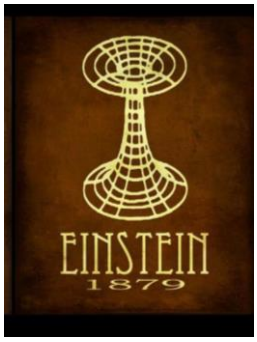
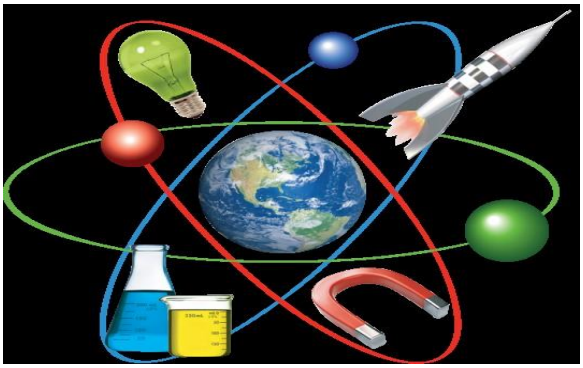
Moorside Primary School

Science





Intent, Implementation, Impact

Intent

At Moorside Primary School we are committed to providing a curriculum with breadth and depth that allows all of our children to learn, understand and apply a range of knowledge and skills with confidence and security.

We value science and provide a high quality science education that provides children with the foundations they need to recognise the importance of science in every aspect of daily life. We want our children to appreciate how science has changed the lives of human beings and know that it is vital to the world's future prosperity. Therefore, all children will be taught essential aspects of the knowledge, skills, methods, processes and uses of science.

Through building up a body of key foundational knowledge, skills and concepts, children should be encouraged to develop a sense of excitement and curiosity about natural phenomena. Children are encouraged to explore the key work of scientists who have changed the world forever and are provided with inspiring knowledge and skill based, progressive curriculum that enables curiosity and critical thinking and learning.

Our science curriculum encourages children to become enquiry based learners, collaborating through researching, investigating and evaluating experiences. It will provide opportunities for the critical evaluation of evidence and rational explanation of scientific phenomena as well as opportunity to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding. All aspects of 'Working Scientifically' from the National Curriculum are interwoven throughout our curriculum, to ensure that children understand what it means to be a successful scientist.

Implementation

Science is taught weekly, with a new area of study being covered half termly. We ensure Science is given the same importance as all other areas of the curriculum, including the core subjects, with an equal value. It is important that children gain and master a variety of skills and knowledge, enabling them to become successful scientists.

A variety of teaching approaches are used and are based on the needs of individual children following continuous assessment for learning. Key knowledge and skills has been identified for each area of study to allow for progression and consolidation for each child. Our progression documents ensure that the pitch of lessons delivered is appropriate and that intentions taught are sequential with opportunities given for repetition.

Early years and Foundation Stage

EYFS follows the 'Development Matters guidance', which aims for all children to have an 'Understanding of the world'. In nursery, children will learn to use all of their senses in hands on exploration of natural materials. They will explore collections of materials with similar or different properties. They will be modelled how to talk about what they see, using a wide range of vocabulary.

Children in nursery will be provided with opportunities to explore the care needed to grow plants as well as identifying the key features of the life cycle of a plant and an animal. In reception, children will continue to develop and build upon their understanding of the world by exploring the natural world around them. They will continue to build upon their ability to describe what they can see, hear and feel whilst outside. Children in reception will recognise environments that are different from the one in which they live. Within children's learning in EYFS, they will be immersed in the rich vocabulary of science and it will be modelled effectively to ensure children can use and apply it appropriately.

In line with the National Curriculum 2014, the curriculum at Moorside Primary aims to ensure that all children from Year 1 to 6 embed a range of scientific skills. The curriculum ensures that these scientific skills are repeated and revisited throughout each study area. This allows for a deeper understanding of scientific skills in a broad range of science areas.

Through revisiting and consolidating skills, our curriculum and resources help children build on prior knowledge alongside introducing new skills and challenge. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding. This vocabulary is then included in our vocabulary displays to ensure that children are allowed opportunities to repeat and revise this knowledge. Children are taught the meaning of and encouraged to use subject specific vocabulary in all lessons, this may be in writing or verbally.

Speaking and listening opportunities are effectively planned for within each lesson to develop the children's confidence in being able to discuss their scientific study and investigations in detail. Children are able to share their opinions and make informed observations. They can discuss their understanding about how science and scientists have changed the world.

Outcomes of teaching and learning are evident in the half termly and medium term overview plans. These detailed plans provide a consistent approach and direction for staff to plan effective opportunities to turn short term memory into long term memory. This ensures a secure embedding of knowledge, skills and understanding. Such outcomes of learning are regularly monitored to ensure that they reflect a sound understanding of the key identified knowledge. This is through book scrutiny, child voice and data analysis.

Effective Continuous Professional Development (CPD) is provided in house and through wider connections and professionals. Within the schools group teaching approach, targeted support enables children to develop at their own pace and to learn in a style that best suits their individual needs. Key strategies are designed to support children with Special Educational Needs and Disability (SEND) to access their learning well.

Opportunities for cross-curricular learning and curriculum enrichment are well planned for. Links are established where appropriate and opportunities for writing, reading and maths are exploited. The local area is also fully utilised to achieve the desired outcomes, with extensive opportunities for learning outside the classroom embedded in practice. Our school group teaching approach allows us to deliver pitch appropriate lessons to all therefore ensuring appropriate support, scaffolding, challenge and resources utilised effectively.

Links with the Life Science Centre allows for further curriculum enrichment, where children are able to put into practise their knowledge and skills in a different environment to deepen their scientific understanding of different areas.

Impact

The successful approach to the teaching of science at Moorside Primary School will result in a fun, engaging, high quality science education that provides children with the foundations for understanding the world that they can take with them once they complete their primary education.

Children at Moorside Primary School will:

- Demonstrate a love of science and an interest in further study and work in this field
- Retain knowledge that is pertinent to Science with a real life context.
- Be able to question ideas and reflect on knowledge.
- Be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich vocabulary linked to science.

- Demonstrate a high love of mathematical skills through their work, organising, recording and interpreting results.
- Work collaboratively and practically to investigate and experiment.

The impact of the school's science curriculum is measured through several means:

- Clear and reliable baselines for all children across all subjects.
- Outcomes for children at the end of every academic year.
- Progress and attainment data for all year groups throughout the academic year.
- Formative and summative assessment data.
- Levels of engagement in enrichment activities.
- Children's voices and views.
- Parent/carer meetings.
- On-going observations and monitoring.
- On-going CPD for teaching and support staff.
- Timely reviews of the impact of interventions.
- Science book and planning scrutiny.