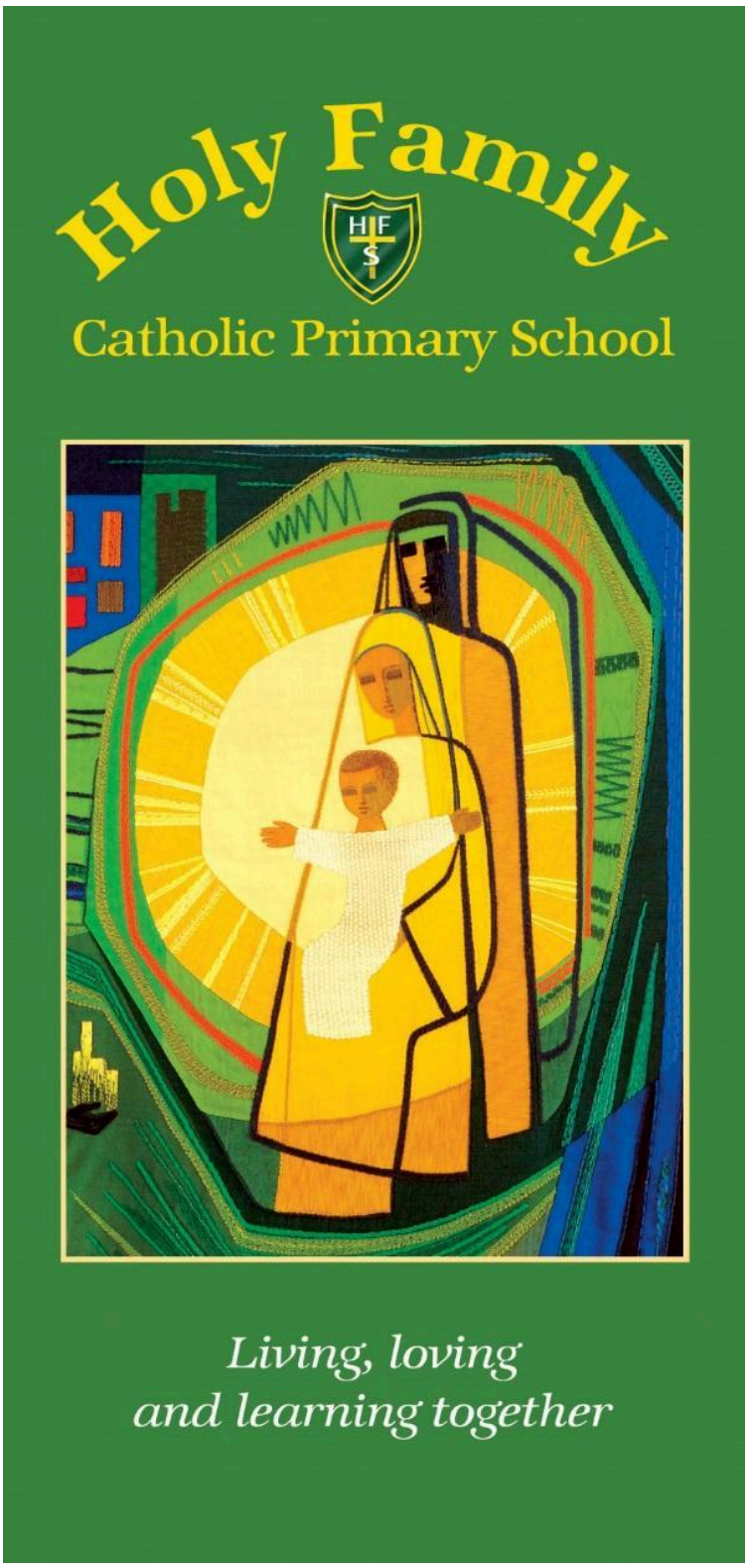
Holy Family Catholic Primary School



Science Policy

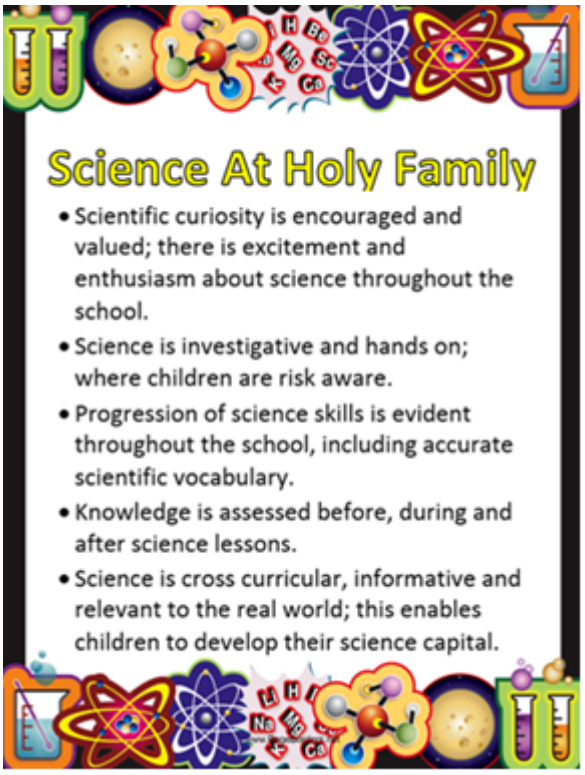
SCIENCE POLICY

Mission Statement

This policy has been written in line with the School's Mission Statement.

