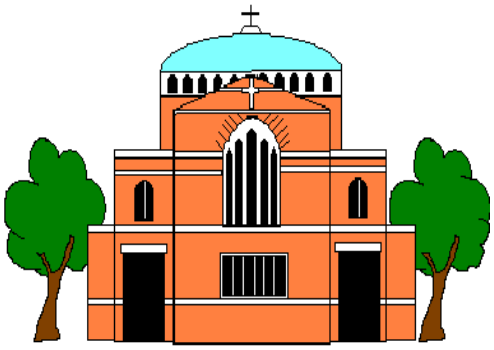
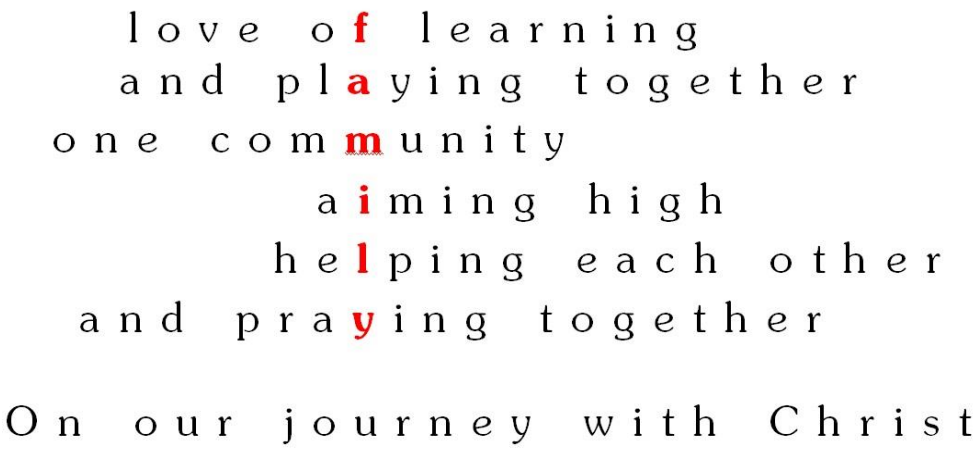


St John's Catholic Primary School

Science Policy

Mission Statement



The aim of this policy is to guide teachers and support staff in providing the best possible learning experiences for our children. We believe that every child is a child of God; we will encourage in all children the knowledge and love of God, and in a concern and care for others; we will value each child for who they are and what they are; and we will ensure that every child has the opportunity to become the person God knows them to be, irrespective of their starting points, background or cultural and religious beliefs.

Our mission sets out our commitment to 'aiming high'. Improvements in the quality of teaching and learning are brought about through a process, which involves:

- reflection by individual professionals
- acting on planning feedback and guidance
- use of assessment data
- the target setting process
- sharing in-house expertise through
    - joint/team planning
    - discussion with colleagues, subject coordinators and SLT
    - Staff training at school
    - Team teaching lessons
    - Peer observation and lesson studies
- implementation of recommendations arising from classroom observation
- effective response to guidance from advisers and implementation of OfSTED Action Plan
- CPD courses

This policy will be reviewed regularly to enable us to take account of new initiatives, curriculum changes, technological developments and any changes to our pupil cohort profile.

Aims and Objectives

The national curriculum for science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop 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
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future

Teaching and Learning

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 ICT in science lessons because 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, e.g. investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

We recognise that in all classes, children have a wide range of scientific abilities, 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:

- setting tasks which are open-ended and can have a variety of responses;
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks);
- grouping children by ability in the room, and setting different tasks for each ability group;
- providing resources of different complexity, matched to the ability of the child;
- using classroom assistants to support the work of individual children or groups of children.

Curriculum Planning

We recognise that Science is a core subject in the National Curriculum. The school uses the National Curriculum scheme of work for Science as the basis for its curriculum planning. Our long-term plan maps shows the coverage of the science units for each year group.

Our medium-term plan gives details of lessons for each year group. They include the National Objectives that will be covered for each topic and learning objectives and activities for each lesson along with a list of resources.

Teachers have used the Hamilton Trust resources as a basis for their planning. Hamilton's science scheme uses hands-on investigative science activities to promote a deep understanding of scientific concepts and help children develop effective methods of scientific enquiry. Planning provides opportunities for children to meet the full range of scientific investigative approaches including: pattern seeking, exploring, problem solving, fair testing, and analysing secondary sources.

EYFS

We teach science in reception classes as an integral part of the topic work covered during the year using the EYFS curriculum. Science makes a significant contribution to developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

Contribution to the Catholic Ethos

Science teaching offers children many opportunities to examine some of the fundamental questions in life, e.g. 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 in which 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.

Contribution to the other curriculum areas

English
Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study during literacy lessons are of a scientific nature. The children develop oral skills in science lessons through discussions (e.g. 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.

Maths
Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply number. Through working on investigations, they learn to estimate and predict. They develop accuracy in their

observation and recording of events. Many of their answers and conclusions include numbers.

Personal, social and health education (PHSE) and citizenship
Science makes a significant contribution to the teaching of PSHE and citizenship. 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 in which people recycle material and how environments are changed for better or worse. Secondly, the subject gives children numerous opportunities to debate and discuss. They can organise campaigns on matters of concern to them, such as helping poor or homeless people. Science thus promotes the concept of positive citizenship.

Inclusion
At St. John's school we work to ensure that all children have the opportunity to gain scientific knowledge and understanding regardless of gender, race, class, physical or intellectual ability. We will ensure that expectations do not limit pupils' achievements and that assessments do not involve any cultural, social, linguistic or gender bias. We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences. In our teaching, science is closely linked with literacy and mathematics. We recognise the particular importance of first-hand experience for motivating children with learning difficulties. We recognise that science may strongly engage our gifted and talented children, and we aim to challenge and extend them.

Assessment for learning
Children are assessed half using a variety of methods:

- Topics commonly begin with an assessment of what children already know – this is recorded on a cover sheet for the topic in their Science book.
- Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it, and uses this assessment to plan for future learning. When marking a piece of work, the teacher will indicate that a child has achieved an objective by using a stamper and they will highlight where they have met the learning objective using a green highlighter. If there are misconceptions, the teacher will underline using a pink highlighter and this will be addressed verbally or through next steps.
- Observing children at work, individually, in pairs, in a group, and in classes.
- Questioning, talking to and listening to children.
- Considering work/materials/investigations produced by children together with discussion about this with them.
- Reports to parents during the summer term.

Resources
The vast majority of resources are stored in the resource room located on the KS2 corridor.

- Teachers need to collect their resources as they need them and ensure they return them to where they came from. Unsupervised children should not be allowed to collect resources.

- There is science resource itinerary which is updated annually. This gives details of the resources including their condition and the quantity of resources.
- Staff should notify the co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials, CD ROMs, books, DVDs etc that might prove useful.

If further resources are needed or if there are any issues with resources, the Science Co-ordinator should be informed.

Monitoring and review

The coordination and planning of the science curriculum are the responsibility of the subject leader, who also:

- supports colleagues in their teaching, by keeping informed about current developments in science and providing a strategic lead and direction for this subject;
- gives the headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in science and indicates areas for further improvement;

This policy will be reviewed at least every three years.