

Always building friendships with one another, whilst being thankful for what we have.

Science

Intent of our Science Curriculum:

Science is a core subject within the National Curriculum. Our science curriculum is taught in a way that enables children to acquire the necessary knowledge, whilst enjoying the experience of working scientifically; understanding its value whilst sustaining interest. Discovering scientific concepts through observing scientific phenomena and conducting experimental investigations for themselves will support the children in our school to use their learning for work, family and to contribute as informed citizens.

The principal focus of science teaching:

- in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them.
- In lower key stage 2 is to broaden their scientific view of the world around them.
- In upper key stage 2 is to enable a deeper understanding of a wide range of scientific ideas.

Children are naturally curious and we encourage this inquisitive nature throughout their time in school and beyond. Science stimulates and excites pupils' curiosity about phenomena and events in the world around them and all pupils are taught essential aspects of the knowledge, methods, processes and uses of science. A high quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics and we recognise the importance of science in every aspect of daily life. Through the programmes of study in the National Curriculum Science document, we ensure that the Working Scientifically skills are built on and developed throughout their school life so that they can use equipment, conduct experiments, build arguments and explain concepts confidently, continue to ask questions and be curious about their surroundings. We believe that it is essential for children to build up a secure understanding of scientific knowledge and concepts in order for them to recognise the power of rational explanations and develop a sense of excitement and curiosity about natural phenomena and therefore understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Asking questions about what they notice helps children to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative tests and finding things out using secondary sources of information. They should ask questions about what they notice and with help, develop their understanding of scientific ideas using scientific language to talk about what they have found out and communicate their ideas in a variety of ways. Most learning about science should be done through the use of first-hand experiences.

Monitoring progress in science regularly is important to ensure that pupils are supported effectively and therefore reach their potential. We understand that achievement in science is more effective when children are involved in planning, carrying out and evaluating investigations that, in some part they had suggested themselves, linking scientific ideas to real world experiences and connecting these with other areas of the curriculum, including English and maths. Learning in this fashion engages and enthuses pupils, develops their natural curiosity and motivates them to find out more.

while trying hard each and every day to trust other people around us through humility and service.

Remembering to forgive when we have been wronged and hoping to help others less fortunate than ourselves.

Determined to show compassion for those around us and develop a community that embraces justice and peace.

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Implementation of our Science Curriculum

Teachers create a positive attitude to science learning within their classrooms and reinforce the expectation that all children are capable of achieving high standards in science. Science will be taught in planned topic blocks as detailed in the National Curriculum. Through effective planning, we include problem solving opportunities that allow children to develop their understanding and gain confidence to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. Teachers use precise questioning to test conceptual knowledge and skills and assess children regularly to identify those children with gaps in their learning. We build on the skills and knowledge developed in previous years and as their understanding increases, they become more proficient in selecting and using scientific equipment, collating and interpreting results and become increasingly more confident to draw conclusions based on real evidence.

The types of scientific enquiry we use include: observing over time, pattern seeking, identifying, classifying and grouping, comparative and fair testing (controlled investigations) and researching using secondary sources. We enable the children to use scientific language accurately and precisely and build this up throughout their school life. There are opportunities to apply their mathematical knowledge to their understanding of science, including collating, presenting and analysing data.

Impact of our Science Curriculum

The approach that we have taken at the Magdalen School results in a fun, engaging and high-quality science education, providing our pupils with the foundations for understanding the world. Research indicates that the ability to reason scientifically – by testing hypotheses through well-controlled experiments – is a strong predictor of later success in the sciences and that this skill can be developed through experiences that allow pupils to design experiments that require them to control variables and these are our aims for the children we teach. By broadening children's scientific view of the world around them, the children are able to explore, talk about, test and develop their ideas about everyday phenomena and the relationships between living things and familiar environments using scientific language. They will be able to 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. They will be able to draw conclusions to talk and write about what they have found out. By the end of Key Stage 2, children use their deeper understanding of a wide range of scientific ideas and recognise how these help us to understand and predict how the world operates. They also begin to recognise how scientific ideas change and develop over time.

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