Jesus is the centre of our lives,
Our learning and friendships.
In a safe, happy and caring community
Where all are welcome.

HOLY CROSS CATHOLIC PRIMARY ACADEMY

SCIENCE POLICY SEPTEMBER 2022

REVIEW SEPTEMBER 2024

Holy Cross Catholic Primary Academy
Science Policy

There are four main purposes to this policy:

It establishes an entitlement for all pupils
It establishes expectations for the standards to be achieved
It promotes continuity and coherence across the school
It states the school's approach to this subject in order to promote public, and particularly parents' and carers', understanding of the curriculum.

INTENT

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.
Through science, children at Holy Cross Catholic Primary Academy will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Our intent is to:

• Deliver a Science curriculum which develops learning and results in the acquisition of knowledge and skills, built on previous learning
• Create a Science curriculum which enables children to become enquiry-based learners
• Teach Science in a thematic and enjoyable way, alongside other areas of the curriculum
• Encourage children to predict, investigate and analyse
• Encourage children to showcase their scientific, investigative and enquiry skills.

IMPLEMENTATION

In order to implement our intent, we have:

• Opportunities for whole school and class enrichment
•Ensured that staff are equipped with the necessary professional development to deliver our curriculum
• Planned opportunities for home learning tasks to consolidate and extend knowledge and skills
• A clear and comprehensive Science curriculum in line with the National Curriculum
• A curriculum that is progressive and develops enquiry skills and knowledge
• Planned opportunities to learn Science within a wider context alongside other curriculum subjects

• Opportunities to develop the progression of enquiry skills, predicting, investigating and analysing
• Extra-curricular opportunities to participate in Science
• Opportunity for children to work independently and collaboratively
• Lessons that are practical and investigation based
• A subject team who monitors teaching and learning to improve standards and outcomes
• A link governor who liaises with the subject leader in order to monitor and improve standards
• A curriculum that meets the needs of all children

IMPACT

Through implementing the above:

• Children will understand and apply subject specific vocabulary
• We aim for all children to achieve at least, age related expectations
• Staff will use formative and summative assessments in order to know where children are in their learning
• Children will retain and build on knowledge that is pertinent to Science with a real-life context
• Children will be able to question ideas and reflect on knowledge
• Children will work collaboratively and practically to investigate and experiment
• Children will be able to explain the process they have taken and be able to reason scientifically

The importance of science in the curriculum

Science stimulates and excites pupils' curiosity about phenomena and events in the world around them. It also satisfies their curiosity with knowledge. Because science links direct practical experience with ideas, it can engage learners at many levels. Scientific method is about developing and evaluating explanations through experimental evidence and modelling. This is a spur to critical and creative thought. Through science, pupils understand how major scientific ideas contribute to technological change – impacting on industry, business and medicine and improving the quality of life. Pupils recognise the cultural significance of science and trace its world-wide development. They learn to question and discuss science-based issues that may affect their own lives, the direction of society and the future of the world.

Entitlement and curriculum provision

Science is a core subject of the National Curriculum. The work covered in Key Stage 1 builds on the nationally recognised curriculum for pupils aged under five. Pupils in reception develop their knowledge, understanding and skills

through the aspect of ‘Understanding of the world’ through play activities and direct teaching from which the pupils undertake planned tasks.

Science is allocated ten per cent of the taught time at both key stages and this amounts to about 80 hours per year at Key Stage 1 and about 90 hours per year at Key Stage 2.

Planning takes into account that the school places a high emphasis on the development of pupils’ skills of scientific enquiry (Sc1). In the substantial majority of lessons, the skills for Sc1 are taught alongside the knowledge and understanding in life processes and living things (Sc2), materials and their properties (Sc3) and physical processes (Sc4). In this way there is an equivalent emphasis on Sc1 as there is on Sc2/3/4 together.

Key Stage 1

At Key Stage 1 pupils observe, explore and ask questions about living things, materials and physical phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They begin to evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share ideas and communicate them using scientific language, drawings, charts and tables with the help of computing when appropriate.

Key Stage 2

At Key Stage 2 pupils learn about a wider range of living things, materials and physical phenomena. They make links between ideas and explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They think about the effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They talk about their work and its significance, using a wide range of scientific language, conventional diagrams, charts, graphs and computing to communicate their ideas.

Teaching and learning

All lessons have clear learning objectives, steps to success and success criteria which are shared and reviewed with the pupils effectively.

A variety of strategies, including questioning, discussion, concept mapping and marking, are used to make formative assessments. This is used to identify what is taught next.

Activities inspire the pupils to experiment and investigate the world around them and to help them raise their own questions such as "Why...?", "How...?" and "What happens if...?"

Activities develop the skills of enquiry, observation, locating sources of information, selecting appropriate equipment and using it safely, measuring and checking results, making comparisons and communicating results and findings.

Lessons make effective links with other curriculum areas and subjects, especially literacy, numeracy and computing. Activities are challenging, motivating and extend pupils' learning.

Pupils have frequent opportunities to develop their skills in, and take responsibility for, planning investigative work, selecting relevant resources, making decisions about sources of information, carrying out activities safely and deciding on the best form of communicating their findings.

Assessment and recording

Formative assessment takes place during each unit of work with summative assessment at the end. Teachers analyse pupils' progress in the units of work they have completed at the end of each school year to complete the annual report to parent. This report takes the form of a summary of the teachers' observations and continued assessment of the pupils at work thus giving parents a view of what their children know, understand and can do.

Continuity and progression

At the end of the academic year, the school ensures continuity of progression by handing over the results of summative assessments to the class teacher for the next academic year.

