

Leyburn Primary School

Intent:

'A high quality science education provides the foundations for understanding the world'

Science teaching at Leyburn Primary Schools aims to foster a thirst for knowledge and to promote the natural curiosity of the children. We encourage every child to be a scientist, not just in their science lessons, but in the wider world too, through use of our school grounds and the local area. We aim to provide a broad range of scientific experiences which allow them to develop skills which are transferable across the whole curriculum, which in turn helps them to know more and remember more.

Our aims are to fulfil the requirements of the National Curriculum for science for every child by:

developing scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics

developing 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

utilising our local context to make learning experiential wherever possible

equipping them with the scientific knowledge required to understand the uses and implications of science, today and for the future.

How are British Values taught through science?

Individual liberty of own views, tolerance and mutual respect of others' views is taught through the topics where different views / ethics are involved, for example work in Upper Key Stage 2 on the theory of evolution. Pupils develop an awareness of health & safety for themselves and others when working practically. Pupils are taught the social skills around behaviour self-regulation to ensure collective responsibility for a safe and efficient working environment. They are taught to challenge each other's behaviour or practices if they fall short of the collective expectations of the group. These values are also encouraged in the day to day teaching and learning through showing respect for different viewpoints and ideas as well as in the ability to work effectively together both individually and in groups.

Implementation

In our science lessons, the children are taught how to explore the world through:

- practical experience
- planning, hypothesising, and predicting.
- designing and carrying out investigations.
- interpreting results.
- drawing inferences
- communicating their findings.

In Early Years Foundation Stage (EYFS) our children start to gain the science knowledge that they'll build on throughout their primary school years, such as developing their skills of observation, prediction, critical thinking and discussion. In KS1, children continue with this experiential approach to science and use our local environment to facilitate their investigation. Learning is blocked and children complete a range of practical and paper-based activities across the five types of scientific enquiry.

In KS2, children have become established as scientists and are able to draw upon a range of strategies to carry out experiments and conduct tests. They further develop their use of scientific equipment and become familiar with the different types of scientific enquiry. The topics which they learn are delivered in blocks so that children are immersed in the learning.

The working scientifically strand of the national curriculum is tightly woven into our science lessons; and is built in progressively using our progression in working scientifically document. Children are given many opportunities in each topic to work scientifically, using the school grounds and local area where possible, and these skills are built upon as children progress through the school.

Staff use progression documents to plan their science lessons which enables them to build upon and refer to prior knowledge in every science session. Significant scientists which have been chosen to represent a diverse range of backgrounds, including BAME and LGBTQ+, are covered in each theme.

We plan units of work that will challenge and extend prior knowledge in order to construct a secure, new understanding of substantive knowledge. In addition to this, disciplinary knowledge is developed through scientific enquiry and exploration. Prior knowledge is revisited before introducing new ideas, and misconceptions are actively diagnosed and discussed through low-stakes assessments. These assessments are used at the end of a block of learning as one way of gauging whether children know more and remember more. British values are planned into each unit of work to ensure opportunities to promote these are optimised.

Impact

Our curriculum has been planned to have high expectations of all learners and demonstrate coherence and progression. If children are assessed to be achieving the lesson aims, then they are deemed to be making good or better progress. We measure the impact of our curriculum through work scrutiny, pupil discussions and a reflection on standards achieved against the planned outcomes.