SAINT
OSWALD'S
CATHOLIC PRIMARY SCHOOL

Love, Learn, Respect and Appreciate

Science Policy
2022 – 2023

Science Policy		
Approved by	Governing Body	October 2022
Next Review due	October 2023	

At St Oswald's Catholic Primary School we aim to 'touch the future' with our exciting Science curriculum. Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level.

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The aims of science are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including computers, correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.

Teaching and learning style

We use a variety of teaching and learning styles in Science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use computing in science lessons where it enhances their learning. They take part in role-play and discussions and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in 'real' scientific activities using our outdoor classroom and areas for real life experiences.

We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- setting common tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty.
- scaffolding learning with teaching assistant support.

Science Curriculum Planning

The school follows the Science National Curriculum. We use the programmes of study for science for each year group as the basis of its curriculum planning. The topics have been adapted to the local circumstances of the school in that we make use of the local environment in our fieldwork and we choose a locality where the physical environment differs from that which predominates in our immediate surroundings.

We carry out our curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. The Science subject leader works this out in conjunction with teaching colleagues in each year group. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study Science as a discrete subject.

Our medium-term plans, give details of each unit of work for each term. Key stage 1 follow the key stage one programme of study for Year 1 and 2, Years 3 and 4 follow the lower KS2 programme of study and Years 5 and 6 follow the upper KS2 programme of study. The topics in Science are taught so that they build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the Science scheme of work, so that the children are increasingly challenged as they move up through the school from Reception to Year 6.

Foundation Stage

Science is taught through the 'Understanding the World' area of the Early Years Foundation Stage curriculum. The EYFS Statutory Framework 2021 is followed and Development Matters 2021 non statutory guidance is used to support the curriculum. Scientific learning is taught through adult led group activities and science skills are developed in both the indoor and outdoor provision.

Scientific learning opportunities are developed through:
-play and exploration to learn new concepts
-asking questions about what they find out
-observing processes
- encouraging curiosity
-talking about what they see, hear or feel .

The EYFSP (Early Years Foundation Stage Profile) is completed for each child at the end of EYFS. They are assessed against the 17 Early Learning Goals of which 'The Natural World' contains their Science related knowledge, understanding and skills.

The Contribution of Science to Teaching in Other Curriculum Areas

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, SPAG and speaking and listening. Some of the texts that the children study are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

Mathematics

Science contributes to the teaching of Mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

Computing

Children use Computing in Science lessons where appropriate. They use it to support their work in Science by learning how to find, select, and analyse information using various programs. They are given opportunities to present and interpret data and to review, modify and evaluate their work and improve its presentation.

Personal, Social and Health Education (PSHE)

Science makes a significant contribution to the teaching of Personal, Social and Health Education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They organize campaigns on matters of concern to them, such as helping the poor or homeless. Science promotes the concept of positive citizenship.

Spiritual, Moral, Social and Cultural Development

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of Science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how Science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Teaching Science to Children with Special Needs

We teach Science to all children. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. Teachers adapt their plans to provide rich learning opportunities to provide learning opportunities that are matched to the needs of children with individual needs. Our work in science takes into account the targets set in the children's Individual Education Plans (IEPs).

Assessment and Recording

We assess children's work in Science and their scientific knowledge by using our Assertive Mentoring assessments. Pupils complete a test at the end of each term to assess their knowledge and understanding and where possible they also complete a practical activity to build up their knowledge of planning practical experiments. This allows the teacher the opportunity to observe carefully how individuals learn scientifically. This knowledge is then used as part of six criteria marks which are included in an overall Science mark. These marks inform the Teacher of progress throughout the year towards meeting the standard for each stage.

Resources

Science resources are kept in a central area of the school. These resources are audited each year and new equipment bought whenever necessary. The library contains a good supply of Science topic books and computer software to support children's individual research.

Health and Safety

The general requirement for health and safety applies in this subject**.** Each unit considers aspects of health and safety and risk assessments are carried out where and when necessary.

Monitoring and Review

It is the responsibility of the Science subject leader 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, informing about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The Science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.