

# St. Michael's Nursery and Infants School



## Science Policy

### Introduction

Science stimulates and excites pupils' curiosity about phenomena and events in the world.

It teaches methods of enquiry and investigation to stimulate creative thought.

Through science, children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national and global level.

### Aims

Develop knowledge and understanding of important scientific ideas, processes and skills and relate these to everyday experiences:

- ❖ Be curious about aspects relating to the world around them that they observe, experience and explore;
- ❖ Use experiences to develop understanding of key scientific ideas;
- ❖ Use models to represent things that they cannot directly experience.
- ❖ Acquire and refine practical skills necessary to investigate ideas and questions safely;
- ❖ Develop skills of sorting, classifying, planning, predicting, questioning, inferring, concluding and evaluating through investigative activities;
- ❖ Make informed decisions based on evidence and own experiences;
- ❖ Practise numeracy skills (counting, ordering numbers, measuring, drawing and interpreting graphs and charts). In real contexts.

Develop effective ways of thinking, finding out about and communicating scientific ideas and information:

- ❖ Think creatively about science and enjoy trying to make sense of phenomena.
- ❖ Develop their own ideas on how to investigate an idea or phenomena.
- ❖ Develop language skills through talking about their work and presenting their ideas in different ways.
- ❖ Use progressively technical scientific and mathematical vocabulary.
- ❖ Use a range of media and secondary sources, including ICT to extract scientific information.

Explore values and attitudes through science:

- ❖ Work with others, listening to their ideas and treating these with respect.
- ❖ Develop a respect for the environment and living things and show they understand how human activity impacts these things.
- ❖ Develop responsibility for their own health and safety and that of others when undertaking scientific activities.

## **Implementation**

Our principle aim is to develop children's knowledge, skills and understanding and a variety of teaching and learning styles are used, including:

- ❖ Whole class teaching;
- ❖ Independent or paired work;
- ❖ Collaborative group work;
- ❖ Enquiry based activities.

Children are encouraged to ask, as well as answer, scientific questions. They have the opportunity to use a variety of resources including ICT, to enhance their learning. Wherever possible, children are involved in 'real' scientific activities and practical work.

## **Resources**

A selection of science equipment including big book texts and science topic boxes are stored in the central resource room. There are also books that support science in classroom reading areas.

## **Equal Opportunities & Inclusion** (see Equal Opportunities Policy)

We are committed to providing a teaching environment conducive to learning. Each child is valued respected and challenged regardless of ability, race, gender, religion, social background, culture or disability.

## **Curriculum** (see subject overview appendices)

Science teaching begins in the Foundation Stage, knowledge and understanding of the world as an integral part of the topic work covered during the year. The scientific aspects of the children's work are related to the objectives set out in the Early Years Foundation Stage. The New National Curriculum is used as a basis for curriculum planning in Key Stage 1, with unit planning adapted from Twinkl.

## **Science Throughout the Curriculum**

### **Literacy**

Science contributes significantly to the teaching of Literacy by actively promoting the skills of reading, writing, speaking and listening. Some of the texts used in literacy are of a scientific nature i.e. 'Life Cycle of a Sunflower'. Children develop speaking and listening skills in science lessons through discussion and recounting observations. They develop writing skills through recording information and observations.

### **Numeracy**

Science contributes to the teaching of numeracy in a number of ways:

- ❖ Measures (length, mass and capacity) develop children's ability to use and apply number;
- ❖ Investigations develop children's skill at estimating and predicting;

- ❖ *Number is used in many answers;*
- ❖ *Information is displayed in various ways thus developing data handling skills.*

## *ICT*

*Where appropriate ICT is used to support science in the following ways:*

- ❖ *Online activities and software are used to develop children's scientific skills;*
- ❖ *CD-Roms and the Internet are used to find information;*
- ❖ *Data is recorded and presented in different ways using data handling software;*
- ❖ *Children photograph investigations as a method of recording;*
- ❖ *A digital microscope is used for close observation.*
- ❖ *Data Logging equipment.*

## **Special Educational Needs & Gifted & Talented**

*Science is taught to all children, whatever their ability. Through careful planning, a broad, balanced and purposeful curriculum is ensured for all children, and learning opportunities are provided which are matched to the ability of each child. The New National Curriculum allows continuous progression following the Early Years Foundation Stage, allowing all children to maximise their potential.*

### **Health and Safety** (See Health & Safety Policy & Risk Assessments)

When working with tools, equipment and materials in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:-

1. About hazards, risks and risk control.
2. To recognise hazards, assess consequent risks and take steps to control the risk to themselves and others.
3. To manage their environment to ensure health and safety of themselves and others.
5. To explain the steps they take to control risk.

### **Assessment and Recording**

All children are assessed by making judgements as they are observed during lessons. Judgements are made against the individual lesson objectives and the End of Year expectations throughout KS1. The statements are highlighted throughout the year and an overall judgement made at the end of the year. Evidence can be found in pupil work books. In the EYFS evidence to support learning on the different strands linked to science can be found in the individual learning journey books.

### **Monitoring and Review**

Monitoring is carried out in the following ways:

- ❖ Informal discussion with staff / children;
- ❖ Classroom observation;
- ❖ Observation of children's work.

The Science subject leader will:

- ❖ Write and review the Science policy.
- ❖ Regularly audit Science equipment.
- ❖ Monitor Science throughout the school.
- ❖ Support colleagues and organise training for the professional development of staff.