



Introduction

We believe in the importance of science as stated in 'Science, The National Curriculum for England, 2014', "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."

As a Catholic School we aim to enable all children to recognise, appreciate and develop specific concepts about their world, and of the implications of human actions. The beauty of God's world is explored through science in an attempt to deepen our understanding of the complexities and achievements within his magnificent creation. We aim to teach pupils about these concepts and the implications of our actions with a close bearing to our Catholic ethos, underpinned by Gospel values as taught by Jesus Christ.

Science stimulates a natural curiosity in young children about their world. We believe that it is important to enable children to actively learn by teaching them the skills they need to find answers to questions, so as to increase their scientific knowledge. As they progress through the school we seek to develop their ability to carry out their own, independent, enquiries and to become confident in expressing, and explaining, their own views.

Aims and Objectives

The aims and objectives of the teaching of science at Christ the King school are:

- To develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics.
- To 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.
- To ensure that children are equipped with the scientific knowledge required to understand the uses and implications of science, today and in the future.
- To prepare our children for life in an increasingly scientific and technological world.
- To foster concern about, and actively care for, our environment.
- To help children to acquire a growing understanding of scientific ideas.
- To help to develop and extend our children's scientific concept of their world.
- To develop our children's understanding of the international and collaborative nature of science.

Attitudes

- To encourage the development of positive attitudes to science.
- To build on our children's natural curiosity and develop a scientific approach to problems.
- To build our children's self-confidence to enable them to work independently.

- To develop our children's social skills to enable them to work cooperatively with others.
- To provide our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- to give our children an understanding of scientific processes;
- to help our children to acquire practical scientific skills;
- to develop the use of scientific language, recording and techniques;
- to develop the use of ICT in investigating and recording;
- to enable our children to become effective communicators of scientific ideas, facts and data;
- to develop the skills of investigation – including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.

The Science National Curriculum

The Science National Curriculum is outlined under the following areas of focus:

- Scientific Knowledge and conceptual understanding.
- The nature, processes and methods of science.
- Spoken language.

The curriculum is broken down into Programmes of Study for Key Stage 1, Lower Key Stage 2 and Upper Key Stage 2. In addition to working on the areas above, each phase is also expected to follow guidance on working scientifically. This should **always** be taught through and clearly related to the teaching of substantive science content as described in the programme of study.

Learning Across the Curriculum

Science is, generally, taught as a separate subject. However, when the opportunity arises, teachers may seek to make links to other subjects. The Science curriculum provides an excellent opportunity to develop language and communication and numeracy skills. We aim to incorporate ICT within the teaching of science and consideration should be given to how this may be done within each unit. Cross-curricular links are identified on the medium term unit plans.

A variety of strategies, including questioning, discussion, concept mapping, and marking are used to assess progress. This information is used to inform subsequent planning. 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.

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.

In the Foundation Stage, pupils are provided with opportunities to explore 'Understanding of the World' through teacher-directed and child-initiated activities. Through a seamless curriculum, children are encouraged to observe, explore and formulate ideas, interest and curiosity in the world around them, whilst working to achieve the outcomes of the Early Learning Goals.

By the end of each Key Stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Programmes of Study and Curriculum Provision

Science is a core subject of the National Curriculum and pupils undertake some science activity every week at both key stages. The work covered in Key Stage 1 builds on the National Curriculum for pupils aged five to seven.

Key Stage 1

The principal focus of science teaching in key stage 1 is to enable pupils to experience and observe phenomena, looking more closely at the natural and humanly-constructed world around them. They should be encouraged to be curious and ask questions about what they notice. They should be helped to develop their understanding of scientific ideas by using different types of scientific enquiry to answer their own questions, including observing changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information. They should begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways. Most of the learning about science should be done through the use of first-hand practical experiences, but there should also be some use of appropriate secondary sources, such as books, photographs and videos.

'Working scientifically' is described separately in the programme of study, but must **always** be taught through and clearly related to the teaching of substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2

The principal focus of science teaching in lower key stage 2 is to enable pupils to broaden their scientific view of the world around them. They should do this through exploring, talking about, testing and developing ideas about everyday phenomena and the relationships between living things and familiar environments, and by beginning to develop their ideas about functions, relationships and interactions. They should ask their own questions about what they observe and make some decisions about which types of scientific enquiry are likely to be the best ways of answering them, including observing changes over time, noticing patterns, grouping and classifying things, carrying out simple comparative and fair tests and finding things out using secondary sources of information. They should draw simple conclusions and use some scientific language, first, to talk about and, later, to write about what they have found out.

'Working scientifically' is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read and spell scientific vocabulary correctly and with confidence, using their growing word reading and spelling knowledge.

