



St. John's CE Primary School
Wetley Rocks

Science
Intent, Implementation, Impact.

“Shine like the star you are.”

“You are the light of the world. A town built on a hill cannot be hidden.

¹⁵ *Neither do people light a lamp and put it under a bowl, instead they put it on its stand, and it gives light to everyone in the house. In the same way, let your light shine before others, that they may see your good deeds and glorify your Father in heaven.”*

Matthew 5:14-16

Our Values

Strength: have the strength to stand up for what is right. Be a courageous advocate.

Hope: to be people of hope. Have hope when times are dark and difficult. Keep positive and be resilient – there is light at the end of the tunnel.

Individuality: embrace and celebrate our differences. God made us all unique and this is a very special thing.

Nuture: cherish, care for, encourage and protect everything in God’s world - including yourself.

Excel: fulfil your God given potential; be the best you can be. Shine like the star you are.

Science Intent

At St John's Primary School all our curriculum subjects are linked to our school vision and values. We want to ensure that our children are prepared for the modern world and develop values that will help them be responsible citizens of the future and have an excellent early experience of science. Science is constantly changing the world and our lives and it is vital to the world's future prosperity, and we intend that all pupils be taught the essential aspects of the knowledge, methods, processes and uses of science. All pupils will develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics. Through scientific enquiry, they will be able to answer questions about the world around them and understand the uses and implications of science, today and for the future. Science at Foundation Stage is covered in the 'Understanding the World' area of the EYFS Curriculum. It is introduced indirectly through activities that encourage every child to explore, problem solve, observe, predict, think, make decisions and talk about the world around them. We want our pupils to SHINE.

The Science Curriculum and St John's Values:

St. John's Vision and Values are embedded through our teaching of science:

Strength: Science allows children to develop the strength to stand behind their convictions, argue their case and support their findings with evidence. Through the building up of a body of key foundational knowledge and concepts, we encourage our pupils to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.

Hope: To have resilience not just within science lessons but all timetabled lessons. To persevere to complete a task and to try all options to complete the work set. By providing the children with a high-quality scientific education, they will be able to apply their skills in a variety of subjects such as maths, literacy and D & T. The children will demonstrate resilience by continually practicing their skills, accepting failure in scientific enquiry and adapting. We want them to be aware of how science matters in the world and can bring about positive change.

Individuality: To demonstrate their own individual flair within the projects we set. The children can communicate their ideas and understanding using, where appropriate, different applications that are available in school. Their depth of understanding may also be demonstrated by the level of information they provide, the complexity of the task they complete or their ability to understand and develop the understanding of their peers.

Nurture: The education of pupils in science is essential to ensure children are equipped with the skills needed to be critical thinkers, foster their natural curiosity and respect for the living and non-living. We want to develop children who know how to protect everyone and everything in God's world.

Excel: Due to its practical nature we believe all children can gain a sense of achievement in science.

Implementation

The acquisition of key scientific knowledge is an integral part of our science lessons. The progression of skills for working scientifically are developed through the year groups and are of key importance within lessons. Every child benefits from a discrete, weekly science lesson, two hours in length as advocated in the ASE Best Practice Guidance. Our science curriculum follows the 2014 National Curriculum in conjunction with the PLAN working scientifically materials and ASE planning documents. Our whole school approach to the teaching and learning of science involves the following:

- Science will be taught in planned units for two hours per week with lessons scaffolded to allow all pupils to achieve.
- We plan for problem solving and real-life opportunities that enable children to find out for themselves. Children are encouraged to raise questions and be given opportunities to use their scientific skills and research to discover answers. Planning involves teachers creating practical, engaging lessons with opportunities for precise questioning in class to test conceptual knowledge and skills. Teachers assess children regularly to identify those children with gaps in their learning.
- Our curriculum is progressive. We build upon the learning and skill development of the previous years through the use of pre-assessment tasks, quizzes and written assessment tools in KS2. This allows teachers to also identify common misconceptions that need addressing as outlines on the PLAN knowledge grids.
- New vocabulary and common misconceptions are also addressed through and form part of our science displays. Common misconceptions and key vocabulary are referred to in our progression documents and PLAN knowledge grids to allow the children to build an extended specialist vocabulary.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career, and new vocabulary and challenging concepts are introduced through direct teaching. Children are encouraged to use scientific vocabulary and think like a scientist through, for example Odd One Out or Zoom in Zoom Out starter activities which also feeds into the formative assessment process. This reflects the importance of spoken language in pupils across the whole curriculum – cognitively, socially and linguistically.
- Teachers demonstrate how to use new equipment, and the various Working Scientifically skills to embed scientific understanding.
- Through enrichment days, such as 'science week', we promote the profile of science and allow time for children to freely explore engaging scientific topics.

Impact

The successful approach to the teaching of science at St. John's results in a fun, engaging, high quality science education, that provides children with the foundations for understanding the world that they can take with them once they complete their primary education. We want to give them the skills to problem solve and enable them to explore the implications for science today in the fast-moving world of scientific discoveries.

Through the teaching of science, the children will gain an understanding of how science has changed our lives and is vital to the world's future prosperity. Our children will have enquiring minds and through harnessing their natural curiosity, will develop a deep understanding about science and the natural world.

