ST MARY'S CATHOLIC

PRIMARY SCHOOL

SCIENCE POLICY

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POLICY FOR THE TEACHING OF SCIENCE

REVISED September 2025

Mission Statement

St Mary's school community follows the teachings of Jesus Christ, working together to develop the whole child in a spiritual, moral, academic, physical, social and emotional way, within a caring and supportive environment.

Introduction

Science is about exploring and investigating the world about us. This policy reflects the values and philosophies of St Mary's Catholic Primary School in relation to the teaching and learning of science. It sets out a framework within which staff can operate, and gives guidance on planning, teaching and assessment.

We aim to engage pupils' interest and enthusiasm for science and where possible it will be taught from an enquiry point of view, maximizing first hand experience, visual stimuli and hands on practical investigation.

Aims and Purposes

Science is a core curriculum subject. The teaching of science should offer the following opportunities to children:

INTENT

The national curriculum states that science, 'provides the foundation for understanding the world through the specific disciplines of biology, chemistry and physics... All pupils should be taught essential aspects of the knowledge, methods, processes and uses of science.'

At St. Mary's Catholic Primary School, our Science Curriculum is designed to develop confident, discerning learners who are highly motivated to achieve their full potential by developing scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics as well as, developing their ability to explain their scientific understanding and effectively communicate their learning and ideas. In our school we follow the Gospel values so we strive to respect and care for God's creation. In our curriculum we plan to give children time to investigate through observing, recording, measuring and the use of equipment. This is achieved through the Science Ninja Reward Scheme which we have been part of over the last four years.

We acknowledge learning as a change in the long-term memory. We recognise that in order for this change to take place, repetition is key and this is achieved by repeating the teaching of the key scientific enquiry skills.

We intend to teach science in a systematic and methodical manner which enables children to develop their knowledge and understanding by regularly revisiting taught content and skills in order for this teaching to become embedded.

We intend to teach our children how to make sense of the world around them by developing their ability to ask relevant scientific questions and conduct scientific enquiries focusing on a particular enquiry skill.

Our intention is that our children recognise and understand the relationships between scientific knowledge and enquiry skills.

We intend for Science to be utilised as a tool beyond the Science lessons and beyond the classroom.

At St. Mary's Catholic Primary School, a typical Science lesson will provide the opportunity for all children as:

- Lesson objectives are taken from the National Curriculum statutory guidelines and activities are differentiated in order to allow all children to access the learning.
- Our children have access to high quality lessons that are both challenging and enjoyable- this is underpinned by our curriculum driver; 'oracy where all our children are openly encouraged to explain their reasoning in a clear and concise manner. This is supported by the Science Ninja Reward system which we have in place, where the children will need to show an understanding of how their achievement of a particular Science Ninja Sticker has helped improve their learning.
- We provide our children with a variety of scientific opportunities, which will enable them to make the connections needed to enjoy greater depth in learning.
- We ensure children are confident scientists who are not afraid to take risks.
- We fully develop independent learners with inquisitive minds who have secure scientific foundations and an interest in self- improvement.

IMPLEMENTATION

Planning: Lessons are planned and sequenced so that new knowledge and skills build on what has been taught before. Teachers loosely follow the Snap Science materials to help support their planning.

Staff also use the information given during staff meetings, and update sessions to build on their knowledge on the Science Ninja Scheme to ensure there are opportunities for this being built upon in their planning and over an academic year.

At St. Mary's Catholic Primary School, we employ a variety of teaching styles and opportunities for children to learn and develop their scientific skills and competencies, both individually and collaboratively. The main aim of all lessons is to develop children's knowledge, understanding and skills, and to apply these to scientific enquiries focusing on key scientific skills. One of the key elements in lessons throughout the school should be on developing the children's oral and written ideas which is especially demonstrated through scientific enquiries.

