

Science Policy



St Michael's Primary School

"I have come that everyone may have life, and have it to the full." John 10.10.

Our vision:

"We will prepare the children at St. Michael's school for life, by giving them the opportunity to fulfil their potential within a happy caring Christian environment, where every individual is valued.

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

Intent

It is our aim at St Michael's Primary School that children are given the opportunities to observe, record and draw conclusions about the world around them. Through first hand experiences and other sources of information, the children will learn about the physical, chemical and biological aspects of the world around them. The children will study the main aspects of science, as determined by the National Curriculum 2014.

Basic elements of experiments and investigations will be introduced to help them to become more inquisitive and think of their own scientific questions to explore. We intend to:

- develop children's enjoyment and interest in science and build on children's curiosity and sense of wonder of the natural world.
- use a planned range of investigations and practical activities to give children a greater understanding of the concepts and knowledge of science.
- introduce children to the language and vocabulary of science.
- develop children's basic practical skills and their ability to make accurate and appropriate measurements.
- develop applied learning of maths and computing to science.
- extend the learning environment for our children via our outdoor areas.

Implementation – Scheme and Resources

We use Plan (www.plannassessment.com) resources to support long-term and medium-term planning to deliver the National Curriculum objectives.

- Plan resources ensure that there is clear **progression in scientific knowledge** planned out across the primary phase from EYFS to Y6 in all topics: plants; living things and habitats; animals, including humans; evolution and inheritance; seasonal change; materials; rocks; light; forces; sound; electricity; and earth and space.
- Grammarsaurus lesson plans are used to offer a **quality-planning tool** to scaffold the delivery of National Curriculum / Plan objectives.
- Plan resources ensure that there is clear **progression in working scientifically** skills planned out across the primary phase from EYFS to Y6:

Asking questions and recognising that they can be answered in different ways

Making observations and taking measurements

Engaging in practical enquiry to answer questions

Recording and presenting evidence

Answering questions and concluding

Evaluating and raising further questions and predictions

Communicating their findings.

Implementation - Teaching and Learning

We use a **Mastery learning approach**, which aims to ensure that all pupils have mastered key concepts before moving on.

Pre Assessment/Prior learning → Instruction → Formative Assessment → Correction or Enrichment → Summative

We use **adaptive learning** to enable the vast majority of children to access the National Curriculum. Pupils are likely to learn at different rates and to require different levels and types of support from teachers to succeed. Seeking to understand pupils' differences, including their different levels of prior knowledge and potential barriers to learning, is an essential part of teaching. Adapting teaching in a responsive way, including by providing targeted support to pupils who are struggling, is likely to increase pupil success.

We try to anticipate barriers:

- different levels of prior knowledge
- vocabulary
- a particular production skill such as writing
- a particular SEND like decoding written text or a limited working memory
- cultural experience or EAL
- a common misconception
- a lack of metacognitive knowledge or strategy
- inherent complexity of resources/information

We address these by a variety of strategies some examples are:

- read a text in advance
- supply background knowledge
- use pictures/video to contextualise upcoming information
- teach vocabulary
- introduce a concept via discussion
- teach necessary learning behaviour
- improve accessibility (e.g. clarity of resources, font size, proximity to speaker, visibility of whiteboard, reader pens) - plan to scaffold - prepare a model to share with, for example, a visualiser
- plan targeted support from a TA before, during or after an input from the teacher

Resources

Whole school resources are stored in the science cupboard, which is the responsibility of the science coordinator.

Class teachers are responsible for cleaning resources and safely returning them to the correct places. Resources, including books, which are relevant to a particular year group, can be found in teachers' classrooms.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Any damaged equipment should be dealt with appropriately to ensure the safety of all users. Risk assessments are kept in the head teacher's office.

Role of the Science Coordinator

The role of the Science coordinator is to:

1. Develop a policy and complete a science development plan each academic year.
2. Support colleagues in their development of work plans.
3. Monitor the resources and advise the Head Teacher of any action needed.
4. Take responsibility for the purchase and organisation of central resources for science after discussion with the Head Teacher.
5. Keep up to date with developments in science education by attending cluster group meetings, training courses and conferences and discuss information with colleagues as/when appropriate.
6. Monitor the teaching and learning of science throughout the school
7. Meet with the Science Governor to discuss science at St Michael's.
8. Plan and arrange extra-curricular activities for the school i.e. after school clubs, whole school science assemblies, science workshops, science week, and science shows. (The Head Teacher must grant Permission).

Impact - Assessment

Teachers use formative and summative assessment during lessons and marking within and after the lesson. Written work is marked regularly and clearly as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work. Comments in a child's book must be relevant to the learning objective to help children to better focus on future targets. The whole-school marking policy must be followed and children will need the opportunity to green pen edit their work to show improvements.

Each unit of work is assessed summatively using Headstart science assessments to confirm whether pupils have grasped the unit of work or if they require further input. A judgement is communicated to parents at the end of the school year in a child's personal report.