'In our Catholic School, with God at the centre of our lives, we offer every child a high standard of education. We meet individual needs, in a caring and loving community, which celebrates our faith'.

1.	**Intent**
	At Holy Family, we encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire, develop and build upon the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.
2.	**Implementation:**
	Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following: • Science will be taught in planned and arranged topic blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge, through building on previously learnt knowledge. • Knowledge organisers and low-stakes mini quizzes are used to consolidate prior learning and lead to acquisition and retention of new knowledge. • Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up. • We build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence. • Working Scientifically skills are embedded into, and highlighted within, 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 topics. • Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts. • Children are offered a range of visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class. • Regular events, such as Science Week or project days, such as RSPB birdwatch, allow all pupils access to broader provision and the acquisition and application of knowledge and skills. Where possible, these events involve families and the wider community.

3.	**Impact:**
	The successful approach at Holy Family results in a fun, engaging, high-quality science education that provides children with the foundations and knowledge for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum. Through various workshops, trips and interactions with experts and local charities, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Science capital is embedded and built upon through learning about the possibilities for careers in science. This ensures that children are aware of positive role models within the field of science from the immediate and wider local community. From this exposure to a range of different scientists from various backgrounds, all children feel they are scientists and capable of achieving. Children at Holy Family overwhelmingly enjoy science and this results in motivated learners with sound scientific understanding.
4.	**Teaching and Learning**
	Staff and children were involved in the creation and review of the Holy Family Science Principles.  These posters are on display on the working wall in science and referred to throughout the coverage of each science topic. ● Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. ● Teachers ask a range of questions which enable all children to take part, listening carefully to answers and taking learning forward, using open and closed questions and allowing children time to think. ● Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge ● Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up. ● New vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.

	● Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career. The key knowledge for each topic and across each year group is mapped across the school and checked at the end of each science topic. ● Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. **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. Children's starting points are identified at the beginning of each science topic and the children are able to convey and record what they know already. At the end of the block, children's knowledge is checked in line with the key knowledge identified prior to the teaching block. 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 and teachers ensure that this is developed within each lesson and throughout each science topic. The science curriculum ensures that children are provided with regular opportunities to 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 and this is embedded within lessons and focuses on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils are given the opportunity to seek answers to questions through collecting, analysing and presenting data. Fair test planning sheets are used in each key stage and develop the progression of fair testing throughout the key stages.
	Assessment
	Children's progress is continually monitored throughout their time at Holy Family Primary School and is used to inform future teaching and learning. 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 as set out in the National Curriculum. These are set out as statutory requirements. We also draw on the non-statutory requirements to extend our children and provide an appropriate level of challenge. Assessment for learning is continuous throughout the planning, teaching and learning cycle. At the start of each topic, the children complete a mini-quiz and mind map to enable teachers to pinpoint their starting points. These mini quizzes are then repeated at the end of the topic to show the progress of knowledge. At the end of each science topic, key knowledge is assessed using summative assessment sheets. In EYFS, we assess the children's Understanding of the World according to the Development Matters statements. Working Scientifically skills are assessed at the end of each term using a topic assessment from the previous year group's science topics. This informs staff about retention of science knowledge. Each strand of WS is visited throughout the year in these WS assessments. Each strand of science is also covered. The WS assessment lessons are taken from the PSTT Plan Assessments.
	Planning
	Planning is a process in which all teachers are involved. Teachers plan a sequence of lessons following the National Curriculum objectives. To support their planning, teachers have access to the Hamilton and Twinkl resources.

5.	**Inclusion**
	At Holy Family, we aim to meet the needs of all our children in our science planning and in providing a variety of approaches and tasks appropriate to all children. This involves providing opportunities for SEND children to complete their own projects, with support, to develop speech and language skills, as well as scientific skills and knowledge. This will enable children with learning and/or physical difficulties to take an active part in scientific learning and practical activities and investigations. Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through a range of challenging activities. At Holy Family we are committed to providing all children with an equal entitlement to scientific activities and opportunities regardless of race, gender, culture or class.
6.	**Health and Safety**
	Staff and pupils should be aware of health and safety issues as outlined in the 'Be Safe' document published by ASE (available in Science area). Staff assess risk as part of their planning and adjust lessons accordingly.
7.	**The Role of the Subject Leader**
	It is the responsibility of the subject leader to monitor the standards of children's work. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school. Equipment is audited by the Science coordinator and resources purchased from a departmental budget as determined by the School Development Plan.

Jennifer Rockall
Science Subject Leader
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