Resources are used effectively to support the teaching and learning of Science at St. Mary's Catholic Primary School. The Subject leader attends cluster meetings to learn about changes and updates in the Science Curriculum. We have good links with our local feeder school St. Ignatius and children have had the opportunity to work with these teachers in their science labs. Science is monitored regularly. Our PSQM

renewal was in September 2019 and we were delighted to be awarded the PSQM Gilt Award.
Rich learning opportunities such as school trips enhance learning and build cultural capital. We have regular science workshops in school such as animal workshops, forensic science workshops and even have had duckling eggs delivered to school.
The progression maps are structured using the topic headings as they appear on the National Curriculum as well as the key scientific skills which are repetitively being covered each year:

- Measuring
- Recording
- Observing
- Using Equipment

Our pupils are encouraged to show their understanding in a number of ways, e.g. through oral answers, written answers and even scientific diagrams.

EYFS: All children in the Foundation Stage are given the opportunity to think scientifically through looking at the world around them.

IMPACT

At St. Mary's Catholic Primary School, we expect that by the end of year 6, our children;

- Become fluent in the fundamentals of science
- Reason scientifically by following a line of enquiry, conjecturing relationships and generalisations
- Solve scientific enquiry problems by applying their scientific enquiry knowledge and skills to a variety of routine and non-routing problems with increasing sophistications.

In order for this to happen, the Science leader, the headteacher and the Senior Leadership Team take responsibility for the monitoring of the Science curriculum and the standards achieved by the children. The Science leader will monitor for appropriate pitch and progression at least once every half term.

This monitoring takes the form of:

1. Lesson observations and feedback
2. Learning walks and pupil voice conversations
3. Planning scrutiny followed by support where necessary
4. A termly look at books
5. Termly data analysis
6. Moderation of work with the Science Ninja cluster group.

Data is collected termly and reported to SLT. All teachers should identity the pupils who are not making sufficient progress when the data is analysed and subsequently targets are made by highlighting these pupils and focusing on next steps.

Knowledge and Understanding

Children should:

- be curious about the things they observe, experiencing and exploring the world around them with all their senses;

- use this experience to develop their understanding of key scientific ideas and make links between different phenomena and experiences;
- begin to think about models to represent things they cannot directly experience;
- try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas.

Processes and Skills

Children should:

- acquire and refine practical skills needed to investigate questions safely;
- develop skills of predicting, asking questions, hypothesising, planning, fair testing, observing, measuring, recording, evaluating results based on evidence and understanding, drawing conclusions and using these skills in investigative work;
- practise mathematical skills in real life contexts;
- learn why numerical skills and mathematical skills are useful and helpful in understanding.

Language and Communication

Children should:

- think creatively about science and enjoy trying to make sense of phenomena;
- develop language skills through talking about their work and presenting their own ideas using sustained and systematic writing of different kinds;
- use scientific and mathematical language including technical vocabulary and conventions, and draw diagrams and charts to communicate scientific ideas;
- read non-fiction and extract information from sources such as reference books or information from the internet.

Science Vocabulary

Key words from the topic to be displayed and frequently used. Also to be evident in planning.

Values and Attitudes

Children should:

- work with others, listening to their ideas and treating these with respect;
- develop respect for evidence and evaluate critically ideas which may or may not fit evidence available;
- develop the ability to work in an increasingly independent way;
- develop a respect for the environment and living things and for their own health and safety.

Curriculum

In order to achieve the aims outlined previously, the teaching of science is implemented in the following ways.

Scheme of Work

The statutory requirements for science in the National Curriculum Programme of Study for Science, and the Enfield guidance are followed. This provides a long term teaching framework, with units of work planned for years 1 – 6, to provide both subject knowledge and opportunities for scientific inquiry.

Appendix 1 – Whole School Long Term Plan

Science Ninja Scheme

We will continue as a school, to be part of the Science Ninja reward scheme. This is where children will be rewarded stickers for demonstrating some key scientific enquiry skills for using equipment, measuring, recording and observing. There will also be a certificate rewarded to children for doing some science linked activities at home.

New National Curriculum

1. Aims for the children should learn about Biology, Chemistry and Physics through enquiry.
2. Many topics are repeated and extended year on year.
3. Collins are producing a scheme written by Jane Turner, Liz Lawrence and Naomi Hiscock. Jason highly recommended this material however this material will not be ready until September.
4. New Key Stages 1 and 2 National Curriculum in England
5. In new curriculum although Electricity has been removed from KS1 this does not mean that it cannot be investigated at KS1.

