St Matthew's
Church of England Primary Academy
A member of CDARI

Science - Intent, Implementation and Impact

At St Matthew's we believe that the basic principle of an effective curriculum is that learning makes a change to long term memory. The intent is that our Science curriculum facilitates the delivery of this basic principle. In order to do so a strategic approach, based on pedagogical research, must be in place.

Intent

At St Matthew's, it is our endeavour 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. We want our children to appreciate how science has changed the lives of human beings and know that it is vital to the world's future prosperity. Therefore, all pupils will be taught essential aspects of the knowledge, methods, processes and uses of science.

Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. Children should be taught to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. Our curriculum also encourages children to become enquiry based learners, collaborating through researching, investigating and evaluating experiences.

It will provide opportunities for the critical evaluation of evidence and rational explanation of scientific phenomena as well as opportunity to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. Children will be immersed in key scientific vocabulary, which supports in the acquisition of scientific knowledge and understanding. The following types of scientific enquiries are woven throughout our curriculum: pattern seeking, comparative/fair testing, researching, observing over time and identifying, grouping and classifying to ensure that children are gaining a full breadth of opportunities to engage in learning as scientists. All aspects of 'Working Scientifically' from the National Curriculum are interwoven throughout our curriculum, again, to ensure that children understand what it means to be a successful scientist.

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

Implementation

At St Matthew's, science is taught weekly. Teachers check on what children already know by using retrieval practise activities and critical thinking tasks at the start of each lesson to allow children to orally explain their understanding. Children will be able to build on prior knowledge and link ideas together. Learning is revisited with disciplinary knowledge too e.g. observing over time etc.

Staff at St Matthew's use the following guidance to ensure that there is a consistent approach to planning and teaching science:

1. Science is to be taught weekly.
2. The EduKent scheme to be used as the main resource for planning. PLAN documents are used to supplement this.
3. Learning Objectives are to be skill focused.
4. The Scientific enquiry type to be displayed each lesson and coded in their books.
5. 6 key words to be glued in books and put on display.
6. Stem sentences to be visible and used.
7. Critical thinking task to be used at the start of each lesson. Children MUST apply the key vocabulary to the discussions.
8. Retrieval practice to be used in weeks 2, 4 and 6.
9. Links to science capital to be made.

Impact

The successful approach to the teaching of science at St Matthew's will result 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.

Assessment at St Matthew's is teacher based and undertaken using formative and summative strategies e.g. end of unit assessments, written or verbal outcomes etc.

Children at St Matthew's will:

- Demonstrate a love of science work and an interest in further study and work in this field
- Retain knowledge that is pertinent to Science with a real life context.
- Be able to question ideas and reflect on knowledge.
- Be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich language linked to science.
- Work collaboratively and practically to investigate and experiment.