Upper Key Stage 2

The principal focus of science teaching in upper key stage 2 is to enable pupils to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. At upper key stage 2, they should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. They should select the most appropriate ways to answer science questions using different types of

scientific enquiry, including observing changes over different periods of time, noticing patterns, grouping and classifying things, carrying out comparative and fair tests and finding things out using a wide range of secondary sources of information. Pupils should draw conclusions based on their data and observations, use evidence to justify their ideas, and use their scientific knowledge and understanding to explain their findings.

‘Working and thinking scientifically’ is described separately at the beginning of the programme of study, but must **always** be taught through and clearly related to substantive science content in the programme of study. Throughout the notes and guidance, examples show how scientific methods and skills might be linked to specific elements of the content.

Pupils should read, spell and pronounce scientific vocabulary correctly.

The Programme of Study has been used to produce a curriculum map, outlining when during the school year each unit of work will be taught.

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Reception					Humans Animals	Plants
Yr 1	Humans	Animals	Everyday Materials		Plants	
Yr 2	Living things and Humans	Animals and Habitats	Uses of everyday materials		Plants	
Yr 3	Forces and Magnets		Rocks	Animals including humans	Plants	Light
Yr 4	Living things and their Habitats	Animals including Humans	Electricity		States of Matter	Sound
Yr 5	Earth and Space		Forces	Properties of Change	Living things and their Habitats	Animals including Humans
Yr 6	Living things and their Habitats	Animals including Humans	Evolution and Inheritance		Light	Electricity

Special Educational Needs; Inclusion; Equal Opportunities; Education for a Culturally Diverse Society.

We are committed to an inclusive, broad and balanced curriculum for all pupils. In science the National Curriculum is the starting point for planning a curriculum that meets the specific needs of individuals and groups of pupils. We have adopted the statutory inclusion statement on providing effective learning opportunities for all pupils. When planning, teachers will modify, as necessary, the National Curriculum programmes of study to provide all pupils with relevant and appropriately challenging work at each key stage, in order to provide a more inclusive curriculum which:

- A. sets suitable learning challenges;
- B. responds to pupils’ diverse learning needs;
- C. overcomes potential barriers to learning and assessment for individuals and groups of pupils.

(See also School Policy Document for S.E.N.)

Assessment Recording and Reporting

Pupil assessment should be continuous and be built into subsequent lesson planning.

Assessment and appraisal of children's work could be recorded through observation of group work, individual work, individual interview, set questions, tasks or monitoring of regular classwork. Expectations of children's learning are clearly set out at the beginning of each unit of study. These expectations should be used as a valuable model for assessing children's performance at the end of the unit of study.

Staff will also assess children's understanding of units covered through summative assessments at the end of each unit of work. Results of this will be used to indicate whether a child is working within their age expectation, at their age expectation or above their age expectation.

The Y2 staff assess children's level of attainment against age related expectations at the end of the KS1 programme of study. This teacher assessment is based on assessment records and work samples. The Y6 staff assess children's level of attainment against age related expectations at the end of the KS2.

An annual summary for parents on pupils' achievement in science will be included in the child's annual school report. Parents' consultation evenings will be another opportunity to discuss individual pupil progress.

The Role of the Science Leader.

The role of the Science Curriculum Leader is to develop and manage science throughout the school:

- to organise, monitor and evaluate the policy and scheme of work for science across both key stages;
- to ensure progress and to raise pupils' attainment;
- to monitor that work planned, delivered and assessed is in line with the programme of study;
- to contribute and monitor progress in science;
- after consultation with staff, to decide on priorities within the school budget and order necessary resources;
- to organise, allocate and monitor science resources;
- to support and provide guidance to all staff on matters relating to science;
- to attend in-service training and update sessions relating to science, and report relevant information to staff.

Staffing

The school's curriculum for science is implemented by individual class teachers under the guidance of the science leader, using the resources available.

Resources

Learning resources are kept in a central store on both sites. Resources are organised in boxes, which are clearly labelled. The quality and quantity of resources needs to be maintained and the children should value the school's equipment. It is the responsibility of all teachers to return resources to the correct location after use. Any damage or losses should be reported to the science leader, and all breakages go into the breakage boxes. Any resources that need to be replaced should be recorded on the form in the resource area.

Teachers are encouraged to make full use of practical resources alongside ICT resources, such as the internet, CD-ROMs and interactive programs on interactive whiteboards. Visits will be organised as and when they are appropriate to the area of study.

Review

This policy will be reviewed periodically according to the School's policy review cycle.

Review history

Issue 01	Policy approved by Governors	30/04/12
Issue 02	Learning Across the Curriculum - para 4 modified	10/06/13
Issue 03	Policy modified	05/11/15
Issue 04	Reviewed	24/11/16