Science in the Foundation Stage

In Nursery and Reception, scientific concepts are explored through the Early Learning Goals for Knowledge and Understanding of the World. Refer to *Curriculum guidance for the foundation stage* issued jointly by QCA and the DFEE 2000. The Snap Science scheme provides additional practical ideas, activities and resources, and assessment and evaluation is mainly through observation and discussion.

Planning

Medium- and short-term planning is the responsibility of the class teacher, and reference should be made in the first instance to the National Curriculum for Key Stages 1 and 2. Further guidance may be obtained from the Snap Science scheme, which is available in each year group. Standard format planning sheets are available from the Science Co-ordinator.

Completed weekly planning sheets are annotated and originals kept in relevant Class folders on the Q drive:

Time Allocation

Subject teaching is planned so that each year group allocates a percentage teaching time per week for science, in line with national requirements. Each year group has the freedom to allocate blocks of time for science within the half-term, if this suits the context of a particular unit being covered.

Often this time will be on two separate days, but time should be planned flexibly to allow for longer or shorter sessions as appropriate.

We will aim for:

- KS1 1½ hours
- KS2 2 hours

Class Organisation and Teaching Style

Within classes, pupils are taught in a combination of ways, i.e. whole class, groups, individually, according to the learning tasks.

The organisation will vary, depending on a number of factors:

- space available
- type of activity
- safety and degree of supervision needed
- pupils' experience and ability
- use of time
- availability and deployment of additional help.

Assessment

Assessment is used to:

- provide diagnostic information about pupils
- plan future teaching and learning
- provide summative information to teachers
- provide information for parents.

Teachers should make individual assessments of children based on a combination of knowledge and skills. Assessment data should be provided for the Co-ordinator at the end of every half term for analysis. Data should also be added to the school's ITrack system and analysed by the class teacher to ensure that the pupils are making enough progress between each unit of work. Progress should be seen in books from the start of the topic to the end. There is an assessment linked to our Assertive Mentoring tracking which takes place once a term.

Pupils' work will be marked in accordance with agreed school policy and their performance continually assessed by their class teacher.

Samples of children's work are taken from each topic and added to the Science Co-ordinator File.

HA/MA/LA – one sample of each with added comments e.g. with some assistance, lots of assistance, unaided etc.

Photographs are a useful way of recording some of the practical investigations.

Evaluation

It is the responsibility of all staff to monitor and evaluate the teaching provision made for science within the school, in order that pupils make the greatest progress. The Science Co-ordinator also evaluates the content of the science curriculum, and this will be conducted according to the priority given to science within the School Development Plan.

Evaluation may take place by means of a number of methods including:

- the assessment of pupils' work and their achievements;
- the analysis of teachers planning as seen in short term plans;
- discussion amongst groups of staff or the whole staff;
- classroom observation;
- analysis of SAT results
- analysis of summative assessments
- on-going sampling of children's work through investigative skills as well as knowledge-based understanding.

Equal Opportunities

It is the responsibility of all teachers to ensure that pupils irrespective of gender, ability, including able and talented children, ethnicity and social circumstance have access to the curriculum and make the greatest progress possible.

Health and Safety

The Snap Science scheme provides advice and guidance on Health and Safety issues relating scientific inquiry activities. Further guidance can be obtained from the school Health and Safety policy and *Be Safe! Some aspects of safety in school science and technology for Key Stages 1 and 2* published by the ASE. Health and Safety guidance is also displayed in the science resource cupboard. Staff have access to the CLEAPSS Healthy and Safety guidance to help plan and carry out safe investigations.

Resources

Resources are catalogued in an inventory, and every class teacher has a copy, to assist with planning. A further copy is displayed in the science resource cupboard. Resources are renewed and extended every year within the confines of budget allowances. Resources are stored in the following areas:

Science cupboard is downstairs beside the ICT suite and it has been labelled.

Appendix 1

This is Enfield's guidance to the topics which must be covered throughout the year which for each year group. Class teachers can decide the order of the topics and the length that they need to be.