



SCIENCE - INTENT

School Vision:

At St. Mary's we provide a welcoming, safe and happy school where everyone is respected and listened to; a school where we take pride in ourselves and our achievements, enabling children to become confident and successful learners.

We aim to rise above the ordinary and promote excellence by providing a positive, inclusive environment for learning and growth. Inspired by our faith in Christ, and together with our parents, carers, churches and communities, we aim for each person to reach their full potential in body, mind, heart and spirit. We work as a team, in partnership with all members of the school community, to offer a high quality, stimulating, safe and innovative learning environment which values and supports all children to achieve their potential. We nurture children who understand and are able to adapt positively as active citizens, to the diverse world in which they live, both now and in the future and grow as people. Our high standards of teaching and personalised learning are set within a broad, balanced and creative curriculum. A curriculum which is intended to prepare our learners to make a positive contribution towards society and enjoy future success.

Subject Curriculum Vision:

At St Mary's Academy, Walsley, our vision is for every child to actively engage in the Science curriculum through a creative approach that is supported by the Cornerstones curriculum and is further enhanced by STEM projects and projects linked to the Global Goals for Sustainable Development. By engaging in a process of observing, questioning, doing and understanding we aim to foster the view that science is relevant, fun and something which all pupils can participate in.

We encourage pupils to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in pupils about our universe and promotes respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the pupils will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on and developed throughout pupil's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

Our Curriculum for our Context:

St. Mary's Church of England Academy is situated in Walsley, which is a suburb in the north west of Sheffield. The school dates back to 1865. The area consists mainly of Victorian fronted houses & has a high student population as it is near to Sheffield University. St Mary's converted to becoming an academy sponsored by the local diocese in 2014 & which became DSAT (the Diocese of Sheffield Academy Trust). Whilst it has capacity for 210 pupils, the school is a smaller than average school with 173 pupils on roll aged 4-11 years.

St Mary's has a large number of pupils for whom English is an additional language, with the school being within the top 20% of schools for the proportion of EAL pupils. It also supports pupils from a wide range of ethnic backgrounds, with 11 out of the 17 ethnic groups being represented within the school population. Mobility is also much higher than average & is often due to children having parents who study at one of the two universities within the city. The mobility of pupils and their arrival to the school with little or no language are challenging factors. The number of pupils who have special educational needs and therefore need additional support is in line with the national average. However the number of pupils who need support for their special educational needs and / or disabilities is about average as is the number of children who are eligible for the pupil premium.

Our Curriculum reflects the ethos & aims of the school as well as the context from which our children derive. This means that our curriculum provides the essential building blocks to develop the necessary knowledge, skills and language, whilst also promoting British Values, healthy lifestyles & mental wellbeing, plus excellent behaviour & attitudes. It is underpinned with a large emphasis on SMSC development, a strong practical outworking for others in line with our Christian ethos, whilst also building character & readiness for the next stages of education & the learning journey beyond.

SCIENCE CURRICULUM - IMPLEMENTATION

Science will be taught in planned and arranged units, making appropriate links to Cornerstones units, The 17 Global Goals for Sustainable Development and STEM challenges. This is a strategy designed to enable the achievement of a greater depth of knowledge and reinforce cross-curricular skills and knowledge. It also centres science in a meaningful context which allows pupils to appreciate their role as a global citizen. Pupils that are working at greater depth will experience a greater breadth of learning, as specified in the non statutory learning of the national curriculum and by providing challenges which allows them to apply their knowledge and Working Scientifically skills to different contexts and to solve problems.

- Through our planning, we involve problem solving opportunities that allows pupils to apply their knowledge, and find out answers for themselves. Pupils are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning and discussion opportunities to assess conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils can be supported.
- Teachers build upon the knowledge and skill development of the previous years. As the pupil's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Teachers incorporate the study of a leading scientist, for example when studying forces pupils will learn about the work of Isaac Newton. This enables pupils to appreciate the work of pioneering scientist and understand how science has helped to shape the world we live in today. Where possible this should also include the work of female scientists, in order to promote STEM carers to female pupils.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the pupil's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with each unit.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop pupil's understanding of their surroundings by accessing outdoor learning and workshops with experts.
- Pupils are offered a range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.
- Regular events, such as Science Week, Aspire Day and project days, such as Big Schools Bird Watch, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. These events often involve families and the wider community.

