



Science at The Meadows

"Anyone who has never made a mistake has never tried anything new." Einstein

Why do we teach science?



Wonder and curiosity are at the heart of our science learning at The Meadows. We provide our children with opportunities to explore and investigate how the world works and the scientific processes and concepts that underpin it. Exploration is encouraged through real-life and practical experiences, which also supports children to work cohesively with their peers.

At the Meadows, our aim is to encourage the development of an understanding and awareness of the world around us, how it works, how it impacts on us and how we impact on it. We believe a strong vocabulary is a key part of understanding the world and supports the acquisition of knowledge and skills in the scientific disciplines.

Our science curriculum begins in EYFS with a hands-on exploration of scientific equipment in answer of focus questions. This child-led exploration of scientific principles sparks children's curiosity and develops their interest in further exploring how the world works. These challenges begin to develop their skills in questioning, experimentation and observation.

As their science journey continues, our teaching equips our children with a sound knowledge of basic principles on which they build as they progress through the school. This progression begins with identifying, naming, describing and comparing and progresses through to being able to predict, explain and justify results of experiments.

We believe that science is an integral part of everyday life and we aim to ensure our children leave Year 6 understanding that their actions have an impact on our world.



By the end of Year 6, our children will have:

- A sound knowledge of the human body inclusive of how the digestive and circulatory system works.

- Knowledge of how to live a healthy lifestyle through diet and exercise in order to keep their bodies fit and healthy so that they can implement this within their own lives.
- An understanding of the structures of different types of plants/trees, what they need to grow and survive and at what time of year different plants/trees grow and why.
- Knowledge of different types of animals, their habitats, how they reproduce and categorise them based on a variety of different factors.
- The ability to handle and use different types of scientific equipment and be able to use it in an investigative manner.
- An inquisitive and curious approach to the world around them, and equipped to think scientifically about problems.
- A growing sense of responsibility for ourselves, our world and its welfare.

How do we teach science?

Our science curriculum runs on a one-year cycle so that all topics are covered in depth and it ensures that knowledge from previous years is **remembered and understanding is deepened**. Our curriculum follows a spiral learning process where learning from previous years is revisited at the beginning of each topic. This enables the children to remember key vocabulary and knowledge before building on this to develop and deepen their understanding of each one.



Each topic covered within a year has a medium-term plan which highlights the key vocabulary to be revisited and any new vocabulary that is to be learned. The medium-term plans also detail the knowledge that is to be imparted to the children and any linked memorable experiences that can be shared. These have included examining a real animal heart to build an understanding of its structure. We study science to provide our children with the opportunity to investigate the world around them and to learn how and why different things work. We encourage curiosity and respect.

We used real-life contexts, such as growing plants, watching shadows or building electrical circuits to embed the knowledge that the children need to know for that topic.

We invite experts in the scientific community in to talk to our children about real jobs that can be aspired to in science. For example, students from a robotics degree course visited to talk to our coding club about how computing and science can link in jobs to develop the children's science capital.

Knowledge children will acquire is clearly mapped. Learning is connected through key concepts, such as observation, and links are made with other subjects to make children's understanding more holistic and meaningful.

How do we measure success?

Our medium-term plans set out expectations for learning in each year group, and the specific knowledge children will learn at each stage.

At the end of each term, an assessment activity is carried out, which may be a quiz, vocabulary task or discussion, and this is used to assess children's progress. Misconceptions and any gaps in understanding are then addressed by teachers.

Our science leader supports staff in the assessment process and takes an overview of whole-school attainment.

Our science leader monitors the curriculum by reviewing children's work, visiting teaching sessions when possible and talking to staff and children about learning taking place. Assessments of children's understanding are completed during teaching sessions. As children gain new knowledge, and gain experience in using enquiry skills, achievements are celebrated and next steps in learning are identified.

When gaps in understanding are identified by teachers, children are given opportunities to review material and further teaching sessions may be planned. The subject leader reviews learning at the end of teaching units and adjustments made to sequencing of content or priority specific objectives are given in the light of children's progress.

We know children have achieved objectives when they can remember key information and use this to explain their understanding. We know that children have developed deeper understanding when they can apply their knowledge in different contexts and use it to solve problems.



Planning for Learning