Inclusion

Planning at all levels ensures that the interests of boys and girls are considered. The pupils work individually, in pairs, in learning partners, as part of a small group and as a whole class each term. They use a variety of means for communicating and recording their work. Educational support staff, when available, work as directed by the teacher. All pupils, including those with special educational needs, undertake the full range of activities. Teacher assessment determines the depth to which individuals and groups go during each unit of work.

Organisation

Science may be taught through literacy and in a cross-curricular manner where possible i.e. Topic. The emphasis is on knowledge, skills and understanding.

Learning resources
Learning resources are kept in the science cupboard. Relevant equipment is taken to the class by teacher. All teachers are responsible for the maintenance of these areas with the ultimate responsibility resting with the science subject leader team.

Older pupils may be taught how to locate and replace resources properly. Teachers should make sensible decisions, based on the age and stage of pupils, in relation to whether the teacher, the pupils under the guidance of an adult, or the pupils independently, should collect and replace resources.

In the resource area resources are organised in boxes which are linked to themes. These resources should be returned in this way.

The learning environment

Classrooms will have a science display of the unit currently being undertaken. The profile of science should reflect its place as a core subject. Resources for the unit of work being covered should be appropriately accessible. Other sources of information should be available.

Science displays should encourage the pupils to be curious about the world in which they live. For example, at Key Stage 1 this might involve something to look at carefully using a hand lens. At Key Stage 2 this might involve a recent newspaper article about a scientific discovery, which builds on, or contradicts, the work of a famous scientist in history. All classrooms should display prominently the relevant scientific vocabulary being introduced in current units of work.

Outdoor learning: The environmental garden shall be used to support scientific investigation and learning occupying a prominent position in this respect.

Safe practice

Safe practice as indicated in The Association of Science Education publication, "Be Safe!" must be promoted at all times. Teachers must also consider the school's Health and Safety policy. Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies. Safety issues will be identified in medium-term planning and risk assessments must be completed in weekly planning, when activities are identified that are unusual and beyond the scope of normal safety practice.

Extra-curricular opportunities

Medium-term planning identifies the fieldwork, visits to places of scientific interest and visitors to the school in order to support the learning objectives for units of work where relevant. Teachers should plan to undertake those which are incorporated into this planning. In addition, other possible out-of-

school opportunities are listed and teachers may choose to incorporate these as well.

Homework

No specific homework is set at either Key Stage, although teachers may choose to involve the pupils, parents and carers in small investigation activities related to the work in hand or to set half-termly science-based projects.

V.L.E.

Resources to support and stimulate enquiry and learning around the current topic in science should be uploaded on to the relevant class page of the virtual learning environment. (Tapestry/Seesaw)

Parents and carers

Parents and carers have an important role to play in helping their pupils learn about science. Teachers need to select homework or project activities carefully so that parents and carers can provide the right levels of support or be provided with background support beforehand. Matters of topical scientific interest are raised for parents and their children to investigate or observe together. The importance of science relative to other subjects will be explained to parents when their children join the school and teachers should take the opportunity of reinforcing this appropriately during interviews with parents.

The contribution of science to other aspects of the curriculum

The teaching of literacy, numeracy and computing is promoted strongly in science as part of this school's drive to raise standards in English and mathematics. Science is used to extend and enable the pupils to practise the skills of language and literacy and numeracy.

Literacy

In particular, at Key Stage 1, the pupils are encouraged to use their speaking and listening skills to describe what they see and explain what they are going to do next.
At Key Stage 2 the pupils are encouraged to develop their skills of writing to record their planning, what they observe and what they found out. In relation to science, they should be applying their literacy skills at levels similar to those which they are using in their English work.

Numeracy

At both key stages the pupils are expected to use their knowledge and understanding of measurement and data handling at appropriate levels. In

science, they should be applying their numeracy skills at levels similar to those which they are using in their mathematics' lessons.

Computing

The pupils' computing skills are applied as identified in the medium-term planning. At both key stages this involves the pupils using computing to: locate and research information; record findings (using text, data and tables); log changes to the environment over time (sensing equipment) and the general development of skills in using computing. The use of this equipment is indicated in medium-term planning and must be used. It forms an important part of the entitlement of all pupils in computing.

Spiritual development

Spiritual development is encouraged through reminding pupils of the wonder of science and the effect of scientific discoveries on the modern world. Topical scientific issues are also discussed as appropriate.

Personal, social and health education

Health education is taught as part of the units on ourselves, health and growing, teeth and eating, moving and growing, keeping healthy and life cycles.

Leadership and management

Staff development and training opportunities
The needs of individual members of staff (teaching and non-teaching) are identified as a result of the schools performance management programme. Staff attending training are expected to share the useful points with other relevant staff.
A governor is allocated to take a specific interest in Science and will discuss developments with the subject leader and the Headteacher.

How the subject is monitored and evaluated

The subject leader team is responsible for monitoring standards. This will be done through, lesson observations, book looks, planning scrutinies, pupil perception interviews, data analysis and climate walks.

Safeguarding

The school takes its responsibilities of safeguarding children very seriously. All staff will ensure at all times that the safety and well-being of children is the first consideration. Staff will consider the health and safety aspects of any activities offered to children and check the suitability of any visitors engaged to work with the children.

Equality

At Holy Cross Catholic Primary Academy, equality considerations are central to all that we do. We are committed to promoting equality of opportunity and to preventing all unlawful discrimination whether against individuals or groups on grounds of age, race, gender, physical or learning disability. Equality is simply not a minority issue. It is important to everyone.