

St Joseph's Catholic Primary School

St. Joseph's School is a Catholic family where each child is encouraged to love, learn and succeed.

Faith, Hope, Love

Policy for Science

Our ethos is one, which nurtures education through the recognition and celebration of all children's experiences and achievements, whatever the context.

Each child is an individual and deserves to be respected and valued as such. Every child is unique and made in the likeness of God. Every child should succeed at their own level and be praised for this success.

Subject Leader: Anna Mann

Governor Link: Perry Guess

Updated/approved by Staff and governors: 14/03/2016

Date for Review (2 years): **Spring 2019**

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Rationale

Science is a body of knowledge that is built up for investigative and experimenting skills. Science in our school is about developing children's awareness of the world we live in through investigation, as well as using and applying process skills. We believe that a broad and balanced science education, where cross curricular links can be made to other subjects, is the entitlement of all children within our school. Our aims in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas. □ Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science.

Attitudes

- Encouraging the development of positive attitudes to science. □ Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of ICT in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

Our teaching aims

- We aim to teach science in ways that are imaginative, purposeful enjoyable and well managed.

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- We aim to link our science topics to other areas of learning within our curriculum to ensure a more meaningful learning outcome.
- Allow opportunity for an investigation and exploration activities within each science unit each half term.
- We aim to give clear and accurate teacher explanations and offer skilful questioning.

In England, science has four attainment targets and a statement of breadth of study. These are:

- Sc1 Scientific enquiry;
- Sc2 Life and living processes; □ Sc3 Materials and their properties;
- Sc4 Physical processes.

Our role is to teach scientific enquiry through the contexts of the three main content areas. The breadth of study statement in the National Curriculum is concerned with issues such as the use of ICT, scientific language and health & safety.

Children in the foundation stage are taught the science elements of the foundation stage document through the specific area of learning: Understanding the World.

Inclusion

We aim to provide for all children so that they achieve as highly as they can in science according to their individual abilities. Gifted children will be identified and suitable learning challenges provided.

- The National Curriculum for science is our starting point for planning a science curriculum that meets the specific needs of individuals and groups of children. We meet these needs through:
- setting suitable learning challenges;
- responding to children's diverse learning needs;
- overcoming potential barriers to learning and assessment for individuals and groups of pupils;
- providing other curricular opportunities outside the National Curriculum to meet the needs of individuals or groups of children.

Equal opportunities

All children are provided with equal access to the science curriculum. We aim to provide suitable learning opportunities regardless of gender, ethnicity or home background.

Time

Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

- KS1 and Foundation stage teachers should be teaching science for a minimum of one hour each week.
- KS2 teachers should be teaching science for a minimum of two hours per week.

Science Policy to be reviewed by Learning and Standards Committee

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- In KS 1/Foundation stage, a minimum of one third of lessons overall should include practical scientific enquiry.
- In KS2, a minimum of 50% of lessons overall should include practical scientific enquiry.

Teaching and learning

Science is taught in line with our Teaching and Learning policy.

Our principal aim is to develop children's knowledge, skills, and understanding, as well as a sense of enjoyment in science.

We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the task to the ability of the child.

Science curriculum planning

The school uses the national scheme of work for science as the basis of its curriculum planning.

Planning for science is a process in which teachers are involved to ensure that the school gives full and equal coverage of the national curriculum objectives. As a school we are promoting a creative curriculum approach to the teaching and learning.

Assessment.

- We use assessment to inform and develop our teaching; We assess children's work in science by making informal judgements as we observe them during lessons.
- Teachers should make formative and summative assessments and use these to inform starting points for each unit of work.
- Teachers level science attainment using the National Curriculum levels of attainment
- We assess for learning (AfL). Children are involved in the process of selfimprovement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.
- We mark each piece of work in line with the marking policy
- The science coordinator is responsible for ensuring work is moderated both within school and with other local schools, making sure our levelling is consistent.
- Assessment records are reviewed annually.
- We have a tracking system to follow and accelerate children's progress.

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- The school science coordinator monitors progress through the school by sampling children's work at regular intervals. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.
- Teachers should assess children's level of attainment at the end of the KS1 and KS2 programmes of study. This teacher assessment is based on assessment records and work samples.

The contribution of science to teaching in other curriculum areas

□ English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in Literacy are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. Where possible, a creative curriculum is delivered and links are made between Science and Literacy.

□ Mathematics

Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions. They also produce diagrams, charts and graphs using the data from real investigations.

□ Information and communication technology (ICT)

Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information on the Internet and on CD-ROMs. Children use ICT (computer and camera) to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

- Personal, social and health education (PSHE) and citizenship** Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of

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the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive citizenship.

□ **Spiritual, moral, social and cultural development**

Science teaching offers children many opportunities to examine some of the fundamental questions in life, for example, how the world was created, and links should be made wherever possible with teachings of the Catholic faith. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world.

Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way we manage the earth's resources.

Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Resources

We have sufficient resources for all science teaching units in the school. We keep these in a central store located in the main building. The library contains a good supply of science topic books and the ICT suite has a range of computer software to support children's individual research. Staff should inform the co-ordinator of any requirements for new apparatus.

Monitoring and review

It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The science subject leader gives the senior management team an annual summary report in which s/he evaluates strengths and weaknesses in the subject and indicates areas for further improvement. The science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work, looking at planning and carrying pupil interviews.