Science Policy

Science *is a way to understand our world by carefully thinking about it and testing our guesses with observations and experiments.*

Mission Statement

Loved
We love one another as Jesus taught us - our friends, our families and those who we may never meet.

Valued
We value everyone - everyone is important; pupils, staff, parents, governors and members of the community– no matter their race, religion ability or need. We try to live like Jesus taught us.

Challenged
We challenge each other - not only with our learning but challenge each other to be more merciful to others, have a little more understanding of others' needs and challenge each other to be better people.

Our Intent

At Holy Cross Primary CVA, the intent is to offer a knowledge-rich curriculum which is broad and balanced and ambitious. We are providing a Curriculum based on our Motto of Loved, Valued, Challenged that is rooted in Gospel values, Catholic Social Teaching principles, is knowledge rich and ambitious for all our learners. Our new curriculum follows seven themes that will allow our children to develop deeper knowledge and understanding in as they progress through each year group.

Our Science curriculum will build on the knowledge and understanding of all children, whatever their starting points, as they progress through each Key Stage linked. Our curriculum is designed to support and to ensure with are delivering a curriculum inspired by Christ.

Curriculum

Definition of Science

Science is a way to understand our world by carefully thinking about it and testing our guesses with observations and experiments.

Purpose of study

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should 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. (DfE National Curriculum in Science).

Aims

The national curriculum for science aims to ensure that all pupils:

- 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.

Scientific knowledge and conceptual understanding

The programmes of study describe a sequence of knowledge and concepts. While it is important that pupils make progress, it is also vitally important that they develop secure understanding of each key block of knowledge and concepts in order to progress to the next stage. Insecure, superficial understanding will not allow genuine progression: pupils may struggle at key points of transition (such as between primary and secondary school), build up serious misconceptions, and/or have significant difficulties in understanding higher-order content. Pupils should be able to describe associated processes and key characteristics in common language, but they should also be familiar with, and use, technical terminology accurately and precisely. They should build up an extended specialist vocabulary. They should also apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data. The social and economic implications of science are important but, generally, they are taught most appropriately within the wider school curriculum: teachers will wish to use different contexts to maximise their pupils' engagement with and motivation to study science.

Curriculum Implementation

Teaching & Learning

Early Years Foundation Stage

Science at Foundation Stage (Reception) is covered in the 'Understanding the World' area of the EYFS Curriculum. It is introduced both directly and indirectly through activities that encourage the children to explore, problem solve, observe, predict, think, make decisions and talk about the world around them.

Key Stage 1 and Key Stage 2

We build upon the learning and skill development of the previous years. As the children'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.

Early Years Foundation Stage

Active Learning through play

We organise science lessons to provide a balance between; child initiated activities, adult initiated activities and adult directed activities

At Holy Cross we recognise that young children learn best when they are active. We understand that active learning involves other people, objects, ideas and events that engage and involve children for sustained periods. Therefore, we believe that Early Years education should be as practical as possible and our EYFS setting has an ethos of learning through play.

Planning

The EYFS framework provides a long term plan to follow by ensuring that all Early Learning Goals are covered throughout the academic year.

Medium term planning is created and takes into account the individual children's learning and developmental needs. The learning opportunities provided include a range of adult focused and child initiated activities indoors. The setting also makes use of the outdoor environment whenever possible.

In Key Stage One and Two

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all children are capable of achieving high standards in science.

Planning

Science will be taught in planned and arranged topic blocks by the class teacher. This is a strategy to enable the achievement of a greater depth of knowledge. Through our planning, we involve problem solving opportunities that allow children to find out for themselves. Children 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 in class to test conceptual knowledge and skills, and assess children regularly to identify those children with gaps in learning, so that all children keep up.

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. This is developed through the years, in-keeping with the topics.

Assessment of Science

Pupil's work will be assessed in line with the Assessment Policy. We believe that assessment is vital in informing learning and teaching. Assessment provides evidence to guide our teaching and learning and provides the opportunity for students to demonstrate and review their progress. Assessment of children's work is undertaken at the end of each topic through the use of Knowledge Organisers.

Reporting to Parents

We aim to involve parents directly in the life of the school, and thus in the development of children's skills, knowledge and understanding in Science. There are opportunities each term when parents can discuss their children's progress with their teacher. Half Term curriculum newsletters provide information about the Science curriculum and how parents can support their children's Science development at home. We also issue an annual written report during the second half of the summer term.

Monitoring

The role of the Science Co-ordinator:

- Monitor the standards of children's work and the quality of teaching in science
- Support colleagues in the teaching of science.
- Analyse children's books
- Report to Governors
- Reporting changes to colleagues on latest developments in science
- Feedback to colleagues following OLOL network meetings, when appropriate.
- Support colleagues to enable a balanced workload.

To support your child further and develop their interests

- Knowledge Organisers for each science topic will be shared every half term on class pages
- Half Termly Newsletters will be sent home with further information regarding science being taught in class

Useful Websites – click to open link

The Royal Society
Stem Learning
Wow Science
NFU Education
Nasa Kids Club
BrainPop
National Geographic Kids
15 science websites to inspire children

Health and Safety

Pupils will be taught to use scientific equipment safely during practical activities. Class Teachers, Teaching Assistants and the Subject Leader will check equipment regularly and report any damage; removing defective equipment and replacing as appropriate.
The School Policy for Health and Safety will be integrated into science teaching.

Priorities for 2021-22

- To ensure science is taught across school consistently and regularly to ensure full curriculum coverage and to facilitate progression building on previous learning in line with the expectations of the National Curriculum.
- Highlight any gaps in the children's knowledge due to the Pandemic – devise strategies to support the teaching of science.
- Promote the profile of science in school.