



# Science Policy

*'Here at St Monica's, we recognise that we are all cherished members of God's family. We love and care for one another, and trust God to guide us in all we do and say. By learning together, we aim to achieve and by working together, will succeed'.*

## OVERVIEW

Science teaching at St Monica's should provide opportunities to:

- develop knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences.
- learn about ways of thinking and of finding out about and communicating ideas.
- explore values and attitudes through science.

## INTENT

At St Monica's we aim to embed a lifelong love of science within our children. Through a varied curriculum we provide opportunities for our children to develop knowledge and understanding of important scientific ideas, processes & skills and how to relate these to everyday experiences. All children learn about ways of thinking and of finding out about and communicating ideas. Teachers plan and challenge children according to their needs and provide opportunities to explore values and attitudes through science. We provide our children with wider opportunities in science and make cross-curricular links to other subjects.

## Knowledge and Understanding

Children should:

- Be curious about things they observe, and experience and explore the world about them with all their senses.
- Use this experience to develop their understanding of key scientific ideas and make links between different phenomena and experiences.
- Know and understand the life processes of living things.
- Know and understand the physical processes of materials, electricity, light, sound and natural forces.
- Know about the nature of the solar system, including the Earth.
- Begin to think about models to represent things they cannot directly experience.
- Try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas.

## **Processes and Skills**

Children should:

- Acquire and refine the practical skills to investigate questions safely.
- Develop skills of predicting, asking questions, making inferences, concluding and evaluating based on evidence and understanding and use these skills in investigative work.
- Practice mathematical skills e.g. counting, ordering numbers, measuring, drawing and interpreting graphs and bar charts in real contexts.
- Learn why numerical and mathematical skills are useful and helpful to understanding.

## **Language and Communication**

Children should:

- Think creatively about science and enjoy trying to make sense of phenomena.
- Develop language skills through talking about their work and presenting their own ideas using sustained and systematic writing of different kinds.
- Use scientific and mathematical language including technical vocabulary and conventions, and draw diagrams and charts to communicate scientific ideas.
- Read non-fiction and extract information from sources such as reference books or internet.

## **Values and Attitudes**

Children should:

- Work with others, listening to their ideas and treating these with respect.
- Develop respect for evidence and evaluate critically ideas which may or may not fit evidence available.
- Develop a respect for the environment and living things and for their own health and safety.

## **IMPLEMENTATION**

- Through effective learning of science, we develop children's knowledge and key skills during each unit of work.
- Professor Brainstorm brings his science shows to school regularly. Children get the opportunity to help with the experiments and the challenge to explain how the experiments work.
- With effective subject management we are a well-resourced school.
- We strongly encourage all children to use specific scientific related vocabulary and provide regular opportunities to develop questioning and thinking.
- Children will use a range of resources to develop their knowledge and understanding that is integral to their learning and develop their understanding of working scientifically.

- We provide a clear science curriculum of work in line with the National Curriculum where teaching and learning plans for practical investigative opportunities within science sessions.
- Children will reflect on previous learning and cross-curricular links will be made where appropriate.
- Children will be able to build on prior knowledge and link ideas together, enabling them to questions and become enquiry-based learners.

### **Teaching and Learning**

At St Monica's we use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills and understanding. Sometimes we do this through whole-class teaching, while at other times we engage the children in an enquiry-based research activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs. Where appropriate, they use ICT in science lessons where it enhances their learning. They take part in role-play and discussions and they present their reports to the rest of the class. They engage in a wide variety of problem-solving activities.

### **Delivering the Science Curriculum**

Children in the Foundation Stage are taught science through the Early Learning Goals, Understanding the World - The Natural World. Children are encouraged to solve problems, make decisions, experiment, predict, plan and question in a variety of contexts and to explore and find out about their environment.

The KS1 and KS2 children are taught science discretely. The science is covered over a two-year cycle.

### **Differentiation**

We recognise that there are children of widely different scientific abilities and we ensure that we provide suitable learning opportunities for all children. We achieve this by matching the challenge of the task to the ability of the child, appropriate questioning, differentiated tasks, grouping and use of resources including support staff.

### **S.E.N. Provision**

We provide learning opportunities that are matched to the needs of children with learning difficulties. Where appropriate, our work in science takes into account the targets set in the children's support plans.

## **Equal Opportunities**

All children are offered a broad, balanced and differentiated curriculum, which respects their gender, ethnic backgrounds, social backgrounds and special educational needs.

## **Resources**

Key Stage 1 resources are located in storage boxes on shelving in the infant building (opposite the staffroom).

Key Stage 2 resources are located in the ICT suite.

## **Community Links**

The school also takes part in the annual Science Week event. As part of this celebration of science, we hold a 'Stay & Investigate' morning whereby parents/Grandparents are encouraged to come in and take part in investigations with their children/grandchildren.

Use is made of local facilities. Dutton's Pond and Flixton Gardens are useful for environmental science and wildlife studies.

## **Safety**

Safety must always be of paramount importance in the classroom and some practical activities will require special safety precautions. We are aware of the potential dangers of some equipment and tools the children will use, and it is important that the children are familiar with simple safety procedures. Children learn to be safe by handling and using equipment in a well-organised environment where the use of space is carefully managed.

## **IMPACT**

- Children enjoy and are enthusiastic about science in our school.
- There is a clear progression of children's work and teachers' expectations in our school.
- Children's work shows evidence of the curriculum coverage.
- Children will be able to question ideas and reflect on knowledge.
- Children will work collaboratively and practically to investigate.
- Our governors are kept up to date with developments in the way that science is run in our school with subject reports.

## **Assessment, Record Keeping and Reporting**

Science can be assessed in a variety of ways including observation of a child or group on task, discussion with children about their task, questioning and viewing work in books.

### Foundation Stage

Ongoing assessments are made throughout the year based on the Early Learning Goals, under 'Understanding the World' - The Natural World.

### Key Stage 1

Teachers assess each unit by using key questions from the knowledge organiser, at the end of each unit.

### Key Stage 2

Teachers assess each unit by using key questions from the knowledge organiser, at the end of each unit.

Both KS1 and KS2 teachers record summative assessment via OTrack.

### **Monitoring and Review**

The implementation of this policy will be monitored in line with the school's Monitoring and Evaluating the Curriculum Policy and the policy will be reviewed by the staff, annually.