



# A Guide to Science at St. Mary's Catholic Academy



## Our Vision

At St. Mary's our vision is to ignite pupils' natural curiosity with practical hands on experiences that encourage questioning to ensure that they develop a deeper understanding of the world around them.

## Introduction

Science is a core subject of the National Curriculum and pupils engage in science activity every term at both key stages. At St. Mary's, every Science lesson is exciting and aims to be inquiry-based at every opportunity. Pupils in Foundation develop their knowledge, understanding and skills through exploratory play, and direct teaching from which the pupils undertake planned tasks. The work covered in Key Stage 1 builds on the nationally recognised curriculum for pupils aged under five. The pupils conduct simple tests and are scaffolded in their enquiries. In Key Stage 2, the pupils conduct independent enquiries which test the theories that have been taught in lessons. Throughout the whole school, the teaching of Science enriches the children's lives and supports them to gain a true awareness of the world around them. Children should see themselves as an important part of society and be encouraged to have a curiosity to find out why, by predicting how things behave and analyse their causes.

## Science Teaching Aims

**In the teaching of Science across school we;**

- Develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- Stimulate and excite pupils' curiosity about changes and events in the world.
- Satisfy this curiosity by developing children's scientific knowledge.
- Engage pupils as learners at many levels by linking ideas with practical experience.
  - Help pupils to learn to question and discuss scientific issues that may affect their lives.
  - Help pupils develop, model and evaluate explanations through scientific methods of collecting evidence using critical and creative thought.
- Show pupils how major scientific ideas contribute to technological change and how this impacts on improving the quality of our everyday lives.
- Undertake scientific enquiry and promote awareness of global environmental issues.



## The Science Curriculum

Pupils observe, explore and ask questions about living things, materials and physical phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. Afterwards, pupils evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share ideas and communicate them using scientific language, drawings, charts and tables with the help of ICT if it is appropriate. Children should complete at least one investigation per topic in accordance with 'Working Scientifically' in the National Curriculum. Each investigation should be written up in an age appropriate way and data collected should be displayed in an age-appropriate way, eg, table, bar chart, line graph.



- **EYFS** - In the Early Years Foundation Stage the stepping stones set out in the Early Learning Goal: Knowledge and Understanding sets the foundations for learning scientific skills.
- **KS1** – 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.
- **KS2** - In Key Stage 2 pupils develop their understanding of the processes of science through different styles of enquiry. We aim to equip pupils with the scientific knowledge required to understand the uses and implications of science today and for the future.

## Our Key Priorities

- To set high expectations throughout school and ensure the teaching of Science is consistent across all key stages including the use of specific scientific vocabulary.
- To promote the use of investigations and practical skills by conducting experiments using a variety of equipment that hook and motivate learning.
- Assessment takes place at the beginning and end of each unit of work. Teachers note any attainment and progress which is significantly lower or higher than expected. At the end of each Driver topic, the children also undertake a 'working scientifically' assessment that the teachers use to make a judgement about the pupils' practical capabilities.
- Pupils need to be routinely challenged to think critically and are motivated by opportunities to ask and answer awe and wonder questions through scientific research.

### Celebrating learning

Our Science learning will be celebrated by:

- Show and Tell evening at our link Secondary School to showcase our scientific skills.
- Develop outreach relationships with Nottingham University.
- Science themed activity week in the Lent term.
- Opportunities for festivals and events within our primary school partnership - facilitated by the Ogden Trust.
- Display examples of 'working scientifically' in the classrooms and on the school blog.

### Ideas for developing a child's interest in Science.

- Visit local attractions such as the Magna Centre and the National Space Centre.
- Visit the free Big Bang Fair at the NEC to experience mind-boggling shows and try innovative hands-on activities.  
<https://www.thebigbangfair.co.uk/>
- Keep children informed about latest scientific research eg. watch Newsround or read the newspaper together.
- Find out about how science can support developments in different parts of the world eg. <https://practicalaction.org/> or <https://cafod.org.uk/>
- Encourage your child to become more active with science at home.  
<https://wowscience.co.uk/>

