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St. Joseph's Catholic Primary School
Love God Love Learning Love Life

Science Policy

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At St Joseph's Catholic Primary School, we understand the importance that science holds to our future. We foster skillful, curious scientists who develop a deep curiosity of the world and beyond and learn to appreciate and understand the world in all its fullness (John 10). We offer an exciting, inclusive and inspiring curriculum that provides children with opportunities to question, explore and challenge scientific thinking to gain a deeper understanding of the world around us through practical investigations and enquiry. Our Catholic Social teaching (CST) is rooted in scripture. It is our moral compass, guiding us on how to live out our faith in the world. These values are at the heart of our science learning, where exploring our values through science will create scientists who have strong morals and a desire to make the world a better place.



Sofia the sloth
(a big fan of Stewardship)

'The Lord God took the man and put him in the garden of Eden to till it and keep it'
Genesis 2:15

Stewardship is all about caring for the many gifts that God has given to us. These include our environment, our own talents and other resources.

Intent

The Science curriculum at St Joseph's Catholic Primary School aims to give all children a strong understanding of the world around them, providing them with specific skills and knowledge to enjoy science by ensuring that lessons are engaging and fun, and helping them to think scientifically to have access to the language and vocabulary of science. And gain an understanding of scientific processes. It also develops their understanding of the uses and implications of Science, today and for the future. Our intention is to develop them into budding scientists, who care for the world around them, are curious about what they see and experience, and are able to use science to understand how human activity impacts on the planet and how we can carry out our duty of care for God's creation.

Implementation

Science is taught throughout the school in weekly lessons and is delivered by class teachers. The school uses Cornerstones which includes units of study linked to the National Curriculum and supports teachers with their lesson planning. Each of the units shows progression in the key scientific knowledge and concepts required from Year 1 to Year 6. Other sources may also be used to enhance the lessons in order to meet the needs of the children. Cornerstones contains the most appropriate scientific vocabulary to be used when studying a particular area of science, a list of the scientists who are working, or have worked, in that particular area of science and practical activities to support the learning. There are numerous opportunities to observe and question; to explore and investigate; to predict; to use equipment safely; plan, conduct and reflect on investigations. Opportunities for cross curricular learning are used whenever possible. Wider opportunities to promote the love of science are made available with additional opportunities such as, Forest school club and Stem club.

We are very fortunate this year to have a STEM ambassador to work alongside Keystage 1 and Keystage 2. STEM is **an acronym for science, technology, engineering, and math**. These four fields share an emphasis on innovation, problem-solving, and critical thinking. And together they make up a popular and fast-growing industry. Most STEM workers use computers and other technology in their day-to-day jobs. So we are creating engineers of the future!

EYFS

In Early Years, children engage in scientific activities through their study and acquirement of Understanding the World (UW). Reception pupils follow the Early Years Curriculum for UW and are assessed initially against Cornerstone's criteria, moving to the Early Years Profile towards the end of their Reception year.

Key Stage 1

The principal 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. During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- Asking simple questions and recognising that they can be answered in different ways.
- Observing closely, using simple equipment.

- Performing simple tests.
- Identifying and classifying.
- Using their observations and ideas to suggest answers to questions.
- Gathering and recording data to help in answering questions.

These will be taught through the following topics:

- Plants.
- Animals including humans.
- Everyday materials.
- Seasonal changes (ongoing topic throughout the year).
- Living things and their habitats.
- Uses of everyday materials.

Lower Key Stage 2

The principal focus of science teaching in years 3 & 4 is to enable pupils to broaden their scientific view of the world around them. They should do this through:

- 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 loggers.
- 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.

These will be taught through the following topics:

- Plants
- Animals including humans
- Everyday materials
- Rocks
- Light
- Forces and magnets
- Living things and their habitats
- Electricity
- Sound
- States of matter

Upper Key Stage 2

The principal 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:

- 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 and 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.

These will be taught through the following topics:

- Living things and their habitats
- Animals including humans
- Properties and changes of materials
- Earth and Space
- Forces
- Evolution and Inheritance
- Light
- Electricity

Teachers need to also read and apply the non-statutory guidance within the National Curriculum, to broaden the skills of the children within their class. Children will be involved in a variety of structured activities and in more open ended investigative work including:

- Activities to develop good observational skills.
- Practical activities using measuring instruments which will develop their ability to read scales accurately.
- Structured activities to develop understanding of a scientific concept and open ended investigations.

Skills progression

Progress is monitored by the SLT and Science Subject Leader through book looks to ensure consistency, progression, coverage and a balance between teacher led and practical activities and moderation amongst year groups.

At St Joseph's the children's learning is assessed using the skills progression tool on Cornerstone's where we are able to individually track the children's own progression.

Impact

As a result of our curriculum, children at St Joseph's Catholic Primary develop a love of science and an increased understanding of the impact that the subject can have on their own and others' lives. They can demonstrate a clear progression of knowledge and skills in Science and have an understanding of how Science can be used to benefit society by providing opportunities for Cultural capital. Our teaching ensures that they become resourceful learners who develop independent thinking and questioning skills by the time they leave our school and they go to secondary school with a good scientific knowledge on which to base their deeper learning. In addition, our children also develop an understanding of the importance of caring for the environment sustainably on a variety of levels, including in their own locality and in relation to communities around the world. Through various workshops, science week initiatives and interactions with Science experts, our curriculum will lead pupils to be enthusiastic science learners.

