St. Joseph's Catholic Primary School.

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Science

Intent, Implementation and Impact Policy

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Mission Statement

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How do we teach Science?

Intent
At St Joseph's Catholic Primary School, our aims are to provide a broad, balanced and differentiated curriculum ensuring the progressive development of knowledge, skills and vocabulary, fulfilling the requirements of the National Curriculum for science and for the children to develop a love of science. Furthermore, we aim to inspire in pupils a curiosity and fascination about the natural and man-made world and a respect for the environment that will remain with them for the rest of their lives.

The aims of teaching science in our school are to:

- Equip children to use themselves as starting points for learning about science, and to build on their enthusiasm and natural sense of wonder about the world
- Develop scientific knowledge and conceptual understanding of the disciplines of Physics, Chemistry and Biology.
- Develop the skills of observation, prediction, investigation, interpretation, communication, questioning and hypothesizing, and increased use of precise measurement skills and ICT.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, devising their own investigations and taking lines of enquiry in a way that interests them
- Gain enjoyment from their scientific work
- Practically investigate their questions using various methods of enquiry.
- Gain competence in the science skills of planning scientific investigations, gathering and analysing data and critical evaluation of investigations across the disciplines.
- Use a range of methods to gather data from investigations and secondary sources including I.C.T., drawings, diagrams, videos and photographs.
- Present data in a variety of methods including tables, bar charts, line graphs, pictograms and pie charts.
- Produce comprehensive science reports that demonstrate their proficiency in the scientific method.
- Have care for the safety of all individuals in lessons by developing knowledge of the hazards of the materials and equipment they handle, along with mitigating these hazards.
- Develop an enthusiasm and enjoyment of scientific learning and discovery.
- Encourage children to collect relevant evidence and to question outcome and to build resilience to persevere as it is likely they will need to repeat results or will encounter unexpected results that donot support their hypothesis
- Encourage children to treat the living and non-living environment with respect and sensitivity
- To critically question the world around them
- To enable children to appreciate that we do not always know the answers when carrying outscientific enquiry as the world around them is continually changing and developing
- Equip children with the language to be able to discuss their learning and confidently explain their scientific understanding in small groups

Special Educational Needs Disability (SEND) / Pupil Premium / Higher Attainers

All children will receive Quality First Teaching. Any children with identified SEND will receive additional scaffolding and support in class to enable them to achieve the intended goals of each session

Implementation

The Science subject leader is responsible for the curriculum design, delivery and impact in this subject.This includes meeting with the designated Governor and Senior Leadership Team to review and quality assure the subject areas to ensure that it is being implemented well and coverage and breadth and balance is adequate. To ensure high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. Science is taught in discrete lessons weekly. We ensure that teachers have

high expectations during Science lessons.

The science curriculum at St Joseph's Catholic Primary School is based upon the 2014 Primary National Curriculum in England, which provides a broad framework and outlines the knowledge and skills taught in each Key Stage. At St Joseph's, we also follow HEP (The Education Partnership) Science curriculum in KS2.
The curriculum has a clear progression of knowledge and skills, and which incorporates Working Scientifically. Working Scientifically skills are explicit in lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the theme of the lesson. Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding.
Engaging lessons are created with each lesson having both practical and knowledge elements. Teachers use precise questioning in class to test conceptual knowledge and skills and children are regularly assessed to identify those children with gaps in learning, so that all children keep up. Before planning a unit of work, teachers assess children's prior knowledge and understanding to ensure work is pitched at the correct level and also build upon the learning and skill development of previous years. Teaching key subject specific vocabulary is also a key part of the science curriculum. The vocabulary children will need for each unit is identified and this builds upon the vocabulary they have learnt in earlier years.

Science assessment is based on teacher's assessment of children. At the end of a unit, teachers will identify if a child is working at the expected standard for that objective. This is then reported on the school's assessment document and the percentage of children working at, above and below the expected standard are identified. This is then passed on to the next class teacher as a record of the child's progress throughout the year.

CPD is provided to staff where needed, this may be a course to attend, an online CPD programme to take part in or the subject leader delivering training to the rest of the staff.

Impact
The standard of science teaching and learning and the enrichment opportunities offered to the children is high.
Our science curriculum is high quality, well thought out and is planned to demonstrate progression which results in a fun, engaging, high-quality science education that provides children with the foundations for understanding the natural world. Practical investigations ensure that children learn through varied and first-hand experiences. Through the curriculum, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children also learn the possibilities for careers in science. 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.

We measure the impact of our science curriculum through the following methods:

- Assessing children's understanding of topic linked vocabulary before and after the unit is taught
- Marking of written work in books
- Using dialogic learning tasks to assess children's understanding
- Summative assessment of pupil discussions about their learning.
- Images and videos of the children's practical learning.
- Interviewing the pupils about their learning (pupil voice)
- Moderation staff meetings where pupil's books are scrutinised and there is the opportunity for adialogue between teachers to understand their class's work
- External moderation of children's work at the end of each Key Stage within the Trust
- Annual reporting of progress and attainment in science to parents

The science subject leader will continually monitor the impact science teaching is having on the children's learning through book scrutinies to ensure the progress of knowledge and skills is being taught.They will also ensure the knowledge taught is retained by the children and continually revisited and that the learners are able to apply the skills they have been taught to a variety of different settings, showing independence with their learning.

Review date:
September 2025