



Science at Madginford Primary School



Our school values underpin our teaching of Science

Curiosity

A curiosity & an excitement to make discoveries and test ideas should lie at the heart of science, enabling children to make connections with the world around them and develop an understanding of the world in which they live.

Working Together

Children work collaboratively to explore key concepts through investigations where team work is an essential part of their learning. Skills are developed through working together.

Persevere

Children persevere, recognising when they might need to perform tests in different ways. They can make sense of their findings even when the experiments produce anomalies that they were not expecting.

Challenge

Children are challenged to devise their own scientific questions where they use their own knowledge of variables to support this. They evaluate the data collected and make decisions as to whether further investigation would be needed.

Independence

By the time they leave MPS, children will be able to demonstrate a range of scientific skills to a high level, which they can then apply when carrying out investigations. They use scientific vocabulary to explain their learning.

Equality

Children will study a range of scientists and their varying theories. They will respect each other and their findings.



Science's Big Ideas

- **Theories:** Coming up with ideas and thinking about how and why things happen underpins the big idea behind Science.
- **Questions:** Science is based on the idea that Scientists can develop theories. They then use these theories to develop questions to prove or disapprove their theory.
- **Investigations:** Having developed a question, based on variables, Scientists then carry out series of tests and investigations that produces results which can be carefully analysed.
- **Conclusions:** Scientists are able to look at results and explain what they show. This allows them to answer their questions and either prove or disprove their theory. It may prompt new theories that begin the cycle again.



Science's Key Skills

Use Scientific Skills

Scientists use key scientific skills (observing, classifying, planning, recording, evaluating) to carry out a range of investigation and experiments to answer scientific questions.

Understand key scientific concepts

Scientists understand the 'key concepts' linked to areas of Physics, Biology and Chemistry. These concepts are linked to the theories they develop.

Communicate scientific findings

Scientists look carefully at data that they collect and are able to state what the data is showing. They look for trends and patterns to provide evidence to answer key questions. Answering the key question helps to provide conclusions that can then be communicated and shared with others.

Understand Science's big ideas

Scientists understand and use Science's big ideas to help them develop & deepen both their subject knowledge & understanding of threshold concepts.



Content Organisation

In Early Years, Science is taught under the umbrella of 'Understanding the World' although aspects such as textures and healthy living appear in Expressive Arts and Physical development respectively.

The teaching of Science's big ideas is carefully planned & sequenced and across the school 'Developing Experts' is used. In both KS1 and KS2, Science is taught in blocks of knowledge that are linked to the key scientific skills. The skill aspect is repeated throughout the programme in order to enable children to develop these skills. Each year group works on different skills throughout the year at different levels, in order to ensure progression of the key scientific skills are firmly embedded.



Subject Pedagogy

Behaviour and Safety of Pupils

Children plan and conduct a wide range of experiments devised through their own questions around subject area. They demonstrate appropriate behaviour as part of the lesson in order to set-up experiments appropriately. They are able to identify possible risks and also control measures to minimise these.

Experiments

Children develop their knowledge and understanding through a series of experiments where they plan, test and evaluate using scientific skills.

Working Scientifically

Children have access to the world around them from an early age and their learning is fostered through their scientific skills. Early observational skills support the ability to compare and contrast in a meaningful way. Following this, children are taught to group and classify, research, record and investigate, looking closely for patterns and change.

Outdoor Learning

The outdoor learning environment is utilised to support the teaching and learning of Science.