



Science at Victoria Lane Academy



At Victoria Lane Academy we recognise the importance of science in every aspect of daily life. As a core subject, we give the teaching and learning of science the prominence it requires.

We understand that children are naturally curious and we encourage this inquisitive nature throughout their time with us and beyond. We believe that a high quality science education provides the foundations for understanding the world through the specific disciplines of Biology, Chemistry and Physics. Science has changed our lives and is vital to the world's future prosperity, and all our children are taught essential knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, children are encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They are encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

We ensure that the Working Scientifically skills are built-on and developed throughout their school life so that they can use equipment, conduct experiments, build arguments and explain concepts confidently and continue to ask questions and be curious about their surroundings. Children will be given opportunities to progress and build on their skills of the five enquiry types each year. These enquiry types are: *Observing over time, *Pattern seeking, *Identifying, classifying and grouping, *Comparative and fair testing and *Research using secondary sources.

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. Staff 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. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school and embedded with practical, real life, meaningful and memorable learning experiences.

Our curriculum ensures full coverage of, 'The National Curriculum programmes of study for Science' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at Victoria Lane Academy involves adapting and extending the curriculum to match all pupils' needs.

Children are encouraged to ask their own questions and are given opportunities to use their scientific skills to research to discover the answers. Lessons also include problem solving opportunities that allow children to investigate for themselves.

Excellent planning ensures teachers create engaging lessons, often including high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children can be the best they can be.

We build upon the learning and skill development of the previous years. As the children's knowledge and understanding increases, and 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 these skills are being developed throughout the children's school life and new vocabulary and challenging concepts are introduced through direct teaching.

Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers continuously find opportunities to develop children's understanding of their surroundings by accessing outdoor learning, workshops with experts and educational visits.

Science is taught consistently, once a week for up to two hours, but is also discretely taught in many different contexts throughout all areas of the curriculum. For example, writing a biography of a famous scientist's life, using science data to teach data handling in maths lessons etc. Within science lessons children also apply their maths and English skills. Further information on the teaching of science can be found in our science teaching, learning and assessment guidance.

Our science teaching ensures that all children are provided with practical, meaningful, memorable learning experiences that aim to:

- Prepare our children for life in an increasingly scientific and technological world today and in the future.
- Promote a love of science and inspire them to consider a future career in science.
- Help our children acquire a growing understanding of the nature, processes and methods of scientific ideas.
- Help develop and extend our children's scientific concept of their world.
- Build on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and developing investigation skills including: observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Develop the use of scientific language, recording and techniques.
- Develop the use of computing in investigating and recording.
- Make links between science and other subjects.

Our successful approach to science teaching at Victoria Lane Academy results in a fun, engaging, high-quality science education, that provides children with the foundations for understanding the world. Our engagement with the local environment ensures that children learn through varied and first hand experiences of the world around them. So much of science lends itself to outdoor learning and so we provide children with opportunities to experience this. Through various workshops, trips and interactions with experts, children have the understanding that science has changed our lives and that it is vital to the world's future prosperity. Children learn the possibilities for careers in science as a result of our community links and connections with national agencies such as Esero, STEM, Durham University and the Ogden Trust. Our work through our Space Education Quality Mark and our Shine Trust Project ensures children learn from and work with professionals from a range of different scientific backgrounds. Children at Victoria Lane Academy overwhelmingly enjoy science resulting in motivated learners.

All our children will have:

- A wider variety of skills linked to both scientific knowledge and understanding, and scientific enquiry/investigative skills.
- Meaningful, memorable learning experiences
- Opportunities to ask and answer questions confidently
- An understanding of their local area and science related industry
- Experience of meeting and working with scientists from universities and local industry
- Experience of working with children from other schools in our local area

- *A richer vocabulary which will enable to articulate their understanding of taught concepts.*
- *High aspirations, which will see them through to further study, work and a successful adult life.*