Science Curriculum Statement

Intent

Here at St Anne’s, our science curriculum strives to provide children with engaging tasks, set in purposeful, real-life contexts wherever possible. We take a ‘hands-on’ approach to our science lessons, where children are able to explore their curiosities and have the opportunity to both ask and answer their own questions using a range of scientific enquiry. Our children develop their knowledge of Chemistry, Physics and Biology through appropriately challenged lessons, where they have the opportunity to guide the learning. We want our children to be aware that science is all around them, in everyday life and in every career, and to recognise that it is both vital and accessible to them for their future.

Below are our science principles, that we as a staff, along with our Science Ambassadors, review and agree on annually:

* Children are actively involved in science lessons: they take ownership of the lesson and have opportunities to direct the learning in a way that they choose
* Children are engaged and enthusiastic during and when anticipating Science lessons
* Science is investigative and ‘hands on’
* Teachers expectations are high irrespective of ability or background
* Children have the opportunity to observe changes over time, both inside and outside of the classroom
* Children discuss ideas and concepts with each other
* Children have the opportunity to ask and answer their own questions
* Teachers are enthusiastic about Science and are confident with their subject knowledge
* Science is linked to the real world and where possible, real-life examples are used to explain concepts over textbooks or worksheets
* Progression of knowledge and skills is evident within a year group and across the school
* Children have access to high quality resources
* Visits, workshops and visitors are regular and support learning in Science
* Effective cross-curricular links are made and maintained

Implementation

Each week at St Anne’s Years 1 – 6 spend an afternoon on science, both inside, and outside of the classroom. This includes covering the content from the national curriculum which is embedded in our bespoke St Anne’s Curriculum. They also have the opportunity to explore, investigate and analyse through various types of scientific enquiry, which allows time for our children to deepen their understanding and consolidate their learning. If any misconceptions are still present, we use the Snap Science assessment tool in small groups or on a one-to-one basis to address these and support children with their understanding of a particular concept or skill. Where possible, we work hard to develop meaningful connections between our science topics and other curriculum areas throughout the year, further enabling the children to make links between their learning.

One week each term is dedicated to working scientifically, where our whole school from nursery up to year 6, have the same stimulus, which in previous weeks has been nappies, biscuits and skittles! Our children begin by ‘playing’ and generate their own scientific questions through this child-led exploration We work together to sort the children’s questions into the various types of enquiry, then they work in groups to plan and carry out their own investigations, as well as having the freedom to explore the other forms of enquiry that they desire.

We are extremely lucky here at St Anne’s to have some excellent science resources in school, as well as expertise, with Mrs Clegg having received the award for Primary Science Teacher awarded by the Primary Science Teaching Trust, of which she is fellow. At our school, we have invested in quality science equipment and books over the years, which ensure that all of our children are able to access the science curriculum and gain an understanding of what is being taught. They have the opportunity to use technology within science, such as microscopes, pulsometers and we-do robots.

As a school, we work hard to connect with individuals and organisations in our wider community that we can work with in order to provide our children with eye-opening experiences that ignite new passions. Each year, we participate in British Science week, where we have a whole-school theme, where the learning focuses on STEAM subjects. We incorporate visits from STEM ambassadors, parents with ‘secret science’ careers, and experts from various fields, learning in a context. We continue to develop strong links with Our Lady’s High School, who we invite come into school to share their expertise with the children and staff alike and to provide additional science-based experiences that we would otherwise find it difficult to provide in our school. Our Lady’s regularly run workshops for our year 5 and 6 children to attend, such as electricity and forensic science, which engage and provide in depth knowledge of these areas, as well as discussing potential careers in these sectors. St Anne’s have developed strong links with the SEERIH Hub at The University of Manchester through projects such as Science 4 Families (<https://seerih-innovations.org/science4families/>) which extended a love of science to our families. This resulted in a Science Extravaganza led by five of our families, for another thirty families and was a huge success.

Wherever possible throughout the year, we take part in science-based projects and events such as the VEX IQ robot competition and the Great Science Share, which allow our children to take their knowledge and skills to other venues, and share this with a wider audience. We also try to organise educational visits that support our Science curriculum, for example visiting exhibits at the Manchester Museum and the RSPB, carrying out field-work in Heaton park or exploring the exotic animals with Zoo Lab.

St Anne’s have regular science CPD both off-site, primarily through the SEERIH Hub, and through our science lead who regularly feedbacks on any developments, new strategies and whole school approaches. These include making science assessment meaningful through well thought-out activities, using the TAPs structure for scientific enquiry, how to track attainment and use this to influence planning and teaching, using the Snap Science resource to address any gaps in understanding, and floorbook development. Our Science lead has supported teachers with developing their teaching and implementing a range of effective assessment strategies.

Impact

Throughout their time at St Anne’s, children will understand the importance of science for their future and that it truly is in everything they do and see. They will be enthusiastic and curious, pursuing different routes to answer questions they have, whilst knowing that science is not always about finding the answer, but asking the question. Our children will be self-motivated and confident as a result of gaining a sound conceptual understanding of all aspects of the national curriculum for science, delivered by competent educators. This will result in them becoming better prepared to navigate the world around them.

Children will:

* 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