

SCIENCE INTENT



What we aim to achieve in Science

Our Science curriculum at St. Michael's is rooted firmly within the National Curriculum Programs of Study; our education program aims to equip our pupils with the foundation scientific knowledge needed for understanding the World. We provide opportunities for our pupils to develop the skills to rationally explain what they have observed, investigated and learnt, alongside creating excitement and curiosity about natural phenomena. To this end we promote the fact that lessons should be all about giving children a hands-on experience and enabling children to discover science for themselves.

Science offers so many opportunities for **investigation**, both inside and outside the classroom. It is taught throughout the school, allowing children of all ages to enjoy the subject. Lessons are as interactive and meaningful as possible.

Science is all around us and we aim to contextualise pupils' learning by making the lessons relevant; for example, relating what they are learning to their lives. We want them to talk about the world around them, be **curious** about what they see, encouraging them to ask questions and not to take things for granted, but to wonder how things happen. We encourage them to describe and **explain** what they find.

We build upon previous knowledge and skills, revisiting themes several times throughout the children's time here, allowing for consolidation and an accumulation of knowledge which begins in our Early Years.

Within the curriculum is a Working Scientifically element. This focuses on the skills the children need to become accurate, careful and confident practical scientists mastering skills of planning and carrying out fair tests, using equipment accurately, taking exact readings and measurements and recording this in appropriate and accessible ways.

We want our children to leave St. Michael's able to use science to explain what is happening, predict what will happen and reflect on cause and effect.

BIG IDEAS

CURIOSITY – I am a Scientist because I am **curious**; I ask questions and do not take things for granted, but wonder how things happen.

INVESTIGATION – I am a Scientist because I learn about science by being totally hands-on and I use a systematic and logical approach to **investigating** and finding things out for myself.

EXPLANATION – I am a Scientist because I use evidence and measurements to describe and **explain** and then give reasons for why things happen.

How we deliver Science

At St. Michael's, our positive whole school approach to the teaching and learning of Science encourages the expectation that all pupils are capable of achieving high standards in this subject.

Science is taught by the class teacher in planned and arranged unit blocks which include an **investigation**. Existing knowledge is checked at the beginning of each topic through discussion and quizzes. This ensures that teaching is informed by the children's starting points and takes account of pupil voice, incorporating children's interests. Children are encouraged to ask their own questions and given opportunities to use their scientific skills and research to discover the answers. This **curiosity** is celebrated within the classroom.

Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills. Pupils regularly assessed to identify those with gaps in their learning, thus ensuring all pupils keep up. Tasks are selected and designed to provide appropriate challenges to all learners, in line with the school's commitment to inclusion.

With each class, teaching builds upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, they become more proficient in selecting and using scientific equipment, collating and interpreting results; they become increasingly confident in their growing ability to come to conclusions based on real evidence.

Teachers demonstrate how to use scientific equipment and the various 'Working Scientifically skills' in order to embed scientific understanding. Wherever possible, children are given varied opportunities such as access to outdoor learning and expert-led workshops to further develop their understanding of their surroundings.

Working scientifically, skills are embedded into lessons to ensure they are systematically developed throughout the children's school career. New vocabulary and challenging concepts are introduced through direct teaching, again to be developed further through the years, in keeping with the planned units.

Children are regularly encouraged to share their experiences with both peers and adults, to **explain** their understanding of what they are learning and what they have found out through **investigations**. At the end of each topic, key knowledge is reviewed by the children and rigorously checked by the teacher and consolidated as necessary. Children will review their knowledge organiser and complete a short quiz/test to support the teachers' assessments.