Science at WFF

Aims

The 2014 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 skills required to understand the uses and implications of science, today and for the future. We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this

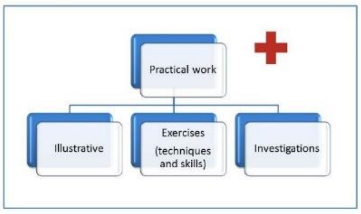
Our intent

At the Wye Forest Federation we recognise the importance of Science in every aspect of daily life. Our vision is to give children a Science curriculum which enables them to **explore and discover the awe and wonder in the world around them**, confidently, so that they have a deeper understanding of the scientific phenomena they encounter. To achieve this science lessons involve **exciting, practical, hands-on experiences that encourage curiosity and questioning**. As one of the core subjects taught in Primary Schools, we give the teaching and learning of Science the prominence it requires.

The scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with **Science as a process of enquiry**. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment and provide opportunities for critical evaluation of evidence.

Implementation

<u>The pedagogies that underpin science at WFF</u>

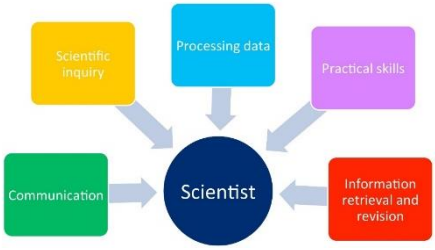


A useful framework to think about practical work in science is based on the ideas of **Woolnough and Allsop (1985).** Through this research they considered practical work to have one of three purposes: illustrative, exercises and investigations. What's most important is that you approach practical work by starting with the end point in mind – what exactly do you want to achieve? As a result, when planning practical learning experiences, teachers carefully consider what purpose the activity serves to support children's acquisition of knowledge.

Our approach to the teaching of the science curriculum also leans into the effective pedagogies implemented by early years practitioners, such as the **Reggio Emilia approach, which advocates the impact of including** play, curiosity, exploration and experiential learning within the classroom. When planning and delivering the science lessons, teachers aim to adopt the role of facilitator and co-researcher to foster the sense of curiosity and wonder we aim to achieve through the curriculum.

Working as a Scientist

When working as a scientist, the curriculum will encourage children to practice and master the scientific skills needed to fully access the science curriculum. These include:



- Scientific inquiry
- Communication
- Processing data
- Practical skills
- Information retrieval and revision

Within planned sequences of lessons, teachers identify and exploit opportunities for children to experience these principles in a progressive manner throughout the school. Reference is made to the curriculum for other STEM areas (maths, computing and design technology) so cross-curricular links are maximised, providing a real context in which children can practice and apply their scientific knowledge and skills.

Curriculum Design

In line with our rolling programme of enquiries, the science curriculum will be taught in a progressive manner adopting the three-year rolling programme. The curriculum content in the various areas of science of the curriculum (plants, electricity, materials etc) have been grouped together and will taught in a progressive way to ensure coherence between lessons, units and the key stages.

Within each area of learning, the substantive knowledge (the knowledge produced by science lessons) and the declarative knowledge (how knowledge in science is produced, developed and accepted) have been determined and used to form the core of our science curriculum. *(see Science Progression Document)*

Measuring Impact

Our Science Curriculum is high quality, well thought out and is planned to demonstrate progression. If children are keeping up with the curriculum, they are deemed to be making good or better progress. In addition, we measure the impact of our curriculum through the following methods:

- A reflection on standards achieved against the planned outcomes (KPI's);
- A celebration of learning for each term which demonstrates progression across the school;
- Tracking of knowledge in pre and post learning quizzes;
- Pupil discussions about their learning;