Learning Experience	Resources	Links with other Subject Areas
What is the breadth of experience provided for our children?	What resources are used to support the teaching & learning of this subject?	What links are made between this & other subject areas?
<ul style="list-style-type: none"> • Quality First teaching: variety of teaching styles, varied stimulus, • Quality Resources: Books, texts, online resources & programmes • Quality resources to use during scientific enquiries • Visits: (teachers discretion) 	<ul style="list-style-type: none"> • Texts • online resources & programmes • National Curriculum • Hamilton Trust • OgdenTrust • STEM. Org • Cornerstones 	Links are made with other subject areas wherever possible especially when looking at <ul style="list-style-type: none"> • Significant scientist-link to history • STEM projects- utilizes skills from mathematics, design and technology and computing.

<ul style="list-style-type: none"> • Visitors: People who work in the field of science (doctor, nurse, vet, environmental scientist etc • Experiences: Use of Ruskin Park, use of web cams to access places such as International Space Station, etc. 		<ul style="list-style-type: none"> • PSHE AND Global Citizenship when children look at science and stem through the focus of the Global Goals for sustainability.
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Planning & Sequencing of Knowledge & Skills
How is the subject planned & sequenced in order that our children can progress through the Building Blocks for learning? This may include: Vocabulary, People, Places, Events, Concepts, Skills, Analysis, Evaluation, Problem-solving, Creativity, Independence, etc.

See Appendices attached.

RE - IMPACT

The successful approach at St Mary's C of E Academy results in a fun, engaging, high-quality science education, that provides pupils with the foundations and knowledge for understanding the world. Our engagement with the local environment ensures that pupils learn through varied and first hand experiences of the world around them. In contrast learning is also set in the context of Global Goals for Sustainability so that the pupils also understand world issues and appreciate the role they can play in helping to resolve these.

Frequent, continuous and progressive learning outside the classroom is embedded throughout the science curriculum. Through various workshops, trips and interactions with experts, local charities and secondary school science departments, pupils have the understanding that science has changed our lives and that it is vital to the world's future prosperity.

Pupils learn the possibilities for careers in science, as a result of our community links and connection with national agencies such as the STEM association and the Advanced Manufacturing Park and learn from and work with professionals, ensuring that children have access to positive role models within the field of science from the immediate and wider local community. From this exposure to a range of different scientists from various backgrounds, all pupils feel they are scientists and capable of achieving. Pupils at St Mary's overwhelmingly enjoy science and thus results in motivated learners with sound scientific understanding and skills.

Assessment	Monitoring & Evaluation	Long Term Memory
How is this subject assessed?	How do we know we have been successful?	How does this subject impact on long term memory?
<ul style="list-style-type: none"> • Teacher assessment • Marking 	<ul style="list-style-type: none"> • Lesson observations • Results / Data Analysis • Work scrutiny • Discussions 	<ul style="list-style-type: none"> • Revision & recapping • Success Criteria • Feedback / reflection from marking • Links & connections with other subject areas plus old & new knowledge • Discussion
Readiness for Next Stage of Education	Promotion of Social Mobility	Promotion of British Values & SMSC
How does this subject prepare our children for the next stage of their educational journey at secondary school & beyond?	How does this subject promote social mobility?	How does this subject promote British Values & SMSC?
We endeavour to ensure that the	Our aim is that no child is	Through our rich & varied

<p>sequence of content enables our children to progress whilst they are with us, but also to provide the building blocks necessary to develop further at secondary school & their learning journey beyond. Underlying all of this is our emphasis on Learning Culture which provides the underlying principles of attitude, resilience & character.</p>	<p>disadvantaged by their background situation & that, as a school, we provide everything that a child needs so that there is no cumulative dysfluency or gaps in learning. We have high expectations of all children in Science, high quality teaching and excel in supporting all areas of a child's development and character skills that underpin learning. We engage parents by encouraging parental discussion with children through their homework tasks.</p>	<p>curriculum, we ensure that our children are well equipped for life in modern Britain &, through subject linkage have an excellent understanding of science, scientific processes, how science has impacted our lives and how science can be used to address some of the issues that are facing the world at present. Our Curriculum is driven by SMSC Development &, as a result, pupils thrive – enjoying their lives, learning & want to make a difference for others.</p>
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Appendices - Planning & Sequencing of Knowledge & Skills

How is the subject planned & sequenced in order that our children can progress through the Building Blocks for learning? This may include: Vocabulary, People, Places, Events, Concepts, Skills, Analysis, Evaluation, Problem-solving, Creativity, Independence, etc.