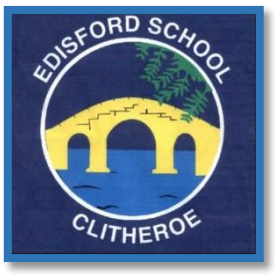

Confidence. Persistence. Getting Along. Organisation. Resilience.

Science Intent

School Vision

Edisford Primary School seeks to broaden children's experiences, ensuring that they build personal characteristics alongside strong academic progress. We do this through a first-hand learning approach wherever possible, so that children learn key characteristics for success, as well as teaching core skills and knowledge associated with each subject.

Science Intent

Our Science lessons at Edisford aim to teach children a fascination and curiosity about the scientific world. Science is vital within our lives and we believe that all children should be taught sound scientific learning. We consider science skills to lead to a strong foundation of understanding of how the world and scientific processes work, whilst also acknowledging that the ability to present rational explanations, keenly observe, make sensible predictions and record accurate data, are highly valuable, transferrable skills. Within our long-term plan, children learn about all aspects of the Science National Curriculum in a spiral curriculum. This allows them to make links with prior knowledge and delve deeper as they progress through the units to build a holistic and deep understanding of the scientific world. More than this, our curriculum builds in the Edisford ethos of first-hand experience and new vocabulary, endeavouring to create long-term memorable knowledge and understanding.

Key to our teaching are the separate disciplines of Science:

1. Biology

Learning about animals including humans, growth, lifecycles, human development, the digestive system and the circulatory system. Children learn key facts to build their knowledge about animals and develop their understanding of the principles of scientific enquiry. They also learn about living things and their habitats and also plants, including looking after our environment. Throughout children learn how to perform scientific enquiry through measuring, recording, observing and analysing data.

2. Chemistry

Children build their knowledge and understanding of scientific enquiry through chemistry units, such as recycling and materials, exploring everyday materials, rocks, uses of everyday materials, states of matter, properties of materials and changes in materials. Opportunities are made for children to perform investigations throughout these units, in order to understand how to observe, measure and record scientific events.

3. Physics

Children learn about physical processes in science lessons, such as the changing seasons, the planets in our solar system, climate change, light, forces and magnets, electricity, sound, Earth and space. Within these units, children undertake scientific enquiry, which is embedded within the units.

Inherent within each discipline is:

4. Scientific Enquiry and Working Scientifically

We wish our children to learn the key methods and processes for working scientifically. Therefore, throughout KS1, we teach them how to ask questions, recognise the many ways they can be answered, observe closely, use simple equipment, perform simple tests, identify and classify, use their observations and ideas to answer questions, gather and record data. In KS2, we build on this by teaching children to set up fair tests to answer questions, ask relevant questions, make systematic observations, take measurements accurately, gather and record data, classify and present data, record findings in a variety of scientific ways, draw scientific conclusions, identify similarities and differences and use straightforward scientific evidence to answer questions. In upper Key Stage 2, we encourage children to be ever more precise, how to control variables, record and present data of increasing complexity, draw conclusions and identify causal relationships, and delve deeper into current scientific evidence to support or refute ideas or questions.

Teaching Methods

We use the Developing Experts Science curriculum to form the basis of our Science teaching. We aim to stimulate children's innate curiosity in the scientific world – to be able to classify and observe the natural world, to be aware of physical processes and to experiment with the materials around us. We want them to understand that science can be broken down into Biology, Chemistry and Physics and that they must work scientifically to draw evidence-based conclusions. To foster long-term scientific knowledge and understanding, our Edisford ethos is inherent throughout the Science curriculum:

First-hand Experience

We foster a love of learning about the world through first-hand experience. This gives children:

- **Memories**: More memorable learning because it is interactive – children learn through experimenting and observing themselves.
- **New Vocabulary**: Learn new scientific vocabulary to describe the scientific world around them. We highlight a smaller bank of key words on our planning which we insist that children learn.
- **Practical Scientific Enquiry**: Putting theory into practice e.g. testing hypotheses and drawing conclusions from their own experiments. We also teach using demonstrations from the teacher – this allows all children to see first-hand the process of scientific enquiry.

This expresses our core ethos of 'fun, charisma and memories'.

We want children to learn the core skills associated with the study of Science, set out in the National Curriculum, but we also aim to widen children's experiences, study the science in their local area (and deepen their understanding by applying it practically.

Subject Leadership

The subject leader uses the Royal Society for Biology, Physics and Chemistry, and the Association for Science Education to support their knowledge of science teaching and learning. The subject leader refers to the Primary Science Knowledge and Understanding and Working Scientifically text books to substantiate knowledge and ensure that misconceptions are not being taught.