



SCIENCE

Intent, Implementation and Impact

Intent

Science is a core subject. The teaching of Science at Kingsteignton School aims to encourage inquisitive thinking to enrich children's curiosity in order to grow a strong understanding of the world around them. Acquiring knowledge and an understanding of scientific processes enables the pupils to make links between Science in the classroom and its implications within today's world, and importantly, the future. Progression seen within specific scientific topics across the school underpins the pupils' opportunities for deeper understanding, enabling them to build on prior knowledge.

Within an environment inclusive of all, and by creating immersive lessons, children develop scientific knowledge and understanding which is demonstrated by written and verbal explanations, solving challenging problems and reporting scientific findings. Children have opportunities to explore, question and come to balanced conclusions; resulting in pupils who are motivated to discover and ask 'Big Questions' within the context of the Learning Challenge Curriculum. Staff across the school understand the importance of investigation and the impact this has on learning. Across the school, Science takes a crucial role in inspiring young minds to think big; fostering a love of learning and a passion for Science in past, present and future technologies.

Aims

The National Curriculum for Science aims to ensure that all pupils:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Implementation

Planning

The Science Progression Pathway and the Science Skills Progression Matrix based on the Learning Challenge Curriculum and the National Curriculum ensure coverage and progression across the whole school. Particular attention should be paid to the 'Working Scientifically' section as this is absolutely key in providing pupils with opportunities to:

- Ask questions and plan enquiries
- Set up enquiries
- Observe and Measure
- Record
- Interpret and Report
- Evaluate

Progression

Where topics are repeated across year groups, it is crucial that the correct elements of the topic are covered at the right time. Progression can be seen in the Science Progress Pathway and the Science Skills Progress Matrix and this must be followed. This is to ensure that children are given the opportunity to build on previous knowledge and to experience deeper learning. In a half term where there is no science blocked in, Explorify will be used regularly to consolidate previous learning and to stimulate scientific discussion.

Resources

Kingsteignton School has a growing supply of scientific equipment and resources. Additional resources are available from Teign Secondary School including the use of a fully equipped Science Laboratory.

Presentation, English and Maths skills

As with all subjects, presentation is very important. It is expected that pupils will present their work neatly and clearly, with a focus on topic specific scientific vocabulary being spelt correctly and understood by the pupils. It is expected that pupils will be given opportunities to link Maths and Computing skills to their Science work, including creating tables/graphs using graph paper/software and analysing numerical results.

Displays

It is expected that each class will have the Working Scientifically Wheel on display as part of their Science working wall (see below). This will allow teachers, and the subject leader, to keep track of what elements of Science have been taught and to inform future planning. Phase leaders should ensure that their phase are covering every element of the wheel over a two year period. A date should be put into a box when that element has been covered, e.g. 'AUT 1 2020'.

Monitoring

Science will be monitored through:

Book Looks: The correct use of scientific language by the children will show that teaching is effective. The use of tables, graphs and diagrams will show a cross-over of Maths skills. High standards of presentation and English language will be seen. Although not every Science lesson will be expected to have a 'written up' piece; some will be focused on diagrams and collection on data, rather than writing.

Photographs: Will show children participating in working scientifically investigations. These can be printed and put into books, but should also be saved on Tapestry in a folder named 'Science'. This will allow the subject leader to monitor practical Science on a regular basis.

Pupil voice: Where pupils of all abilities will be given opportunities to express their thoughts about Science as well as share knowledge that they have gained.

Impact

At the end of each year, pupils will have a comprehensive understanding of the science curriculum and a positive outlook on their learning journey through Kingsteignton School. They are able to discuss their findings using key vocabulary and references from their completed work. Children will have covered the areas of scientific enquiry, developing their analytical and questioning skills along the way. Also, the children consolidate learning from other curricular areas due to the creative recording of data using a variety resources and methods.

Pupil Voice

Through discussion and feedback, children talk enthusiastically about their Science lessons and show a genuine curiosity and interest in the areas they have explored.

Evidence in Knowledge

Pupils can call on their prior learning to propel their understanding of Science. They can verbally explain their learning clearly using key vocabulary

Evidence in Skills

Pupils use acquire vocabulary to interpret and convey their understanding of the subject. They are able to record data in a variety of ways and can prove or disprove a hypothesis in a fair and safe manner.

Breadth and Depth

Teachers plan opportunities for pupils to study across concepts of Biology, Physics and Chemistry alongside working scientifically. skills and deepen their conceptual understanding in aspects of particular scientific value. Pupils have the confidence and are inspired to further their knowledge.