St Mary's Catholic Primary School

Science Policy

We grow and learn in the footsteps of Jesus

Approved by	
Name:	Emmy Nice
Position:	Subject lead
Signed:	E.Nice
Date:	22nd September 2026
Proposed review date[2]:	September 2027
Science Governor	Nicola Petitt

Science Policy

INTENT

Aims and objectives

At St Mary's we want to provide children with high-quality science education that 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. At St Mary's we aim to build up a body of key foundation knowledge and concepts, and encourage pupils to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. At St Mary's we encourage pupils to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Pupils will:

- Develop scientific knowledge and conceptual understanding though 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.
- Be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

IMPLEMENTATION

Science is a core subject in the curriculum. It is vitally important that the children develop secure understanding of each key block of knowledge in order to progress to the next stage. Insecure, superficial understanding will not all genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content.

Pupils will be able to describe associated processed and key characteristics in common language, but they will be familiar with, and use, technical terminology accurately and precisely. Pupils will build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will use different contexts to maximise pupils' engagement with and motivation to study science.

'Working scientifically' should not be taught as a separate strand. Working scientifically will be embedded within the content of biology, chemistry and physics, focusing on the key features of scientific enquiry, so that the pupils at St Mary's can learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry will include observing over time;

pattern seeking; identifying; classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils are St Mary's will seek answers to questions through collecting, analysing and presenting data.

We carry out curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the science topics studied in each term during each key stage. Medium term plans are mapped out by class teachers. They use the topic being taught as a stimulus and create a series of sessions which link to this and cover the range of skills needed in accordance to the National Curriculum. The short-term plans list the specific learning objectives and expected outcomes for each lesson.

EYFS

We teach science in reception classes as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the curriculum, we relate the science side of children's work to the objectives set out in the Early Learning Goals (ELG's) which underpin the curriculum planning for children ages three to five. Science makes a significant contribution to developing a child's knowledge and understanding of the world. Science at Foundation Stage is introduced indirectly through activities that encourage our pupils to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. It's called 'knowledge and understanding of the world'. Early Years science also helps children with skills in other Foundation Stage areas of the national curriculum, such as physical development and creative development.

KS1

In Key Stage 1 the principal focus of science teaching is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. Children are encouraged to be curious and ask questions about what they notice. We do this by following the Kapow scheme of work. Children are helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. Pupils will begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is taught through and clearly related to the teaching of substantive science content in the programme of study.

Pupils will read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at KS1.

Lower KS2

At St Mary's the principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They will do this through exploring, talking about, testing and developing ideas about everyday phenomenon and the relationships between living things and familiar interactions, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which type of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying living things, carrying out simple comparative and simple tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

'Working scientifically' will be taught through and clearly related to substantive science content in the programme of study.

Pupils will read and spell scientific vocabulary correctly and with confidence, using their growing word-reading and spelling knowledge.

Upper KS2

In KS2, we follow the Kapow scheme of work. The principal focus of science teaching in upper key stage 2 is to enable pupils to develop deeper understanding of a wide range of scientific ideas. Pupils at St Mary's will do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they will encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They will also begin to recognise that scientific ideas change and develop over time. They will select the most appropriate ways to answer science questions using different types of scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils will draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

'Working scientifically' will be taught and clearly related to substantive science content in the programme of study.

Pupils will read, spell and pronounce scientific vocabulary correctly.

IMPACT

Children will demonstrate their ability in science in a variety of different ways.

In KS1 for example, children will demonstrate their scientific knowledge and understanding by:

- asking simple questions and recognising that they can be answered in different ways
- observing closely

- using simple equipment
- performing simple tests
- identify and classify
- use their observations and ideas to suggest answers to questions and gather and record data to help in answering questions

In lower KS2, children will demonstrate their scientific knowledge and understanding by:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data logger
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings

In upper KS2, children will demonstrate their scientific knowledge and understanding by:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of an a degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments

From September 2019, teachers will be using the 'Insight' assessment programme. They will monitor pupil's progress using the traffic light system on Insight for their year group. They will use these grades/colours as a basis for assessing the progress of the child, and we will pass this information on to the next teacher at the end of the year.

The science subject leader will keep samples of pupil's work in a portfolio. These will demonstrate what the expected level of achievement is in science for each age group in the school.

British Values through Science

At St Mary's, we embed British Values into our everyday teaching. We do this in science in the following ways:

Democracy

- Take the views and opinions of others into account
- Take turns and instructions from others

Rule of Law

- Understand the importance of safety rules when working scientifically
- Know that there are consequences if rules are not followed

Individual Liberty

- Make choices when planning an investigation
- Others may have different points of view

Tolerance

- Scientific discoveries have come from all over the world

Mutual Respect

- Working as a team
- Discussing findings and understanding others may have different opinions
- Offering support and advice to others.

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 by providing a strategic lead and direction for this subject
- gives the head teacher an annual summary report in which she evaluates the strengths and weaknesses in science and indicates areas for further improvement
- uses specifically allocated regular management time to review evidence of the children's work, and to observe science lessons across the school

This policy will be reviewed at least every two years.

Signed: E. Nice

Date: 22.9.26