Science @ St Aloysius

"Science education should enhance learners' curiosity, wonder and questioning, building on their natural inclination to seek meaning and understanding of the world around."

Wynne Harlen

Curriculum Coverage													
Biology							Chemistry				Physics		
Upper KS2	Y6		Living Things		Animals and Humans		Evolution and Inheritance		Light and Seeing		Electricity		
	Y5		Living Things		Animals and Humans		Materials		Movement, Forces, and magnets		Earth and Space		Sound and Hearing
Lower KS2	Y4		Living Things		Animals and Humans		Materials		Sound and Hearing		Electricity		Sound and Hearing
	Y3		Plants		Living Things		Animals and Humans		Movement, Forces and magnets		Rocks		Light and Seeing
KS1	Y2		Plants		Living Things		Animals and Humans		Materials		Electricity		
	Y1		Plants		Animals and Humans		Materials		Movement, Forces and magnets		Earth and Space		

Intent

At St Aloysius, we believe that Science provides children with the opportunity to understand the world around them and offers an exciting context to apply many of the other skills and disciplines they learn at school. The science National Curriculum identifies three key areas in which the children should be taught: knowledge and understanding; working scientifically and the application of science. At our school, we believe that children learn science best by doing and seeing; by providing the children with a range of opportunities to actively carry out different types of scientific enquiries, we ensure that working scientifically and application of knowledge is embedded into the heart of our science curriculum. Our school endeavours to ensure that every child is given the opportunity to enjoy and make progress in science. In addition, the wider curriculum provides many opportunities to apply and deepen children's understanding of science.

Whilst journeying through our schools, our children:

- *Gain knowledge in science formed through interesting and exciting experiences that enhance awareness of their own abilities and strengths as a learner. They use their prior knowledge and apply taught skills to solve problems and develop the sophistication of science.*

- *See learning in science as an ongoing process not a one-off event, making links with how their learning fits with the world around them, including careers.*
- *Will meet the National Curriculum expectations in science, taught by highly qualified staff who support children to develop mastery of concepts and inspire enthusiasm and interest in the subject.*
- *Have opportunities to experience learning beyond the classroom. This will allow them to enrich their knowledge by visiting science museums and education laboratories and exploring the natural world all around them.*

Implementation



The key threshold concepts across the science curriculum are taught sequentially over time to develop scientific knowledge and skills from EYFS to Y6 and beyond. The curriculum is built around a process of interweaving topics, self-testing, and re-testing to aid the development of long-term memory and mastery of both skills and knowledge required. Children are taught with reference to the 3 scientific disciplines of Biology, Chemistry and Physics:

- **Biology**: *Children learn that animals, humans and plants are made up of complex interacting systems to function. They recognise that organisms require a supply of energy to carry out basic functions of life and growth.*

- **Chemistry:** *Children learn that the Earth is a complex of interacting rock, water, air and life. They explore that particle theory of matter is the abstract idea that helps us develop an understanding of why materials behave as they do.*

- **Physics**: *Children learn that energy is a powerful and unifying abstract idea which is difficult to define. Forces change the state of rest or motion of the body.*

We make full use of our school grounds and setting; for example, our Secret Garden and pond area. Our promotion of outdoor learning and the children's forest school lessons, complement the science curriculum and provide a real context for the children to apply their knowledge and skills. The implementation of this is monitored by the subject leader and we promote both teacher and pupil voice in aiming to refine and improve our development and teaching of science.

In the Early Years Foundation Stage (EYFS), children begin to develop an understanding of science through the broad area 'Understanding the World'. Children explore and find out about the world around them and begin to ask questions about it. As children progress through the school they are given a wide range of scientific experiences as they are introduced to more complex scientific ideas. Children learn to ask scientific questions and begin to appreciate the way science is an integral part of our everyday modern life and will affect the present and the future on a personal, national and global level.

The curriculum develops scientific knowledge and conceptual understanding through a range of topics from the disciplines of biology, chemistry and physics. Children work scientifically and develop their understanding of scientific enquiry by establishing and evaluating explanations through experimental evidence and modelling. Children apply their mathematical knowledge to their understanding of science, including collecting, presenting, and analysing data.

Impact



By the time children leave St Aloysius, they are confident scientists who can follow a line of enquiry and have acquired the knowledge and skills ready for the next stage of their education.

Children know how science is central to our everyday lives and how scientists have changed the world through the methods of research and development. Our children can confidently include scientific evidence to support their answers to 'enquiry questions' which are skills that they will use to solve the scientific challenges of the modern world.

Our children demonstrate outstanding progress that reveals a clear learning journey. They talk enthusiastically about their learning in science and inspired to follow a pathway towards further study in science and aspire to a scientific career.