Mere Brow C of E Primary School.
A Policy for Science

Intent

At Mere Brow CE primary, we believe that teaching and learning in Science should stimulate and excite children's curiosity about the world around them. It provides first hand experiences and support for children to develop enquiring minds, learning how to question and discuss science through collaboration. Starting from the views already held, children are given the opportunity to have their views challenged, to change their views and ultimately improve their understanding. A planned range of practical experiences set in meaningful contexts helps to develop a range of investigative skills and allows children to take risks and learn from their mistakes, developing them into independent learners.
The staff at Mere Brow CE Primary, ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

The national curriculum for science 2014 aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Implementation

The Science curriculum at Mere Brow CE Primary School is based upon the 2014 Primary National Curriculum in England, which provides a broad framework and outlines the knowledge and skills taught in each Key Stage.

When teaching Science, teachers should follow the children's interests to ensure their learning is engaging, broad and balanced. Before planning a unit of work, teachers should assess children's prior knowledge and understanding to ensure work is pitched at the correct level. A variety of teaching approaches are used based on the teacher's judgement.

Teaching key subject specific vocabulary is also a key part of our science curriculum. The vocabulary children will need for that unit are displayed in the classroom and builds upon the vocabulary they have learnt in earlier years. The key vocabulary will be identified in the vocabulary on the children's knowledge organisers.

Science is taught in discrete weekly lessons. Approximately 2 hours per week is spent on science during KS2 and 1 ½ hours per week at KS1 We ensure that teachers have the same expectations during Science lessons that they would have when teaching English or Mathematics and that any mathematical task (such as measuring or drawing graphs) is pitched at an age-appropriate level to ensure sufficient challenge. It is vital that any mathematical or English barriers should not impede a child's scientific learning, thus meaning dialogue learning is a central part to our science teaching

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand. Pupils will be taught to use practical scientific methods, processes and skills through the teaching of the programme of study content: These will include:

- asking simple questions and recognising that they can be answered
- in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning.

Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.

In EYFS we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant

contribution to developing a child's understanding of the world. The EYFS have a designated outdoors science investigation area.

Homework is used to support science through tasks such as

- finding answers to questions posed in school through the use of books (libraries) and interviews with friends and family and making observations.

Feedback to pupils about their own progress in science is achieved through the marking of work. Effective marking

- is usually done while a task is being carried out through discussion between children and teacher
- aims to help children learn by encouraging them to think critically about what they have achieved

of written work is used sensitively and with discretion so that a child can assimilate a limited number of corrections at one time - this will vary according to age and ability

Impact

The impact and measure of this is to ensure children not only acquire the appropriate age related knowledge linked to the science curriculum, but also skills which equip them to progress from their starting points, and within their everyday lives.

All children will have:

A wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
A richer vocabulary which will enable to articulate their understanding of taught concepts.
High aspirations, which will see them through to further study, work and a successful adult life.

ICT/Home learning
To give pupils opportunities to use ICT (video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies.
To give pupils the chance to obtain information using the internet. Teachers can set tasks or activities on Seesaw so that if a child cannot come into school for any reason they can access the day's learning easi

Equal Opportunities

All pupils, regardless of race, colour, or gender have access to all of the Science National Curriculum provision at Mere Brow Primary School.

Assessment

We use assessment to inform and develop our teaching.
Units commonly begin with an assessment of what children already know.
We assess for learning (AFL). Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.
We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved.
Assessment records are reviewed annually.
We have a tracking system to follow and accelerate children's progress.
The school science coordinator monitors progress through the school by sampling children's work at regular intervals.
We use assessment to inform and develop our teaching. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.

Reporting to parents is a written report (July) and at parents' evening. The reporting to parents will focus on each child's attitude to science and especially progress in 'working scientifically'.

Strategies for the Use of Resources

- Central resources in science are the responsibility of the science coordinator. They include
- sets of scientific instruments likely to be used sporadically by each class, such as pooters, magnifiers, stop clocks, spring balances
- The library houses a substantial stock of books on science based subjects and is used regularly for reference.

CONSIDERATION OF HEALTH AND SAFETY ISSUES IS OF THE UTMOST IMPORTANCE IN SCIENCE.

Children are taught the

- appropriate handling of equipment and materials

- appropriate storage of equipment and materials.

Reference should be made to the School's Health and Safety policy, with especial reference to the document "Be Safe".

Monitoring and review

The science subject leader is responsible for monitoring the standard of the children's work and the quality of teaching in geography. The geography subject leader is also responsible for supporting colleagues in the teaching of geography, for being informed about current developments in the subject, and for providing a strategic lead and direction for the subject in the school.

Signed: Caroline Cocker

Science Co-ordinator

Autumn 2020

It was approved by the Governing body _____

This policy will be reviewed in the Autumn of 2022

Appendix.

Centrally held resources.

Magnifiers
Magnets including electro magnets
Mirrors
Prisms
Slides
Flexlight
Stethoscope
Tuning forks
Candles
Nets
Filter papers
Energy pack
Microscope
Pond dipping and insect collecting equipment
compass
Iron filings
Motors
Bulbs
Wires
Videos