

# The Whitchurch CE Federation

## The Inquisitive Me - Science



***'Education is not the learning of facts, but the training of mind to think!' – Albert Einstein.***

### Intent

At The Whitchurch CE Federation, it is our intention to provide a high quality science education that provides children with the foundations they need to recognise the importance of science in every aspect of daily life. Our science curriculum is engaging and is planned to show clear progression throughout the key stages. Teachers ensure that lessons are accessible for children from all backgrounds, dispositions and abilities. We aim to empower our children with scientific skills and understanding so that they believe they have the capability to achieve anything. Our curriculum will enable children to become enquiry-based learners collaborating through researching, investigating and evaluating experiences. The breadth of the curriculum allows children to explore and develop a high level of skill. Through thorough planning, practical lessons, and teacher knowledge, we aim to provide high quality teaching to inspire children. We aim 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

Through the use of our driver 'The Inquisitive Me', there is a strong focus on problem solving, with every lesson and half-term planning built around key concepts. Teacher expertise, incorporating the driver skills: curiosity, questioning, problem solving and reasoning, are built into our high-quality curriculum to ensure that it is both enjoyable whilst also focused on driving forward knowledge and understanding. Teachers and outside agencies share good practice, ensuring learners receive the best opportunities and develop links to the wider community whilst being exposed to enrichment opportunities to create a sense of awe and wonder. Pupils will be encouraged to ask questions about the world around them (to ensure that we provide real life transfer of skills) and work scientifically to further their conceptual understanding and scientific knowledge. Children will become problem solvers and develop the ability to question the world around them. Teachers will ensure that all children are exposed to quality first teaching and learning experiences. These will hook the children's interest, enabling them to develop a sense of excitement and curiosity about natural phenomena. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding. This is supported by science working walls which teachers regularly refer to so that it is embedded in learning. This enables children to readily apply knowledge and vocabulary to their written, mathematical and verbal communication of skills.

All children will be provided with a broad and balanced science curriculum, which reflects the equality and diversity policies and practice in school.

Use of the scheme, 'Switched on Science by Rising Stars', provides full coverage of the primary science curriculum and ensures that science is taught for up to two hours per week. Teachers plan to ensure that there is clear progression and consistency through use of the scheme, our Learning Goals and using the Inquisitive Me driver. Switched on Science provides balance between working scientifically and learning scientific facts. Memorable knowledge and skills have been identified for each of the units to provide progressive acquisition of knowledge. Learning is driven through the 5 key areas of enquiry: research using secondary resources; identifying, classifying and grouping; comparative and fair testing and pattern seeking. Through implementation of these enquiry types, children learn to become problem solvers, use reasoning skills to justify findings and become curious learners. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers.

Where appropriate, lessons are hands-on, ensuring that pupils engage in regular first-hand experience using a range of equipment, including ICT where suitable, to enhance and deepen learning. By using different approaches to recording and communicating, all pupils can share their science, which means that teachers can access learning through assessment and use outcomes to plan next steps.

### **Impact**

Children will be motivated learners with a strong scientific understanding who can apply their learning to real-life contexts outside of the classroom. Children will be able to articulate their learning through reasoning skills developed during science learning. Pupil voice is heard at regular intervals throughout the year to ensure their opinions are valued and implemented and to assess their learning. This enables children to feel empowered and engaged.

Pupils develop their knowledge and skills through a series of planned activities linked to the curriculum which build on previous and personal knowledge. To assess the impact, teachers evaluate the knowledge and skills that pupils have gained against the original expectations of activities (the intent). This is indicated by the outcomes assigned to each activity. What and how well pupils have achieved will be accessed through using a range of approaches to assessment for learning. Teachers use a range of evidence to assess pupil's progress. This includes observing them working, listening to their discussions and using questions to probe understanding and reasoning, alongside their writing and other products such as video clips, models and role play activities. As pupils progress through the primary years, self and peer assessment is another approach to complement teacher assessment. Not only does this develop a pupil's ability to reflect on their own learning, it also provides teachers access to how well pupils perceive their learning to be progressing and why.

Marking of written work in books is scrutinised to ensure progression is consistent and misconceptions are routinely addressed. Children self-assess their own work through use of the Federation Marking and Feedback policy to develop an understanding of their strengths and how to overcome personal challenges. Termly summative assessment through the use of quizzes accessed through the scheme 'Switched on Science' are used to track knowledge and understanding so that an overall assessment of individual's learning can be formed. Formal reporting of standards at the end of key stage 2 ensures that children are meeting the national standards; this is monitored each year to set targets and fill gaps in learning. Teachers formatively assess children's use of their enquiry skills and key vocabulary to ensure that they are well-embedded.

