



SCIENCE CURRICULUM

What we teach

At Bishops Itchington Primary School, our science teaching aims to provide all children with a strong foundation for understanding the world around them through the disciplines of biology, chemistry, and physics. We follow the National Curriculum to ensure children receive a broad and balanced curriculum. In the Early Years, this foundation begins through the “Understanding of the World” strand, where children explore their environment, notice seasonal changes, ask questions, and develop observational skills, laying the groundwork for scientific enquiry.

We strive to nurture curiosity, excitement, and a sense of wonder about natural phenomena, while developing pupils’ ability to think scientifically, apply rational explanations, and analyse causes and effects. It also aims to develop children’s understanding of the achievements of scientists, both from the past and present, and the uses and implications of science today and for the future.

Scientific enquiry skills are embedded in each topic. Topics are mostly taught as a half-termly unit with the content being revisited and developed further throughout the children’s time at school. For example, topics such as Plants are taught in Key Stage One and studied again in further detail throughout Key Stage Two. This model allows children to build upon their prior knowledge and increase their enthusiasm for the topics studied whilst embedding procedural knowledge into long-term memory.

We also place importance on helping children appreciate the achievements of scientists past and present, and the impact of science on shaping society and the future. By the time they leave Bishops Itchington School, pupils will have developed secure scientific knowledge, the ability to carry out enquiries, and an appreciation of how science continues to influence their lives and the wider world.

How we teach Science

We aim to nurture children’s natural curiosity through engaging, practical and enquiry-based lessons. Pupils are encouraged to question the world around them, develop independence as scientists, and understand the importance of science in everyday life.

Early Years Foundation Stage (EYFS)

In the Early Years, science learning is rooted in the *Understanding the World* area of the curriculum. Children explore natural phenomena through play, observation and hands-on experiences. They are encouraged to notice patterns, make comparisons, ask simple questions and talk about what they see. Activities such as planting seeds, exploring materials, and observing seasonal changes lay the foundations for scientific enquiry. This early exposure builds curiosity, confidence and the language needed to transition successfully into the more formal scientific approaches of Key Stage 1.

Progression into Key Stage 1 and Key Stage 2

From Year 1 onwards, science teaching follows a carefully sequenced progression of skills and knowledge. Each class dedicates a full afternoon every week to science, giving pupils sustained time to immerse themselves in investigative work and develop secure understanding of scientific concepts.

Through this structure, pupils are taught to plan, carry out and reflect on investigations, developing their ability to work both independently and collaboratively. As they move through the school, they learn to:

- understand the purpose of an enquiry,
- identify and control variables,
- conduct fair tests,
- make accurate observations and measurements, and
- present results clearly using charts, diagrams and graphs.

This systematic approach ensures children build both procedural knowledge (how to investigate) and conceptual knowledge (what they are investigating), while also learning to evaluate evidence and justify their conclusions.

Working Scientifically

Across the school, pupils are explicitly taught to work scientifically through the five types of enquiry:

- observing over time,
- pattern seeking,
- identifying, classifying and grouping,
- comparative and fair testing, and
- researching using secondary sources.

Regular opportunities to use these approaches enable children to choose the most effective method for answering questions, develop critical thinking, and apply investigative skills in a range of contexts.

Language and Communication in Science

Scientific vocabulary is introduced progressively and revisited through high-quality questioning, discussion and writing opportunities. Pupils are supported to articulate scientific explanations both orally and in writing, enabling them to communicate their ideas with precision and confidence.

Wider Opportunities

Beyond weekly lessons, pupils enjoy an annual Science Day linked to British Science Week, which brings the whole school together for investigations, cross-curricular projects and creative exploration. We also welcome visitors from a range of STEM fields and provide real-

world experiences—such as handling animals or learning from healthcare professionals—to broaden horizons and highlight the relevance of science to future careers.

