

Science Policy

Date agreed by Governors: _____

Review date: _____

Governor signature: _____

Date of next Review: _____

General Introduction:

This policy supports the work of the school in promoting its mission statement, aims and values.

Mission statement:

St Michael's VC School endeavours to provide a happy, safe, caring and stimulating learning environment, based on Christian principles in which all members of the school community are valued as individuals and are encouraged to reach their full potential.

School aims:

At St Michael's we value every member of our school community and our aims are for every child, whatever their background or circumstances, to have the support they need to:

- Develop their understanding of the value of leading a healthy lifestyle
- Work and play in a secure and safe environment in which they are encouraged to develop moral values and mutual respect
- Experience an exciting curriculum which fosters their enthusiasm, develops an enquiring mind and enables every child to achieve his/her full potential
- Access an education for life which promotes British Values that enable all learners to become effective and reliable members of the wider community
- Foster ambition and expectation to carry through to adult life

To achieve these aims all learners, staff, parents and governors will work together to promote our **core values** of peace, courage and respect.



1. Our rationale for teaching science

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

Our **aims** in teaching science include the following.

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our local and global environment.
- Enabling learners to appreciate everyday and technological applications of science, both positive and negative.
- Helping develop and extend our children's scientific concept of their world.

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, pattern spotting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.

Enabling our children to become effective communicators of scientific ideas, facts and data.

2. Our teaching aims

- To teach science in ways that directly involve our learners and are imaginative, purposeful, well managed and enjoyable.
- To encourage our children to ask, as well as answer, scientific questions.
- To give clear and accurate explanations and offer skilful questioning.



- ❑ To make links between science and other subjects.

The Science programmes of study in the 2014 National Curriculum describe a sequence of knowledge and concepts. Whilst it is important that pupils make good progress, it is vitally important that they develop a secure understanding of each key block of knowledge and concepts.

3. How science is structured through the school

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum. We carefully adapt and extend the curriculum to match the unique circumstances of our school.

The school teaches Science through a topic based approach. In all year groups, Science is a driver subject for 50% of the topics which ensures that the subject is high profile in our school. Content is taught carefully and thoroughly and is introduced in the phase areas set out in the National Curriculum: Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2. Scientific enquiry, known as 'Working Scientifically' in the 2014 curriculum, is taught through and embedded within the content of biology, chemistry and physics.

Reception children are taught Science as set out in the renewed EYFS framework.

4. Our approach to science

The essential elements describing how science is taught in our school are described below.

- We use ICT where appropriate in science. Children are given the opportunity to practice science skills and enhance their presentation using carefully-chosen software and hardware including digital cameras, digital microscopes, sound recording equipment and web cams.
- We use the school's network to share science resources and planning.
- The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.
- We actively teach science skills, and sometimes reinforce learning with selected enquiry simulations.
- We encourage children to ask and answer their own questions as far as practicable.
- We use cross-curricular links to science with, for example, design and technology units and to support maths and literacy skills. As examples, pupils develop their maths skills in science through using measures and data handling and their writing skills by writing reports, explanations and instructions.
- Science raises many social and moral questions. We use science to offer our children opportunities to examine some of the fundamental questions in life, for example, the evolution of living things. 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.



5. Equal opportunities in science

Science is taught within the guidelines of the school's equal-opportunities policy.

- We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, linguistic or gender bias.
- We aim to teach science in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds.
- We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.
- In our teaching, science is closely linked with literacy and mathematics.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties and ensure tasks are differentiated to support all learners.
- We recognise that science may strongly engage our gifted and talented children, and we aim to challenge and extend them.

6. Assessment and recording in science

We use assessment to inform and develop our teaching.

- We assess for learning (AfL). Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.
- We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved and by asking questions designed to extend and scaffold further learning.
- By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study. This will be tracked and monitored over time.
- The Y2 and Y6 staff assess children's attainment formally at the end of the KS1 and KS2 programmes of study. This teacher assessment is based on assessment records and work samples.
- Reports to parents are written once a year, describing each child's attainment in science through our topic based approach.

