

OUR LADY IMMACULATE CATHOLIC PRIMARY SCHOOL SCIENCE POLICY

Aims of our 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 enquiry – using and developing skills 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.

What does science look like at Our Lady Immaculate Catholic Primary School?

At Our Lady Immaculate staff and children worked together to devise a set of science principles, which underpin what science looks like across our school.



We have 'wow' moments!

Science is good at our school when ...

Learn practically, explore ideas and investigate to find things out.

Our curriculum is progressive and we build on what we already know.

We learn from our mistakes.

We make links to what we already know and we remember what we have already found out.

Children lead investigations and are curious about the world around them.

We learn the meaning of new words in science that we can use elsewhere.

We have opportunities to ask and answer questions.

We work scientifically within every science lesson in different ways and using different skills.

We work collaboratively and have opportunities to talk about our ideas.

We share what we are learning with our families.

Lessons are fun and interactive - we share our thinking in a purposeful way.

Our vision
we strive to provide a high quality and engaging science curriculum which encourages and enables our children to explore and discover the world around them, sparking their curiosity so that they develop a deeper understanding of our world and beyond.

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At Our Lady Immaculate Catholic Primary School, science is a time for children to explore their curiosity. Children undertake practical experiments to investigate questions they pose. They predict and explore questions on a number of topics and build skills around scientific enquiry. Children are confident in doing science by demonstrating a willingness to modify ideas and take risks. They seek to collaborate and work co-operatively with their peers, using a range of Mind Friendly learning techniques.

Children view themselves as scientists in the process of learning. They look forward to doing science by demonstrating a desire to learn more.

Each year Our Lady Immaculate Catholic Primary School holds a science week with a focus on introducing children to a range of topics.

Teaching and learning style

We recognise that children learn in different ways and we therefore adapt teaching and use a variety of strategies to provide a wide range of learning opportunities. This allows each child to maximize their learning potential. Many of our teaching strategies are designed to encourage children to share their learning with others.

Our science lessons include but are not limited to:

- Whole class teaching
- Group activities/tasks
- Enquiry based research activities
- Asking and answering questions
- Paired tasks (working with a partner)
- Talking partners
- Role-play/hot seating
- ICT activities
- Discussions
- Planning investigations
- Recording
- Formal written tasks
- Real contexts
- Teacher demonstration
- Supported activities
- Independent activities
- Different stimuli to initiate questions and investigations
- Out of classroom learning (using the environment as a teaching resource)
- Revision of basic knowledge and vocabulary

We also recognise that there are children of widely different scientific abilities in all classes and we have high expectations for all. . We ensure that our lessons are inclusive through the adaptive teaching approach by providing suitable learning opportunities for all.

Children's recording

Children record their work in science in a variety of age-appropriate ways. Children from Year 1 – 6 have individual exercise books to record their science work. All year groups carry out practical work and this is recorded through photographs and video clips that showcase our learning.

Science curriculum planning

The National Curriculum 2014 Programme of Study underpins our curriculum. We follow a scheme of work for science, which is called Plymouth Science.

Our long-term plan maps the scientific topics studied in each term during the key stage. The science subject leader works this out in conjunction with the curriculum lead and teaching colleagues. Science is taught weekly as we recognise it is part of the core curriculum, as well as being taught during our science week.

The medium-term plans from our chosen scheme of work (Currently Plymouth Science) sequence the learning into cohesive steps to ensure progression and coverage of the key knowledge carefully alongside the working scientifically skills.

Our science curriculum is designed so that children build upon prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge during each unit and progression is key within the scheme of work, so that the children are increasingly challenged as they move up through the school.

Foundation Stage

We teach science in EYFS as an integral part of the topic work covered during the year, focusing on understanding of the world. We relate the scientific aspects of the children's work to the objectives set out in the Early Years Foundation Stage (EYFS). Science makes a significant contribution to the objective in the EYFS of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water or exploring seasons outdoors.

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 – from Years one to six children encounter science texts through our shared reading scheme.. The children develop oral skills in science lessons through discussions using learning to learn/collaborative techniques and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information in various ways, both inside and outside the classroom.

Mathematics

Science contributes to the teaching of mathematics in many 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 and where applicable will show results in the format of graphs or tables. They use numbers in many of their answers and conclusions.

Geography

In the primary National Curriculum, geography and science are closely linked through the study of the natural world. Geography develops pupils' understanding of weather, seasons, landscapes and environments, which supports scientific learning about living things, materials and physical processes. Both subjects emphasise observation, investigation, and enquiry skills, helping children to understand how the Earth's physical features and natural systems work together.

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Computing

Children use computing 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, Apple Mac books and iPads. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

Personal, social and health education (PSHE)

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 the subject in that it gives them opportunities to take part in debates and discussions.

Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life. 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.

Teaching science to children with special educational needs and disability

We teach science to all children, whatever their ability as we adapt so lessons are suitable for all. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are adapted to meet the needs of children with learning difficulties. Our work in science takes into account the targets set in the children's School Support Plan (SSP).

Assessment and recording

We believe that effective assessment provides information to improve teaching and learning. We give learners regular feedback on their learning so that they understand what it is that they need to do better. This allows us to create and amend planning based on a sound knowledge of each pupil. We give parents regular written and verbal reports on their child's progress so that teachers, children and parents are all working together to raise standards for all our children.

Assessment in science is viewed as part of the assessment for learning cycle. Learning objectives and outcomes are discussed with the children during lessons. Children are provided with opportunities for self/peer-assessment and improvement. Marking is in line with our schools marking policy. Teachers monitor the acquisition of skills, knowledge and understanding through appropriate questioning, observations and discussions with groups and individuals.

At the start of each lesson we recall with the children what they already know/what they remember from previous lessons. During units of work we assess the children's understanding through questioning and group/focused work, and through their written work. At the end of each unit, pupils

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in Key Stage One and Two complete post assessment quizzes/tasks that assess understanding of what they have learnt.

At Key Stage 1 the only statutory assessment for science is teacher assessment and therefore assessments will be recorded appropriately. Standards will be moderated within the school.

At Key Stage 2 similar arrangements will be followed. The assessment of pupils will rely on a mixture of evidence from pupils' everyday practical work throughout the Key Stage and more independent investigations carried out by the pupils.

Across both Key Stages, the teacher assessment exemplification materials will be used to support teachers' assessment of science.

Resources

Class teachers are responsible for informing the science leaders of resources, which are required in order to deliver their planned curriculum. We keep resources in a central location which is organised into themes/units. Teachers are aware of where they are kept.

Equal Opportunities

Wherever possible, teachers should provide equal access to the curriculum by:

- Adaptive teaching where necessary for children, including supporting less able children, extending the more able, catering for the needs of children with English as an Additional Language and supporting children with Special Educational Needs including physical impairment.
- Ensuring girls and boys participate equally, by providing positive role models, images and teaching strategies.
- Providing positive role models regarding ethnicity whilst being sensitive to cultural beliefs and values.

Evaluation

- The policy will be evaluated in line with the school's review policy
- Evaluation will include: effectiveness, ease of implementation, resourcing issues, identifying any amendments needed and additions required to the policy as a result of legislation or other changes in the science curriculum.

Governors

Governors will be involved in the monitoring and evaluating of the policy and the implementation of Science across the whole school. The curriculum coordinators will keep governors informed of the implementation and changes in policy and changes in legislation and curriculum.