Pupils have further opportunities to extend their learning through trips and specialist experiences. Recent examples include a visit to a local solar farm to explore renewable energy in action, and the chance to use virtual reality headsets with a visiting science educator to experience scientific concepts in an immersive way. These experiences inspire curiosity, make science memorable, and help pupils understand its practical applications beyond the classroom.

Science in Context

Our curriculum also highlights the contributions of significant scientists, past and present, and encourages pupils to consider the uses and implications of science today and in the future. In this way, children come to see science as a dynamic and evolving discipline that shapes the modern world.

IMPACT

At Bishops Itchington Primary School, our children develop into confident, curious and reflective young scientists. By the time they leave us, they have not only gained secure knowledge across the science curriculum but also developed the skills to investigate, reason and communicate like scientists.

We see the impact of our science curriculum in many ways:

- **Knowledge and skills** – Pupils can recall key scientific concepts and vocabulary with accuracy, and apply their understanding to new contexts. They are able to plan and carry out investigations independently, make predictions, record and interpret results, and draw thoughtful conclusions.
- **Enthusiasm and curiosity** – Children talk about science with excitement and are eager to share their findings. They make connections between classroom learning and the wider world, often bringing their own questions, observations and interests into lessons.
- **Progression over time** – Work in books, class discussions and practical investigations show clear progression from Early Years through to Year 6. As children move through the school, they build on prior knowledge and refine their enquiry skills, becoming increasingly independent and precise.
- **Confidence and communication** – Pupils can use scientific vocabulary confidently to explain their ideas, both orally and in writing. They enjoy presenting their work to others, whether that is in class, during Science Day, or through sharing investigations with parents and visitors.
- **Memorable experiences** – Feedback from children shows that visits, visitors and special events leave a lasting impression. Whether recalling planting beans in Year 1, using virtual reality headsets to explore the solar system, or investigating electricity in Year 6, pupils remember their science learning long after the lessons have finished.
- **Awareness of science in the wider world** – Children learn about the lives and contributions of at least five significant scientists each year. This develops not only their

knowledge of key discoveries but also their understanding that science is a diverse, evolving field shaped by many people. Through this, children begin to see how science links to future careers and the wide range of opportunities available in STEM, helping them to imagine themselves as the scientists, engineers or innovators of tomorrow.

To celebrate **International Women and Girls in Science Day**, all girls in Year 6 visited the Coventry Transport Museum and took part in a range of engaging STEM activities. They attended hands-on science workshops led by Warwick University, explored the science behind balloons and helium, and participated in activities including reaction-testing with the Girls on Track Formula 1 team, experimenting with sensors, and computerised embroidery. The experience increased pupils' enthusiasm for science, broadened their understanding of STEM careers, and provided valuable opportunities to meet inspiring role models. Pupils left feeling motivated, curious and more confident about the possibilities available to them in the world of science and technology.

We know our curriculum has impact because children demonstrate a strong love of science and a secure understanding of key ideas. Teachers monitor progress through regular assessment of practical work, discussions and written outcomes, ensuring misconceptions are addressed and learning builds year on year. By the end of Year 6, pupils are well prepared for the challenges of secondary science and carry forward a sense of curiosity and enthusiasm for exploring the world around them.

The children feel like real scientists, take ownership of their own learning and know what jobs they could have within the scientific community.

PUPIL VOICE:

- Children speak positively about Science, especially about practical investigations, describing this as an enjoyable aspect of their learning
- Children in Year 1 speak animatedly about their *seasons days*, indicating strong engagement and memorable learning experiences
- Year 5 pupils particularly value hands-on experiences such as observing tadpoles and caterpillars, showing excitement and interest in real-life science opportunities
- Several pupils are able to name a famous scientist and describe their achievements
- Children use a range of appropriate scientific vocabulary confidently when discussing their learning.
- In celebration of International Women and Girls in Science Day, the Year 6 girls spoke enthusiastically about their visit to Gayden Motor Museum and said how much they enjoyed the STEM activities. They said they felt more confident about possibilities available to them in the world of science and technology.