, while practical investigations and collaborative learning promote Article 31, recognising every child's right to engage in enriching, hands-on learning experiences

Together, these opportunities help pupils become curious, resilient and reflective scientists with a deeper understanding of the world around them.



Sustainability

Sustainability is developed progressively throughout the Science curriculum by helping pupils understand the relationship between humans and the natural world.

In Key Stage 1, pupils begin by exploring seasonal change, caring for wildlife, recycling, reducing waste, plastic pollution and the importance of plants and habitats. They investigate how living things depend on healthy environments and learn simple ways they can protect them.

In Lower Key Stage 2, pupils deepen their understanding of biodiversity, ecosystems, pollination, food chains, soils and the impact of human activity on habitats. They investigate deforestation, climate change, pollution, natural resources and the importance of protecting wildlife while recognising the interconnected nature of living things.

In Upper Key Stage 2, sustainability is explored through renewable and non-renewable energy, hydroponic food production, ecosystems, adaptation, biodiversity, water resources and environmental conservation.

Pupils consider how scientific knowledge can be used to address global challenges and develop an understanding of humanity's responsibility to protect natural resources and the environment for future generations.

Key sustainability themes across the curriculum:

Year 1: Caring for wildlife through the seasons, reusing and recycling materials, growing plants and understanding where food comes from.

Year 2: Plastic pollution, habitats, food chains, climate change, deforestation and helping wildlife in the local environment.

Year 3: Soil conservation, pollination, plant life cycles and ecosystems.

Year 4: Biodiversity, human impact on habitats and renewable versus non-renewable energy.

Year 5: Pollination, hydroponic food growing, caring for shared resources and understanding ecosystems.

Year 6: Adaptation, natural selection, biodiversity, classification and understanding the natural world as a connected system.

As part of our sustainable efforts, each year group takes part in planting and growing.



Curriculum Impact

The impact of the Science curriculum is seen in pupils' developing confidence, curiosity and ability to think and work like scientists. Over time, pupils build secure knowledge and enquiry skills, enabling them to understand, question and explain the world around them with increasing accuracy.

- Pupils demonstrate progression in scientific knowledge and enquiry skills across biology, chemistry and physics, with increasing independence.
- Pupils use subject-specific vocabulary accurately to explain their ideas, methods and conclusions.
- Science books show clear development of enquiry, including questioning, predicting, observing, recording, interpreting and evaluating over time.
- Pupils can reflect on their investigations, analyse results and refine their thinking, showing resilience and a willingness to learn from outcomes.
- Pupils make connections between scientific concepts and the wider world, developing an understanding of science as a relevant and global discipline.
- All pupils, including those with additional needs, access the curriculum and make progress from their starting points.
- Pupils leave primary school with confidence, curiosity and the skills to continue their scientific learning



Curriculum Map 2026-2027

	Autumn	Spring		Summer	
Nursery	Science Knowledge and Skills – See Nursery Curriculum for more detailed information				
Reception	Science Knowledge and Skills – See Nursery Curriculum for more detailed information				
Year 1	Animals Including Humans Seasons	Materials Seasons		Plants and Trees Seasons	
Year 2	Materials	Living Things & their Habitats	Animal’s Including Humans	Plants	
Year 3	Rocks	Forces and Magnets	Plants	Light	Animals including Humans
Year 4	Living Things & their Habitats	Electricity	Sound	States of Matter	Animals including Humans
Year 5	Earth and Space	Living Things & their Habitats	Forces	Properties and Changes of Materials	Animals including Humans
Year 6	Light	Animals including Humans	Evolution and Inheritance	Living Things & their Habitats	Electricity



Spirituality

Our definition of spirituality at St Michael's CE Primary School:

To talk about spirituality is to talk about something which is beyond words.

Spirituality is linked to big questions about the meaning and purpose of life; it includes ideas relating to oneself, others, the natural world and the transcendent.

We refer to this as:

- The stillness of the mind
- The settling of the soul
- The uplifting of the spirit
- Being at one in the world and finding meaning and purpose in life.

For some, but not all, this will be experienced, expressed or explained through faith or belief.

When discussing this with our pupils, we refer to spirituality as:

The way **WOWS, OWS and NOWS** shape me into the person that I am and will become.

Spiritual development contains many facets and it is concerned with a number of areas of an individual's life. Therefore, when developing spirituality in pupils and adults, we, in line with our distinctively Christian vision and our school's definition for spirituality, look at four key areas: self, others, transcendence (beyond), and nature.



