

Science at Northill

We recognise how science impacts every aspect of daily life, and without science humankind would not have made progress throughout history. As one of the core subjects taught at primary level, we give the teaching and learning of science the prominence it deserves. Learning science is concerned with increasing pupils' knowledge of our world, and with developing skills associated with science as a process of enquiry. Our science curriculum develops the natural curiosity of each child, encourages them to have respect for living organisms, and instils in pupils the importance of caring for the natural environment.

To support the teaching and learning in science, we make use of the Pzaz Scheme of Work. This has been developed by a specialist teacher, provides quality resources for children, as well as videos for teachers to develop their knowledge and pedagogy.

Science Lessons

Using the requirements of the Science National Curriculum as our guide, our Science lessons offer opportunities for children to:

- Develop scientific knowledge and conceptual understanding of the disciplines of Physics, Chemistry and Biology.
- Formulate their own questions about the natural world.
- Foster the confidence to 'be wrong' when it comes to making predictions and postulating their own theories.
- Promote an awareness of the importance of teamwork in scientific experimentation.
- Practically investigate their questions using various methods of enquiry.
- Gain competence in the science skills of planning scientific investigations, gathering and analysing data and critical evaluation of investigations across the disciplines.
- Use a range of methods to gather data from investigations and secondary sources including I.C.T., drawings, diagrams, videos and photographs.
- Present data in a variety of methods including tables, bar charts, line graphs, pictograms and pie charts.
- Produce comprehensive science reports that demonstrate their proficiency in the scientific method.
- Have care for the safety of all individuals in lessons by developing knowledge of the hazards of the materials and equipment they handle, along with mitigating these hazards.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.

Children have weekly lessons in Science from Year 1 to Year 4, which last for approximately one hour. In Early years, science is taught through the children learning by play. Additional opportunities are provided in Science, such as extra-curricular clubs or links with other curriculum areas.

We endeavour to ensure that the Science curriculum we provide will give children the confidence and motivation to continue to further develop their skills into the next stage of their education and life experiences.

Implementation

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children can achieve high standards in science. Teaching is set out thus:

- Science will be taught as set out by the year group requirements of the National Curriculum. This is a strategy to enable the accumulation of knowledge and allows progress in repeated topics through the years.
- Pupils will concentrate on one science skill per full term. Term 1 will be dedicated to planning investigations, Term 2 to results gathering and analysis, and Term 3 will be spent evaluating practical work. Although each skill is related and there are links between them, there is minimum crossover as they are taught, so each becomes firmly embedded.
- Through our planning, we involve problem solving opportunities, allowing children to find out for themselves how to answer questions in a variety of practical means. Children are encouraged to ask their own questions and be given appropriate equipment to use their scientific skills to discover the answers.
- Engaging lessons are created with each lesson having both practical and knowledge elements. Teachers use precise questioning in class to test conceptual knowledge and skills and children are regularly assessed to identify those children with gaps in learning, so that all children keep up.
- 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 and using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are explicit in 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 theme of the lesson.
- 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 and workshops with experts.