Holland Moor Primary School

Science Policy

Developing Experts

Rationale:

At Holland Moor, it is our intention to recognise the importance of identifying the impact Science has in every aspect of our daily lives. We give the teaching and learning of Science the stature and weighting it requires within the curriculum and wider community of the school. The Science journey at Holland Moor is intended to increase the substantive knowledge of the pupils allowing them to build schema, understanding and make scientific links in the world around them. Furthermore, we advance the development of disciplinary knowledge of science, year on year, as a process of enquiry and investigation. Throughout the year, all five areas of scientific enquiry are interleaved throughout the year to supplement the knowledge being taught. We aim to deliver the Science curriculum in a way that it will naturally increase the curiosity of the children, encourage an understanding and respect for the living and changing world around them, and provide the children with an opportunity to explore the opportunities Science provides. We want children at Holland Moor to better understand the world around us, be able to use their scientific schema to be able to explain phenomena and have the ability to investigate and as enquiry based learners.

Aims:

The national curriculum for science 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.

Science Curriculum:

Key Stage 1:

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe key aspects of science in the world around them, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

Lower Key Stage 2

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday science and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out. 'Working scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage 2

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings. 'Working and thinking scientifically' is described separately at the beginning of the programme of study, but must always be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content. Pupils should read, spell and pronounce scientific vocabulary correctly.

Assessment and Recording in Science

Assessment for learning is continuous throughout the planning, teaching and learning cycle. Formative assessment is used to guide the progress of individual pupils in Science. It involves identifying each child's progress in each area of the Science curriculum, determining what each child has learnt and what therefore should be the next stage of learning. Teachers carry out formative assessment through specific questioning techniques. Suitable tasks include: Small group discussions, usually in the context of a practical task, specific arrangements for particular pupils, individual discussions in which children are encouraged to approve their own work and progress. A whole school summative assessment system allows for the following of children's progression in science. Teachers use data to plan and teach the appropriate next steps for each cohort. The school science leader monitors progress through the school by sampling children's work and analysing results from end of term data and assessments. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported. It is the responsibility of the science subject leader and Senior Management Team to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the

teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school.

Health and Safety

When working with science equipment and materials during practical activities teachers should ensure that children understand the hazards and learn how to control them, ensuring the safety of themselves and others.