



Saint Augustine Webster CVA's Subject Stories



Science

“The important thing is to never stop questioning”.
- Albert Einstein

“Never limit yourself because of others' limited imagination; never limit others because of your own limited imagination”.
Dr Mae Jemison

Intent

At Saint Augustine Webster Catholic Voluntary Academy, we believe that science enables children to understand the everchanging world around them and never more has it been at the forefront of our everyday lives. Science has, and continues to shape the way we live and is vital to the world's future prosperity. From EYFS, children foster a healthy curiosity in the world, with investigation through play, and develop a respect for the living and non-living. These key attributes are embedded in our pupils and carried forward to scientific subject specific learning. In keeping with our school value of kindness, science also provides pupils with the opportunity to appreciate the beauty and wonder in the world around them. We believe that science is an essential part of the curriculum that is taught standalone but also has many cross curricular elements that will be revisited and consolidated, such as healthy eating in PSHE and exercise and the human body in PE. We feel that our curriculum fulfils and goes beyond the expectations of the National Curriculum as we believe there is no ceiling to what pupils can learn if the architecture and practice is founded in evidence-led principles.

Implementation

A guiding principle of our science curriculum is that each study draws upon prior learning. Each module builds upon this and is sequenced to aid the acquisition and retention of key scientific knowledge. This helps to accelerate new learning as children integrate prior understanding. Our science curriculum is organised into three distinct subject domains: biology, physics and chemistry. Where inter-disciplinary concepts are encountered. Science is taught across each year group in modules that allow pupils to study key scientific understanding, skills and vocabulary in depth. The sequence of substantive and disciplinary knowledge enables pupils to become 'more expert' with each study and grow an ever broadening and coherent mental model of the subject. This guards against superficial, disconnected and fragmented scientific knowledge and weak disciplinary knowledge. Modules are accompanied by knowledge organisers which provide an overview of the key vocabulary, information and concepts pupils are expected to understand and retain. High frequency, multiple meaning words (Tier 2) are taught explicitly and help make sense of subject specific words (Tier 3). Pupils are further supported by a knowledge note which identifies the key information within a specific lesson. Cumulative quizzing is designed to help revisit and reinforce key scientific knowledge. Within each topic are planned scientific enquiry and working scientifically opportunities. Pupils will develop their skills as a scientist by asking questions and planning, carrying out experiments, collecting and analyzing data and subsequently drawing conclusions. Where possible, we provide first hand experiences with our local environment and educational trips to maximise pupil's engagement and motivation. We feel that our curriculum fulfils and goes beyond the expectations of the National Curriculum as we believe there is no ceiling to what pupils can learn if the architecture and practice is founded in evidence-led principles.

Impact

The implementation of this curriculum will ensure pupils at St Augustine Webster CVA experience an engaging, fun and high-quality science education. Pupils will understand the uses and implications of science, and draw upon this to answer questions about the current world and that of the future. Through harnessing their natural curiosity and allowing children ask and investigate questions, they will become increasingly independent learners and continue to develop as scientists. Within science lessons pupils also develop transferrable skills such as collaboration, discussion and decision making. Pupils will be equipped with the scientific knowledge to make informed choices about their own lives and their impact on the environment.

We will measure the impact of science through:

- pupil achievement data
- pupil voice
- lesson observations
- learning walks
- work scrutinies

If you were to walk into science lessons at Saint Augustine Webster CVA, you would see:

- High expectation for pupil outcomes
- Active scientific enquiry through planning and carrying out experiments
- Collecting and analysing data from experiments, and drawing conclusions
- Developing enquiry skills through questioning
- Increasing depth of knowledge and understanding
- Pupils returning to prior learning
- Pupils learning to select, organise and integrate new knowledge with prior learning
- Cumulative quizzing as a learning and assessment tool
- High quality worked examples
- Sequential lessons building up technical skills and vocabulary in small steps
- Guided practice leading to independent application
- Collaboration and support

Pupil Voice

Year 2 child *"I enjoy going to the Station to do experiments"*

Year 4 child *"I love doing experiment in science and finding new things out for myself."*

Year 5 child *"I enjoy using different materials and resources to do experiments in science. My favourite topic this year has been forces because we tested out lots of different things."*