



St Mary's Catholic Federation, Carshalton

Learning, playing and growing together in the love of Jesus

Science Policy (Curriculum) (Bi-Annual)

This policy is to be read in conjunction with the following policies: Positive Behaviour, Inclusion, Safeguarding, Assessment, Teaching & Learning, Computing, E-safety, R.E, Education in Human Love and PSHE&C policies as well as the Curriculum Overview statement.

Author: Science Leads, A Parr & C Radcliffe

Committee: SLT

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Date Approved: March 2023

Date of Review: March 2024

Approved by Full Governing Body Date: March 2023

Chair of Governors.....

Safeguarding Statement

This school takes notice of and adheres to all the national and local policies and guidance in regard to Safeguarding Children and Young People.

Lead Safeguarding Person Junior School: Mrs M Kenny

Lead Safeguarding Person Nursery & Infant School: Mrs M Quinn

Safeguarding Deputies: (Juniors) Mrs S Hulme, Mrs F Sullivan & Mr S Pratsis and (Infants) Mrs S Hulme & Mrs E Heath

Governor designated safeguarding officer: Mr T Richmond



"St Mary's is committed to being a Rights Respecting School to inspire and support the children, parents and school governors in school and the wider community."

Intent:

"Ignite pupils' curiosity, encourage discovery and develop a deeper understanding of the world we live in."

At St Mary's School, our science curriculum is underpinned by the National Curriculum which states, "A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science."

The teaching of science at St Mary's harnesses pupils' sense of curiosity and excitement about the world around them. Throughout science topics, pupils explore how science can be used to explain what is happening, predict how things will behave, and analyse causes. Scaffolding the learning from the classroom to the field and back to the classroom generates memorable, comprehensive and long-term learning. Pupils share their findings, working to become effective communicators of scientific ideas, facts and data.

In Early Years, Understanding the World involves guiding pupils to make sense of their physical world through a variety of exciting topics that put science into context, including themes such as Colourful Me, where pupils learn about parts of the body, their senses and keeping healthy.

In Key Stage 1 and 2, biology related topics include living things and their habitats, plants and animals including humans. Chemistry related topics include properties and changes in materials. Physics related topics include forces, light, electricity, Earth and space. By the end of their primary education, pupils will be able to use different types of scientific enquiry to help them answer scientific questions about the world around them. They will be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Pupils have access to high quality resources, equipment and models to support and enhance their science learning. So much of science lends itself to outdoor learning and at St Mary's, we provide pupils with many opportunities to experience this. This is all done through the use of first-hand practical experiences, in conjunction with appropriate secondary sources, such as books, photographs and videos.

Implementation:

At St Mary's, Science topics are taught within each year group in accordance with the National Curriculum.

- Topics are blocked to allow children to focus on developing their knowledge and skills, studying each topic in depth.
- Every year the group will build upon the learning from prior year groups therefore developing depth of understanding and progression of skills.
- Teachers promote enjoyment and foster interest of the scientific disciplines; Biology, Chemistry and Physics, using real life objects, everyday scenarios and the work of scientists to put learning into context.
- Children explore, question, predict, plan, carry out investigations and observations as well as conclude their findings. In upper KS2, children use Thinking Hats to evaluate their investigations.
- Children present their findings and learning in a variety of ways, incorporating scientific vocabulary, observations and diagrams.

- At the start of each topic, children will review previous learning and will have the opportunity to share what they already know about a current topic through the I Wonder, I Discovered statements. Effective CPD and standardisation opportunities are available to staff to ensure high levels of confidence and knowledge are maintained.
- Effective use of education visits and visitors are planned, to enrich and enhance the pupil's learning experiences within the Science curriculum.
- Regular events, such as Science Week or project days, such as Big Bird Watch, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events often involve families and the wider community.
- At the end of each topic, key knowledge is reviewed by the children and rigorously checked by the teacher and consolidated as necessary.
- Teachers use effective assessment for learning in each lesson to ensure misconceptions are highlighted and addressed.
- Effective modelling by teachers ensures that children are able to achieve their learning intention, with misconceptions addressed within it.
- Through using a range of assessment tools, differentiation is facilitated by teachers, to ensure that each pupil can access the Science curriculum.
- Children are given clear success criteria in order to achieve the learning intention with differing elements of independence.
- Pupils are regularly given the opportunity for self or peer assessment, which will then be used to inform planning, preparation, differentiation and address misconceptions within that lesson, or for the next lesson.
- Cross-curricular links are planned for, with subjects such as Maths, English, Geography and Computing.

EYFS

The Early Years Foundation Stage Curriculum supports children's understanding of Science through the planning and teaching of 'Understanding the World.' Children find out about objects, materials and living things using all of their senses looking at similarities, differences, patterns and change. Both the environment and skilled practitioners foster curiosity and encourage explorative play, children are motivated to ask questions about why things happen and how things work. Our children are encouraged to use their natural environment around them to explore. Children enjoy spending time outdoors exploring mini-beasts and their habitats, observing the changing seasons, plants and animals. Children participate in cookery and baking sessions which allows them to experience changes in state as ingredients are mixed, heated and cooled.

Impact

The successful approach at St Mary's School results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Through various workshops and trips children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Pupil voice is used to further develop the Science curriculum, through questioning of pupil's views and attitudes to Science to support the children's enjoyment of science and to motivate learners.

As a result of teaching about the environment, every encouragement is given to the children to apply the principles of energy efficiency, water conservation, waste reduction and recycling and litter control. Recycling is actively encouraged throughout the schools.

All of the above helps to identify areas for focus based on the National Curriculum; giving teachers time to adapt their planning to make sure all statutory requirements are covered. Results of monitoring

and evaluation are reported termly to the Governing Body.

HEALTH AND SAFETY

The school will use risk assessment as part of the planning process. Reference should be made to the 'Be Safe' Publication recommended by Sutton Advisory Team a copy of which is displayed in upper and lower corridors.

Safety Issues

- Pets/live animals
- Microbes
- Chemical substances
- Heating substances
- Electricity
- Apparatus and equipment.
- Personal Safety (jewellery, hair, eye protection)
- Food allergies

It is the duty of all staff to:

- Recognise and assess the hazards and risks to themselves and others when working with living things and materials.
- Be aware of behaviour of children when involved in practical work
- Be aware of appropriate handling of equipment and materials
- Take action to control these risks and hazards.
- Be familiar with the contents of the Health and Safety Policy in general.
- Check the health and safety guidelines (CLEAPPS) when considering undertaking new investigations.

Teachers should be aware of the following:

- Pupils in Years R to 4 should not use glass containers. They may be used in Years 5 and 6 when the nature of the work means that there is no realistic alternative.
- Rechargeable batteries are not to be used for circuit work. This is due to them becoming very hot if short-circuited.
- Children are not to be exposed to mould.

INFORMATION TECHNOLOGY

The children have access to I.C.T. within each classroom which is used to support their work in Science where appropriate.

Sources and references:

National Curriculum in England: Science programme of Study: Key Stages 1 and 2 (2013)

Development Matters Document (EYFS)

Long term Plans for each year group in the Juniors can be viewed here

[Infant Long Term Plans:](#)

https://www.smcsc.org.uk/static/subject_files/Science%20LTP%20Infants%202021-2022.pdf

Juniors Long Term Plans:

https://www.smcsc.org.uk/static/subject_files/Copy%20of%20KS2%20science%20LTP%202021-2022.pdf

Resources to support home learning can be viewed here

https://www.smcsc.org.uk/static/subject_files/Resources%20to%20support%20home%20learning%20-%20Science.pdf