



What we aim for our children to learn in Science

Our Science curriculum at St. Michael's is rooted firmly within the National Curriculum Programs of Study and aims to provide a high quality science education which provide our pupils with the foundation 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.



At St. Michael's, teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science will be taught in planned and arranged unit blocks by the class teacher, 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 that it takes account of pupil voice, incorporating children's interests.
- Children are encouraged to ask their own questions and be 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, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up. Tasks are selected and designed to provide appropriate challenge to all learners, in line with the school's commitment to inclusion.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure that skills are systematically developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the units.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts where possible and relevant.
- Children are encouraged to regularly **explain** their understanding of what they are learning to their peers and adults and to **explain** 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.