SS Peter and Paul RC Primary School

Science Policy

Together with the Spirit
we will create an oasis
where every child matters

September 2023

MISSION STATEMENT

We would like everyone involved in the life of our school to explore and promote God's values so that everything that happens in our school demonstrates God's love for everyone.

Together with the Spirit we will create an oasis where every child matters.

AIMS OF THE SCIENCE POLICY

Our Science Policy follows The National Curriculum 2014 for Science Guidelines and 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.

PURPOSE OF STUDY-WHY TEACH SCIENCE?

A high-quality Science education provides foundations for understanding the world. Science has changed our lives and is vital to the world's future prosperity. Through building key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how key knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. This understanding should be consolidated through their appreciation of applications of science in society and the economy.

In teaching Science, we are developing in our children:

- a positive attitude towards science and an awareness of its fascination
- an understanding of science through a process of enquiry and investigation
- confidence and competence in scientific knowledge, concepts and skills
- an ability to reason, predict, think logically and to work systematically and accurately
- an ability to communicate scientifically
- the initiative to work both independently and in co-operation with others
- the ability and meaning to use and apply science across the curriculum and real life.

PLANNING

School curriculum

The programmes of study for science are set out year-by-year for Key Stages 1 and 2. We are however, only required to teach the relevant programme of study by the end of the key stage. Within each key stage, School has the flexibility to introduce content earlier or later than set out in the programme of study and may introduce key stage content during an earlier key stage if appropriate.

Teachers will base their planning on the programmes of study for their relevant year groups.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Being able to learn to remember plays a key role in the way sequences of lessons are planned.

Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should 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 nature, processes and methods of science

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group. It should not be taught as a separate strand.

Attainment targets

By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Key Stage 1

The main focus of science teaching in Key Stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be 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. They should 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.

Pupils should read and spell scientific vocabulary at a level consistent with their reading and spelling knowledge at Key Stage 1, linked to our Sounds Write phonics programme.

Lower Key Stage 2 – Years 3 and 4

The main focus of science teaching in Lower Key Stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, 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 types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple fair 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' must **always** be taught through and clearly related to substantive Science content in the programme of study.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing reading and spelling knowledge, linked to our Sounds Write phonics programme.

Upper Key Stage 2 – Years 5-6

The main focus of science teaching in Upper Key Stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should 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 should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should 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 fair tests and finding things out using a wide range of secondary sources of information. Pupils should 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. Pupils should read, spell and pronounce scientific vocabulary correctly, linked to our Sounds Write phonics programme.

'Working and thinking scientifically' must **always** be taught through and clearly related to substantive Science content in the programme of study.

See Appendix 1 for year group specific topics.

ASSESSMENT

This is achieved through:

- observation of pupils;
- discussion with pupils
- marking work;
- end of unit assessment tests from Years 1 – 6

MONITORING AND EVALUATION

The Subject Leader follows the School Self Evaluation for Subject Leaders' Guidelines and is achieved through;

- monitoring and evaluation of pupils' work;
- lesson observations;
- monitoring of planning

SAFETY

Follow schools Health and Safety policy

Section(s):

Control of Substances Hazardous to Health (COSHH)

Work Equipment – Design Technology and Food Technology

Guidance for risk assessments can be found on CLEAPPS

REPORTING TO PARENTS

Following whole School Policy based on National requirements and guidelines.

MARKING WORK

Refer to the whole School Marking Policy.

CROSS CURRICULAR LINKS

We aim to promote writing and maths through all areas of the curriculum. See Appendix 1 for year group specific links.

Written by: S Coyne
Date: October 2023
Date of next Review: October 2024

Appendix 1

EYFS	Children at the expected level of development will: - Explore the natural world around them, making observations and drawing pictures of animals and plants; - Know some similarities and differences between the natural world around them and contrasting environments, drawing on their experiences and what has been read in class; - Understand some important processes and changes in the natural world around them, including the seasons and changing states of matter.										
	✔	✔	✔		✔		✔				
Area of Science	**Biology**				**Chemistry**	**Physics**					
Learning Focus: To Understand...	**Plants**	**Living Things**	**Animals and Humans**	**Evolution and Inheritance**	**Materials**	**Movement, Forces and Magnets**	**Earth and Space**	**Rocks**	**Light and Seeing**	**Sound and Hearing**	**Electricity**
Year One	Unit 1		Unit 1		Unit 1	Unit 1	Unit 1 (link also to Seasons)		*Link to Animals and Humans Unit 1 - senses)*	*Link to Animals and Humans Unit 1 - senses)*	
Year Two	Unit 2	Unit 1	Unit 2	*Link to Animals and Humans Unit 2 (humans resemble their parents in many features)*	Unit 2						Unit 1
Year Three	Unit 3		Unit 3	*Link to Materials Unit 3 (Rocks and fossils)*		Unit 2		Unit 1	Unit 1		
Year Four		Unit 2	Unit 4		Unit 3					Unit 1	Unit 2
Year Five		Unit 3	Unit 5		Unit 4	Unit 3	Unit 2			Unit 2	
Year Six		Unit 4	Unit 6	Evolution and Inheritance Unit					Unit 2		Unit 3