Science Policy

Adopted: Spring 2023
Review: Spring 2026

INTENT

Meadgate Primary School aims to deliver a stimulating and varied science curriculum which promotes the skills of scientific thinking and enquiry necessary for children growing up in a technologically advanced world. We believe that our children should not only reach their best academically, but also develop a thirst for knowledge, foster a love of learning and leave our school with exceptional independent learning skills. The children of Meadgate Primary School are happy learners who work hard to reach the challenges set by their teachers. Excellent teaching and learning opportunities allow children to be successful in a creative, safe, calm environment where classrooms and other learning spaces promote creativity and high aspiration. Children are encouraged to find their 'stretch zone', avoid 'coasting' and so maximise progress.

Science is a practical subject. Science stimulates and excites pupils' curiosity about the world around us. It provides explanations as to how the world works. It is based on observable, measurable and repeatable processes. Because science links direct practical experience with ideas, it can engage learners at many levels. The explanations obtained by experimental evidence and modelling are based on methods and defined approaches. Increasing pupils' knowledge and understanding of the world goes alongside developing skills associated with Science as a process of enquiry which develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

Scientific enquiry is also aimed at encouraging learners to apply their knowledge to the implications of a changing future world in which science raises implications for the future of our planet and our place within the universe. So our aim is for our learners to be equipped with the scientific knowledge required to understand the uses and implications of Science, today and for the future.

Children have weekly lessons in Science throughout Key Stage 1 and 2, using various programmes of study and resources. In Early years, science is taught through the children learning about the world around them in their learning through play. Additional opportunities are provided in Science, such as curriculum enrichment days, Science fairs in school and educational visits linked to the science curriculum, such as a visiting inflatable planetarium.

At Key Stage 1 pupils observe, explore and ask questions about living things, materials and physical phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They begin to evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share ideas and communicate them using scientific language, drawings, charts and tables with the help of ICT if it is appropriate.

At Key Stage 2 pupils learn about a wider range of living things, materials and physical phenomena. They make links between ideas and explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They develop a respect for the materials and equipment they handle with regard to their own, and other children's safety. They talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, graphs and ICT to communicate their ideas.

The National Curriculum provides a structure and skill development for the science being taught throughout the school which is now linked, wherever possible, to the theme topics to provide a creative scheme of work which reflects a balanced programme of study. Throughout the primary curriculum here at Meadgate Primary School, children's scientific vocabulary and language is built up in a cross-curricular way by for example approaches to spelling, distinguishing between verifiable fact and opinion, and effective questioning of knowledge.

IMPLEMENTATION

Teachers at Meadgate Primary School will deliver progressive and challenging lessons appropriate to the children's age and ability which have high expectations of children's achievement. Teachers will create a

positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Consideration will be made of knowledge organisers to outline knowledge (including vocabulary), a cycle of lessons which carefully plans for progression and depth and a low-stakes quiz to assist future planning. Practical science learning and exploring what-happens-when will be put in front of teacher-led whole-class sessions. Older children will be encouraged to organise their learning around What We Used (equipment), What We Did (method), What We Found (results) and What This Proves (conclusion).

Problem solving opportunities allow children to find out for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children progress. Curiosity is celebrated within the classroom.

Through our planning, we build upon the learning and skill development of previous years. As the children's knowledge and understanding increases and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence. Skills to do with working scientifically are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts when possible.

We maintain a high level of subject knowledge of science in our school by regular training and professional development. In our school we review our policies and practice in the light of our school development plan and current priorities.

IMPACT

Our Science Curriculum is high quality, well thought out and planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:
 A reflection on standards achieved against planned outcomes (KPIs);
 Feedback from teachers has impact on our pupils, often with next step questions to push learning on;
 There is a clear progression of children's work and teachers' expectations in our school;
 Standards in science at the end of the key stages are good and issues arising are addressed effectively in school following analysis of group performance (girls and boys, PPG, etc);
 Teachers' judgements are moderated internally and externally at Science cluster meetings within the Academy;
 Children are becoming increasingly independent in science, selecting their own tools and materials, completing pupil lead investigations and choosing their own strategies for recording;
 Celebrating learning for each term which demonstrates progression across the school;
 Tracking knowledge in pre- and post- learning quizzes;
 Children's work shows a range of topics and evidence of the curriculum coverage for all science topics.
 Pupil discussions about their learning;
 Our SLT and governors are kept up to date with developments in the way science is run in our school with subject reports, action plans and review meetings.

High-quality science education at Meadgate results in a fun, engaging curriculum which provides children with the foundations for understanding the world. Children enjoy and are enthusiastic about science in our school. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Through various workshops, trips and interactions with experts and local charities and museums, children develop the understanding that science has

changed our lives and is vital to the world's future. Children learn about possibilities for careers in science as a result of our community links and connection with national agencies such as the STEM association.

Role of the Subject Leader

The coordinator's responsibilities are:

- To ensure a full range of relevant and effective resources are available to enhance and support learning.
- To ensure progression of the key knowledge and skills identified within each unit and that these are integral to the programme of study and secure at the end of each age phase.
- To monitor books and ensure that key knowledge is evidenced in outcomes, alongside and as supported, by SMT
- To monitor planning and oversee the teaching of science
- To lead further improvement in and development of the subject as informed by effective subject overview
- To ensure that the science curriculum has a positive effect on all pupils, including those who are disadvantaged or have low attainment
- To ensure that the science curriculum takes account of the school's context, promotes children's pride in the local area and provides access to positive role models from the local area to enhance the science curriculum
- To ensure that approaches are informed by and in line with current identified good practice and pedagogy

Parents (Including Homework)

At Meadgate Primary School we actively encourage the involvement of families and the wider community to help support the teaching of science. Parents and carers are involved with supporting their children through topic based homework.