

Science Curriculum Intent:

Science is an opportunity to ask questions, create curious learners and develop scientists of the future in our ever changing world.

At St Michael's we believe that a high quality science education provides the foundations for understanding the world and engaging children in problem solving activities to link learning across the subjects. We believe that science is vital to the world's future and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Our children should be encouraged to develop a sense of excitement and a curiosity of the world around them, ask questions, learn new knowledge and key vocabulary. This vision will begin from our Foundation Stage in Nursery and Reception and carry through the school years.

Working scientifically is a key element of our Science curriculum and is interwoven into science topics and lessons. The teachers in each year group plan hands on age appropriate activities for the children to engage in to enhance learning, enjoyment and understanding. Lessons will be practical and taught both indoors and outdoors with time to reflect, predict, change and analyse. When planning lessons, teachers should plan them in sequence, reflect on previous learning and provide the children with rich vocabulary to use in context.

We intend to provide all children of all abilities with an inclusive, broad and balanced science curriculum. The teaching staff at St Michael's ensure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills.

Our Science curriculum, in line with the national curriculum, 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 lines of scientific enquiries that help them to answer 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.

Aims (taken from the National Curriculum)

In KS1 the children should be taught to

- ask simple questions and recognise that they can be answered in different ways
- Observe closely, using simple equipment
- Perform simple tests
- Identify and classify
- Use their observations and ideas to suggest answers to questions
- Gather and record data to help in answering questions.

In lower KS2 the children should be taught to

- ask relevant questions and use different types of scientific enquiries to answer them
- set up simple practical enquiries, comparative and fair tests
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including thermometers and data loggers
- Gather, record, classify and present data in a variety of ways to help in answering questions
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts, and tables
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions
- Identify differences, similarities or changes related to simple scientific ideas and processes
- Use straightforward scientific evidence to answer questions or to support their findings.

Science Curriculum Implementation:

As a school we use the Rising Stars 'Switched on Science' scheme of work to ensure there is consistency throughout the school and focus on the key vocabulary in year group. Teachers map out the science topics in their long term plans and ensure each area is taught ready for transition into the next year group. In our Early Years Foundation Stage the teaching staff focus on aspects in Understanding the World and Expressive Arts and Design to build the children's knowledge, vocabulary and curiosity through extensive outdoor learning opportunities and weekly forest

school sessions. These foundations ensure as the children progress through the years they take this enjoyment and inquisitive nature with them to learn new exciting skills.

Science is taught weekly and is also interwoven in other lessons for cross curricular links to keep the magic of science alive. This allows our children to use newly learned vocabulary in all aspects of learning and make links with science and the wider world. Our school is fortunate to have extensive grounds to explore and use for science as well as curriculum rich resources. Every year group takes lessons outdoors as well as engaging in hands on learning with tools and equipment to carry out scientific experiments.

Switched on Science has been designed to cover all the requirements of the National Science curriculum in a way that is intended to develop pupils' understanding of the concepts, practices and perspectives that underpin each discipline of science. It provides many opportunities for our children to explore the 6 lines of enquiry and reflect on these in their lessons. The 6 areas explored throughout the year in each year group are;

Pattern seeking

Group and classify

Observe over time

Using Secondary sources

Comparative work

Working scientifically

Skills are revisited and developed each year which enables the children to consolidate the skills they have learned and transfer these as the curriculum develops.

Science Curriculum Impact:

Our children get excited when discussing science lessons and the enjoyment they have in them. The children are able to reflect on learning and its outcomes clearly and confidently, making links to the wider world where appropriate. The teaching staff see excited learners asking questions to enhance learning and act on this to meet the needs of their inquisitive minds. We endeavour for our children to be confident and creative in their learning whilst understanding the importance of science.

Progress in Science is demonstrated through regularly reviewing and scrutinising children's work to ensure there is a clear progression of skills being taught. Science staff meetings are also held to ensure teaching staff are up to date with new information and support can be given to those who seek it. A map of skills is regularly updated when children's books are being reviewed to ensure each line of enquiry is met throughout the year. When moderating work, pupil voice is also taken into account and a sample of children from each class will be asked to discuss their science learning. From this we see the excitement and children reflecting positively on lessons they have witnessed and taken part in. This also gives the children a chance to showcase the new vocabulary and use it in the correct context.