ST. MATTHEW'S C.E.
PRIMARY SCHOOL & NURSERY

SCIENCE POLICY

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"Be blessed by God, be happy and aspire to be…"

St Matthew's Church of England Primary School and Nursery

Science Policy

Mission Statement:

St. Matthew's C.E. Primary School and Nursery is dedicated to providing an education which enables every child to fulfil their best potential. It seeks to promote academic, emotional and spiritual growth in a Christian environment, welcoming children drawn from diverse cultures.

Vision Statement:

Inspired by Jesus' words (Matthew 5: 1-12), we strive to promote academic, emotional and spiritual growth in a Christian environment for all members of our school family.
We can all **'Be blessed by God, be happy and aspire to be…'**

Introduction

At St Matthew's C.E. Primary School we believe that teaching and learning in science should stimulate and excite children's curiosity about the world around them. It provides first hand experiences and support for children to develop enquiring minds, learning how to question and discuss science through collaboration. Starting from the views already held, children are given the opportunity to have their views challenged, to change their opinions and ultimately improve their understanding. A planned range of practical experiences set in meaningful contexts helps to develop a range of investigative skills and allows children to take risks and learn from their mistakes, developing them into independent learners.

Aims

The national curriculum for science 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 enquiries 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.

Principles of good science

- Children's curiosity is encouraged and valued; they are excited and enthusiastic when anticipating in their science lessons.
- Science is practical and hands on and children enjoy learning through exploration and questioning; they have the opportunity to use good quality resources.

- Enrichment events/school visits/workshops happen regularly.
- Progression of science skills is evident and taught throughout the school.
- Children confidently use accurate scientific vocabulary in context.
- Teachers use different assessment strategies during science lessons.
- All pupils are actively engaged in a science enquiry; using a variety of enquiry strategies, independently making decisions, answering their own questions.

Breadth of study

The programmes of study for science are set out year-by-year for key stages 1 and 2 in the national curriculum. Class teachers are responsible for ensuring that all of the relevant statutory content is covered within the school year. The national curriculum gives a full breakdown of the statutory content to be taught within each unit. Non-statutory guidance is also provided which staff members are encouraged to use. A detailed breakdown of the topics and skills taught in each year group can be found in the Science Key Skills document.

Working scientifically

Class teachers must ensure that there are frequent opportunities for pupils to 'work scientifically' within the curriculum. At St Matthew's children work scientifically by:

- carrying out comparative tests
- taking part in fair tests (KS2)
- making observations over time
- searching for patterns
- carrying out collaborative and independent research
- identifying and classifying

Pupils are required to work scientifically within all areas of the science curriculum.

Foundation Stage

At this phase children are:

- developing the crucial knowledge, skills and understanding that help them make sense of the world;
  involved in activities based on first-hand experiences that encourage exploration, observation, problem solving, prediction, critical thinking and decision-making and discussion;
- experiencing a wide range of activities, indoors and outdoors, including adult focused, child-initiated and independent play;
- stimulated, interested and curious;
- observed by adults and learning is recorded in a variety of ways.

Years 1 and 2

During years 1 and 2, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking simple questions and recognising that they can be answered in different ways
- observing closely, using simple equipment
- performing simple tests
- identifying and classifying
- using their observations and ideas to suggest answers to questions
- gathering and recording data to help in answering questions.

Years 3 and 4

During years 3 and 4, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- asking relevant questions and using different types of scientific enquiries to answer them
- setting up simple practical enquiries, comparative and fair tests
- making systematic and careful observations and, where appropriate, taking accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- gathering, recording, classifying and presenting data in a variety of ways to help in answering questions
- recording findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- reporting on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- using results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- identifying differences, similarities or changes related to simple scientific ideas and processes
- using straightforward scientific evidence to answer questions or to support their findings.

Years 5 and 6

During years 5 and 6, pupils should be taught to use the following practical scientific methods, processes and skills through the teaching of the programme of study content:

- planning different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary
- taking measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate
- recording data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs
- using test results to make predictions to set up further comparative and fair tests
- reporting and presenting findings from enquiries, including conclusions, causal relationships and explanations of and degree of trust in results, in oral and written forms such as displays and other presentations
- identifying scientific evidence that has been used to support or refute ideas or arguments.

St Matthew's Church of England Primary School and Nursery – Science policy

Teaching and learning

At St Matthew's C.E. Primary School, 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, ICT is used in science lessons to enhance their learning. They take part in discussions and they present their findings to their peers. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, for example, investigating a local environmental problem, or carrying out a practical experiment and analysing the results.

We recognise that in all classes children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child.

Planning science

Long term planning – The school has developed a key skills document for science in line with the National Curriculum, which highlights the topics and key skills that should be taught in each year group throughout the school year. Staff are also provided with a range of non-statutory material to assist them with their long term planning.

Medium term planning - Teachers should complete a medium term plan for each unit of work so that they can plan for clear progression. Teachers will use the school medium term plan pro forma for their planning. These plans will be shared with the subject leader to ensure continuity between year groups and high quality teaching is taking place.

Short term planning - Short term planning is the responsibility of individual teachers, who build on their medium term planning by taking account of the needs of children in their class and identifying the way in which ideas might be taught. Science should be taught every week (or equivalent) and in some cases there will be more than one lesson.

Assessment

Assessment for science is carried out in line with the whole school policy. Questioning is a key aspect of formative assessment used in science lessons. Assessments are used to inform planning and teaching and learning. Written or verbal feedback is given to the child in line with school marking policy, to help guide their progress. Targets, written or verbal, are used to achieve higher standards in science.

The role of the subject leader

The Science subject leader is responsible for ensuring that all staff are adequately trained so that they are able to deliver the curriculum effectively. This will include organising CPD, leading staff meetings, sharing resources for planning and teaching and supporting colleagues. Regular communication with staff is sustained and all staff can speak to the subject leader if they require any further support.

Resources

- All resources are stored centrally in the science cupboard.
- Resources are organised in boxes.
- Staff are responsible for informing the science coordinator when extra resources are needed, when there are breakages and when consumables are running low.
- The science coordinator will update and replenish resources when needed.

Equal opportunities

We aim to create equality of opportunity for all our children, whatever their gender, abilities or background and give them chance to demonstrate what they know, understand and can do.

SPECIAL EDUCATIONAL NEEDS - The School's Policy document for Special Educational Needs explains in full the procedures which are in place for providing for pupils with Special Educational Needs. This is in line with the Code of Practice for all L.A. Schools. Within Science, tasks are differentiated to ensure access to the National Curriculum and to offer activities which are relevant to the conceptual development of the child.

MORE ABLE PUPILS - Pupils with above average ability are to benefit from a curriculum which offers challenge and opportunities for investigation in order to extend their learning.