



Science Curriculum Statement

Intent

Our science curriculum has been specifically tailored to meet the unique context of our schools. It is designed to be broad and balanced, providing all pupils with the opportunity to master their learning and deepen their knowledge, making sense and giving purpose as to why we learn about science. Teachers will provide pupils with challenging big questions about science, which will help them change and transform our society, putting their faith into action.

The philosophy for delivering a broad and balanced approach that delivers all aspects of the subject

At St Patrick's and St Edmund's we recognise the importance of Science in every aspect in daily life, as one of the core subjects taught in our schools, we give teaching and learning of Science the prominence it requires. We believe that Science helps to develop pupil's curiosity in the natural world. We aim to promote and equip children with the knowledge, skills and understanding of the world and their place in it. We encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

The key strands of the subject that pupils will learn through the school's age-related expectations

We aim to build high levels of competence in scientific knowledge and conceptual understanding through working scientifically in:

- Biology
- Chemistry
- Physics

Implementation

How learning is structured, organised and resourced

Science is taught weekly through the framework of the 2014 National curriculum. The principles and content of its requirements have been carefully placed at the heart of the schools' programmes of study in science.

We follow a curriculum overview based on a yearly cycle of topics. Teachers in each year group from both schools plan scientific topics together. This enables colleagues to share ideas, their curriculum strengths and resources. These plans are closely linked to the school's Age Related Expectations (AREs) in science for each year group which allows a consistent application of the curriculum throughout the Key stages. Through our planning we involve problem solving opportunities that allow children to find out for themselves, children are encouraged to ask questions and given opportunities to use scientific skills to research and develop their own answers.

A curriculum coverage file is kept for each cohort. This enables both class teachers and the subject leader to monitor coverage and identify progress made throughout the lifetime of a cohort in the school. Teachers provide opportunities for children to experiment practically to address the 'working scientifically' strand. This is evidenced through floor books.

A whole school system is used which links the ARE to each child's own research and classroom studies and assessment.

This is done through:

- **Title Pages** with key vocabulary and 'I cans' taken from the schools ARE's in the curriculum coverage files.
- **Knowledge organisers:** an introduction to the topic and to develop prior learning.

- **What I know grids:** used as a prior learning, monitoring and assessment tool.
- **Sequence of work:** which includes WALTs and success criteria to build mastery and challenge questions to develop greater depth and critical thinking through aspects of SMSC.

Resources

This system is greatly enriched through cross-curricular studies and by visiting and accessing libraries, museums and places of significant scientific interest both in and around our school, city and its surrounding areas. We use On-line resources, computer science and practical investigation equipment which are a very useful addition to classroom based resources. Teachers have access to a central store of both primary and secondary resources which support enquiry skills developed through class based investigations.

How pupils' learning and progress is assessed

Assessments are carried out in various forms.

As science is a core subject children complete GL assessments at regular intervals throughout the year. These tests assess their level of understanding and allow teachers to address gaps within the children's knowledge. In addition to this, teachers monitor development through Working Scientifically using floor books, questioning and through investigation.

Others assessment forms are:

- Quizzes, information leaflets, and fact files.
- PowerPoints
- 'What I know' grids.

Outcomes from these are used to inform the assessment of science at the end of the academic year. Children are evaluated as either, Working towards Standard, at the Expected Standard or Greater Depth Standard. These assessments and outcomes are an invaluable tool for the subject leader to measure the impact of the current system. This combined with other forms of monitoring help to inform the subject leaders Position Statement and Action Plan in science for the following school year.

Impact

The knowledge, skills and concepts that pupils gain from learning the subject.

A high quality of scientific education aims to develop a range of investigation and problem-solving skills that are transferable to other curriculum areas, particularly Geography, Mathematics and English. The children learn through varied and first hand experiences of the world around them.

Children will:

- Acquire and effectively use new vocabulary.
- Build skills that enable them to collect, analyse and interpret a range of data gathered through practical investigation.
- Interpret a range of sources of scientific information, including reports, theories, diagrams, images and investigations.
- Develop research, interpretation and presentation skills which can then be disseminated using ICT, Art and Design and Mathematic mediums.
- Develop a respect for the materials and equipment they handle with regard to their own, and other children's safety.

We seek to inspire in children a curiosity and fascination about the world which will remain with them for the rest of their lives; to promote children's interest and develop an enthusiasm and enjoyment of scientific learning and discovery. Children have the understanding that science has changed our lives and that it is vital to the world's future prosperity.