

St Margaret's Vision For Science

Our Intent

The 2014 National Curriculum for Science aims to ensure that all children:

Develop **scientific knowledge and conceptual understanding** – through the specific disciplines of biology, physics and chemistry,

Develop understanding of the **nature, processes and methods of science** through different types of science enquiry that help children to answer scientific questions about the world around them, and

Are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future.

Children see and appreciate so that Our aim is that pupils really enjoy their science learning and make great progress in science. We are developing the Scientists of the Future. Children learn that all understanding in science depends on evidence that has been used to answer a question and that working scientifically involves evaluating the quality of that evidence and the conclusions that have been drawn from it.



How we implement Science

At St. Margaret's, all science lessons are stimulated by a question for children to answer, a scientific phenomenon to investigate or a problem to solve. Science Enquiry is the methodology children will use to develop their conceptual knowledge, working in an authentically scientific and purposeful way to collect evidence to find answers to their questions.

Science at St. Margaret's has been carefully planned to ensure that children use their developing science enquiry skills to build their knowledge of the scientific ideas in a systematic and conceptually appropriate way. Each lesson is designed to explore, value and build on children's prior knowledge so that misconceptions can be addressed and secure understanding developed. As children reflect on their own learning, teachers can assess the progress that they are making. Assessment will focus on progress in conceptual knowledge plus data collection and analysis skills. Assessment will support teachers and children to identify the next steps in learning, and to keep moving forward.

The Programmes of Study contain a **sequence of knowledge and concepts** on a year by year basis. Blocks of knowledge and concepts have been arranged to ensure progress in the big ideas of science to ensure that children develop secure understanding. Working scientifically is not taught as a separate strand, but is fully embedded in science lessons that are purposeful and lead to the learning of science concepts.

Enquiry strategies recommended in the National Curriculum:

Observing over time – when children observe or measure how one variable changes over time

Identifying and classifying – when children identify and name materials and living things and make observations or carry out tests to organise them into groups

Looking for patterns – when children make observations or carry out surveys of variables that cannot be easily controlled and look for relationships between two sets of data

Comparative and fair testing – when children observe or measure the effect of changing one variable when controlling others as far as possible

Answering questions using secondary sources of evidence – when children answer questions using data or information that they have not collected first hand

Use models – to develop or evaluate a model or analogy that represents a scientific idea, phenomenon or process

Both of my children thoroughly enjoyed Fizz Pop, THANK YOU! As a parent, I loved that it makes them so enthusiastic about science.

Mrs. Panayiotou

Impact

The successful approach at St. Margaret's results in a fun, engaging, high-quality science education, that provides pupils with the foundations and knowledge for understanding the world. We measure the impact of our science curriculum in a variety of ways – through questioning, pupil discussions, book scrutinies and testing of knowledge. Pupils take ownership of this process through reflection and analysis of their own learning needs. Knowledge and skills are revisited, and applied in new situations to ensure they are fully embedded. Increasing independence is developed as pupils progress through school, with selection of equipment and test procedures and reflection on how to explain anomalous results or improve investigations. Those not meeting year group expectations are monitored and supported to close the gaps in their skills and knowledge, so they can achieve their full potential.

Our engagement with the local environment ensures that children learn through varied and first-hand experiences of the world around them. Learning outside the classroom is embedded throughout the science curriculum in the 'Our Changing World' strand. New planting areas are being developed this year. Forest School continues to thrive in our Reception Class, and Pupils in Class 5 and 6 are offered the opportunity to attend a residential course each Spring – both of these develop confidence and self-esteem, and promote our school values alongside science knowledge. Children from Y1 – Y6 are offered extra-curricular science opportunities in our highly popular Fizz Pop Science Clubs (running in Summer Term this year.) Disadvantaged pupils are offered help with funding these opportunities, using Pupil Premium funding.

Events and Learning Opportunities

Forest School —YR
Merrion's Wood/ Sandwell Valley Trip —YR
School Nurse Workshop—Handwashing—YR
Animal Man —Y1
Fizz Pop assembly —Y1→Y6
Fizz Pop Science Clubs —Y1→Y6
Eco Bus Workshops — Variety of classes
School Nurse Workshop—Keeping Healthy—Y3
Science Museum Visit — Y4
Gases Workshop (Rev. Ward) —Y4
Planetarium Dome (funded by PTA)— Y1→Y6

My favourite topic was Sustainability— I like how it combined Science and Geography

Charles, Y4

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