

St Matthew's Bloxam C of E Primary School



Science Policy 2025

Our Science Vision

At St. Matthew's Bloxam C. of E. Primary School to allow our pupil's light to shine in Science. We want our children to explore and discover the world around them, so they have a deeper understanding of the world they live in. Children will engage in practical, hands-on experiences and investigations. They will be taught essential aspects of the knowledge, methods, processes and uses of science, and scientific investigation, to explain what is occurring, predict how things will behave and analyse causes. They will be encouraged to develop their curiosity and questioning of the world, confident to ask questions and prepared with the skills to investigate for answers.

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Real-life experiences and STEM (Science, Technology, Engineering and Mathematics) workshops are a fundamental part of our approach. Within Rugby, as an engineering town, we encourage members of the community who are regularly invited in to share their experience and expertise which give pupils the opportunity to explore science in a cross-curricular manner. We encourage pupils to be confident to ask questions and not to be afraid of getting it wrong, but instead viewing it as an opportunity to learn. We believe in equality of access, and endeavour to unlock pupils' potential for future life choices.

At St. Matthew's Bloxam, we have a whole school ethos of respecting both the immediate and wider environment and community. We encourage the children to be responsible and recognise how lucky we are to have our school grounds including our allotment, forest school and pond to be used as a resource.

We aim to ensure that our children are motivated, confident, life-long scientific learners who will continue to explore the world around them, way beyond their time at primary school.

Aims and objectives

This policy sets out to ensure consistency in the teaching and learning within Science across the school. This is to ensure that pupils are equipped with the ability to explore, discover and investigate to allow all to let their light shine. These first hand experiences will in turn enable

them to understand the world. We aim to ensure experiences will be appropriate, relevant, challenging, engaging, fun, hands on, safe and satisfy the children's natural curiosity.

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Aims

The national curriculum for science aims to:

- Builds on the children's natural curiosity.
- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Teach and build on scientific skills.
- Develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them.
- Are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.
- Are stimulated to investigate, question and develop attitudes of science and communicate through scientific language.
- Are prepared for life in an increasingly scientific and technological world.

Attitudes

- Encouraging the development of resilient and positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work independently and cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of computing in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.
- Enabling our children to work scientifically, conducting fair tests.
- Allow children to use scientific skills across the curriculum.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data.

Teaching and Learning

In the Early Years Foundation Stage

Science is taught through Understanding the World. Science is developed by building upon the children's natural curiosity and fascination for their environment and the world around them. Children are encouraged to use all their senses to investigate, explore and make predictions.

Year 1 & 2

The main focus of science teaching is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about Science will be through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos. Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1.

Year 3 & 4

The main focus of Science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair tests and finding things out using secondary sources of

information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' must always be taught through and clearly related to substantive Science content in the programme of study. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge.

Year 5 & 6

The main focus of Science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At Upper Key Stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer Science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. Pupils should read, spell and pronounce scientific vocabulary correctly. 'Working and thinking scientifically' must always be taught through and clearly related to substantive Science content in the programme of study.

How science is structured at St. Matthew's Bloxam

Children at St. Matthew's Bloxam C of E Primary School learn through a thematic curriculum, with the teaching and learning of science being based on investigation, observation and application. The science theme is changed each half term or term to ensure children are exposed to many different scientific themes throughout their time at school. Children in the foundation stage are taught the science elements as indicated in the development matters curriculum through: Knowledge and Understanding of the World.

We design our own units of learning, customising them to meet the needs of our pupils; including those who have SEND needs and those who are gifted and talented. This ensures our teaching and learning meets the demands and interests of the full range of learners and keeps pace with changes.

We believe in quality first teaching which involves:

- highly focused lesson design with sharp learning intentions
- high demands of pupil involvement and engagement with their learning
- high levels of interaction for all pupils
- appropriate use of teacher questioning, modelling and explaining
- an emphasis on learning through dialogue, with regular opportunities for pupils to talk both individually and in groups
- an expectation that pupils will accept responsibility for their own learning and work independently
- regular use of encouragement and authentic praise to engage and motivate pupils

In addition to the knowledge and understanding aspects of the National Curriculum, emphasis needs to be put on scientific investigation and enquiry, including the correct use and care of scientific apparatus. When planning the learning experiences, the pupils' previous experiences and present understanding should be taken into account.

Science is taught in discreet science lessons with cross curricular links. Our children experience science outside of the classroom as much as possible, accessing the variety of resources available on site, such as the pond and forest schools areas.

Teachers are encouraged to actively teach science skills, and reinforce learning with selected enquiry stimulations. We encourage children to ask and answer their own questions as often as they like. Children should complete at least one investigation per half term. These investigations should be based on their current topic but have a focus on developing the children's scientific skills.

Enrichment opportunities through the year aim to develop a lifelong interest in science. These include: educational trips, school science days / weeks, visits to other schools and events and demonstrations by visiting experts.

Equal opportunities

At St. Matthew's Bloxam C of E Primary School we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.

Inclusion

St Matthew's Bloxam C of E Primary School is always all inclusive. We do this in a number of ways including:

- teachers adapting planning so that individuals have specific learning outcomes;
- teachers working specifically with children with SEND
- providing extra adult support in class so that children are focused on accessing the curriculum;
- meeting regularly in staff teams to discuss provision and if it needs to be adapted;
- liaising with outside agencies to receive the best advice on how to help children learn
- adapting buildings and furniture if necessary so that children are not restricted from using the school fully.

Accessibility

At St Matthew's Bloxam C of E Primary School we are committed to providing a fully accessible environment which values and includes all pupils, staff, parents and visitors regardless of their education, physical, sensory, social, spiritual, emotional, sexual orientation and cultural needs. We are also committed to challenging negative attitudes about disability and accessibility and to developing a culture of awareness, tolerance and inclusion.

The role of the Science Co-ordinator

To provide leadership in the development of science learning throughout the school by:

- Providing advice, support and guidance in the field of science
- Ensuring good planning and assessment activities support and enhance the delivery of the science curriculum

- Maintain the science resources to support teaching and learning and managing the budget to ensure Value for Money
- Keep abreast of professional development in the field of science education and provide training to staff to support their CPD
- Develop and maintain links with outside agencies especially in order to increase access to resources to support science learning
- Liaise with the governors in order to keep the governing body informed of standards of learning in science in school and new developments in science education
- Ensure that the statutory requirements within the National Curriculum for science and assessment are met
- Fostering cross curricular links and developing the use of ICT in science throughout the school
- Raise the profile of science throughout the school by making science come alive for the children.

Assessment and recording

- Teachers assess children's work in science by making informal judgments as they observe them during lessons
- On completion of pieces of work, the teacher marks it according to the marking policy.
- Children are assessed against national curriculum statements and this is recorded termly on Sonar.

Resources

We have sufficient resources for all science teaching units in the school and these are shared across the year groups depending on the unit being covered. Resources are kept in the Science Lab, organised into boxes. The library contains a good supply of science topic books.

We use websites which have been identified for all areas of the curriculum and can be used through the IWB in each classroom. We also have microscopes, a digital microscope, data loggers and make use of cameras and video cameras.

Monitoring and Review

It is the responsibility of the science coordinator to monitor the standards of the children's work in and the quality of the teaching in science.

Governors

Governors are kept informed are kept informed through head teacher's reports and their own monitoring visits.

Links with other policies

This policy is linked to:

- Assessment Policy
- Marking Policy
- Health and Safety Policy

Review

This policy will be reviewed in 3 years' time (Spring Term 2028) or before if there is a significant change in Government policy.