

St Ethelbert's Intent, Implementation and Impact - Science

Intent

At St Ethelbert's School we recognise and value the importance of science and scientific enquiry and aim to develop in all young people a lifelong curiosity and interest in the sciences in every aspect of life. We intend for children to have the opportunity, wherever possible, to learn through varied systematic investigations, leading to them being equipped for life to ask and answer scientific questions about the world around them.

Throughout the individual programmes of study, our children will build on their skills in working scientifically, as well as on their scientific knowledge, as they develop greater independence in planning and carrying out fair and comparative tests to answer a range of scientific questions.

The desired outcome will be that they can apply their knowledge of science when using equipment, conducting experiments and investigation, building arguments and explaining concepts confidently, being familiar with scientific vocabulary and, most importantly, to continue to ask questions and be curious about their surroundings. They will then be able to use these learnt skills to make many cross-curricular links, especially in the areas of Maths and Design and Technology.

Implementation

The acquisition of key scientific knowledge is an integral part of our science lessons enabling our children to learn and retain the important, useful and powerful vocabulary and knowledge contained within each unit. The progression of skills for working scientifically are developed through the year groups and scientific enquiry skills are of key importance within lessons and teachers will demonstrate how to use scientific equipment and the various 'Working Scientifically Skills' in order to embed scientific understanding. The progression of these skills is set out in the Science Progression Map. Each lesson has a clear focus. Scientific knowledge and enquiry skills are developed with increasing depth and challenge as children move through the year groups. They complete investigations and hands-on activities while gaining the scientific knowledge for each unit.

Interwoven into the teaching sequence are key assessment questions, identified in green on lesson plans. These allow teachers to assess children's levels of understanding at various points in the lesson. They also enable opportunities to recap concepts where necessary. The sequence of lessons helps to embed scientific knowledge and skills, with each lesson building on previous learning. There is also the opportunity to regularly review and evaluate children's understanding. Activities are effectively differentiated so that all children have an appropriate level of support and challenge. Our detailed lesson plans include adult guidance to ensure that teachers are equipped with secure scientific subject knowledge, enabling them to deliver high-quality teaching and learning opportunities while making them aware of possible scientific misconceptions. We will also focus on our environment outside of school using the natural resources – parks, wildlife areas and beaches – to support and reinforce learning. Through enrichment days, such as 'Science week', outside visits and visits from experts we will enhance the learning experience and promote the profile of Science allowing time for our children to freely explore scientific topics.

Impact

Within science, progress is measured through a child's ability to know more, remember more and explain more. Our science curriculum is high quality, well thought out and is planned to demonstrate progression. The impact of using the full range of resources included in the science unit will also be seen across the school with an increase in the profile of science. The learning environment across the school will be more consistent with science technical vocabulary displayed, spoken and used by all learners.

We will measure the impact of our curriculum through the following methods:

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- Assessing children's understanding of topic linked vocabulary throughout each unit
- Children complete cold and hot mind maps
- Marking of written work in books to coincide with summative assessment of pupil discussions about their learning.
- Images and videos of the children's practical learning.
- Interviewing the pupils about their learning (pupil voice)
- Teacher assessment of their pupils at the end of every unit
- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for a dialogue between teachers to understand their class's work
- Formal reporting of standards at the end of each Key Stage and annual reporting of standards across the curriculum to parents

Whole-school and parental engagement will be improved through the use of science-specific home learning tasks. Children who feel confident in their science knowledge and enquiry skills will be excited about science, show that they are actively curious to learn more and will see the relevance of what they learn in science lessons to real-life situations and also the importance of science in the real world.