Spirituality Opportunities:

Self

Opportunities

- After experiments, hold discussions about the wonder of scientific discovery. Ask pupils how these experiences make them feel and what questions they have about the world.
- Discuss how our senses help us experience the world and connect with others, fostering gratitude and awareness.
- Opportunity to explore personal faith and how this reflects on their scientific views.
- To love and respect our own bodies and have an understanding of how our bodies are unique.
- Facilitate discussions about the vastness of the universe and what it means to be part of something so large. Prompt pupils to think about their place in the universe and what they find awe-inspiring about it.
- Discuss the concept of growth and change, relating it to personal experiences. Ask pupils to reflect on their own growth and the changes they have experienced in their lives.
- Encourage pupils to think about their responsibilities towards the environment. Discuss the idea of stewardship and how caring for the Earth can be seen as a spiritual practice.
- Discuss the interconnectedness of body, mind, and spirit. Encourage pupils to reflect on what it means to be healthy and how they can care for themselves holistically.

Potential Question Prompts

- How does this work?
- Why has this happened?
- How are you unique?
- How can you make a difference in the world?
- How does understanding the human body and mind help you appreciate your own existence?
- How can learning about genetics and heredity influence your sense of identity and purpose?

Others

Opportunities

- To care for habitats to reinforce the understanding of unity and interconnectedness. Children feel part of a larger whole, fostering a sense of belonging and purpose.
- Taking responsibility of the environment is a way of fulfilling our responsibilities towards others and future generations, producing a stillness of the mind.
- To explore significant people and the vows in their field.
- Encourage pupils to reflect on teamwork and collaboration. Discuss the importance of listening to different viewpoints and how working together can lead to better outcomes.
- Facilitate discussions on how science can address social issues and improve lives. Encourage pupils to think about their role in advocating for others and promoting equity.

Potential Question Prompts

- Why should we care for habitats?
- What are the vows and oaths in the stories behind the significant people you study?
- How can scientific advancements in medicine and technology improve the well-being of others?
- What role does empathy play in scientific research and healthcare?
- How can understanding ecosystems and biodiversity help us work together to protect our planet?

Transcendence

Opportunities

- Opportunity to explore how living organisms adapt to their ecosystems.
- How each organism plays a role, connecting to the idea of 'being at one in the world'.
- Having a sense of how states of matter impact the world around us.
- Opportunity to be grateful for the world around us.
- Encourage pupils to reflect on the vastness of the universe and their connection to it. Discuss questions like, "What do you feel when you look at the night sky?" or "How does understanding the universe change your perspective on life?"
- Discuss the themes of transformation and renewal. Ask pupils to reflect on their own experiences of change and growth, and how these experiences connect them to the larger cycle of life.
- Discuss the importance of caring for the Earth and how this reflects a commitment to future generations. Encourage pupils to think about how their actions can lead to positive change in the world.

Potential Question Prompts

- How do living organisms survive?
- How do living organisms adapt to their surroundings?
- I wonder how animals survive?
- What would happen if there was no water to evaporate?
- How do scientific discoveries about the universe expand our understanding of the divine or the transcendent?
- What are the similarities and differences between scientific and spiritual explanations of the origins of life?
- How can studying the vastness of space inspire a sense of wonder and connection to something greater than ourselves?

Nature

Opportunities

- Appreciating the beauty in nature and understand the differences and similarities in plants and eco-systems and how they are interconnected.
- Discuss the idea that all living things are part of a better system and depend on each other fostering a sense of connection to the natural world.
- Appreciating the natural world around us and how the time taken to produce the natural elements of the world.
- Organising trips to learn about ecosystems, observe wildlife, and understand biodiversity. These experiences can inspire a sense of awe and interconnectedness with the natural world.
- Taking time to appreciate the natural world.
- Grow plants under different conditions to study the factors that affect growth, such as light, water, and soil type. Reflect on the miracle of growth and the spiritual lessons of nurturing and patience.
- Keep journals to record observations of seasonal changes in the local environment. Reflect on the spiritual significance of seasons and cycles in nature.

Potential Question Prompts

- What are the differences and similarities in plants and eco-systems?
- How are the living things dependent on each other?
- How does learning about the natural world enhance your appreciation for the environment?
- What spiritual lessons can we draw from the cycles and systems observed in nature?
- How can scientific knowledge about climate change motivate us to take better care of our planet?