



# St Kentigern’s Catholic Primary School

# MISSION STATEMENT:

#  30 Treat others the way you want to be treated! ideas | great quotes ...

**SUBJECT NAME Science**

**Science Subject Leader:** Claire Morris

 **Intent – Why do we teach what we teach?**

Science makes a significant contribution to the education of our children at St Kentigern’s.  Science is a subject that stimulates and excites pupils’ curiosity about the world around them, inspiring them to develop an enquiring mind that will serve them throughout their time at school and beyond.

Our policy aims to ensure that all pupils:

* Develop scientific knowledge and conceptual understanding through the programme of study
* 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 importance of science, today and for the future.
* Understand the part science has played in the development of many of the things they use in real life
* The need to treat their environment with care and sensitivity
* The need to treat all living things with the respect they deserve as part of God’s creation, linked to our Gospel Values Curriculum

We believe science encompasses the acquisition of knowledge, skills, concepts and positive attitudes.  Throughout the programme of study, the children will acquire and develop their knowledge, explore and apply scientific skills, as well as learn about scientists and their discoveries.   An important aspect of our curriculum is for children to learn and use scientific vocabulary in the correct context, both in scientific discussion and also when writing up their findings.

Children are exposed to different ways of investigation and develop their skills at predicting outcomes.  They are encouraged to work in groups, developing their team working and communication skills. Through investigations and prediction, children learn that making a mistake or not getting something quite right is a natural part of learning.

Cross curricular links are made to other curriculum areas, including Maths, English and Topic, so pupils understand how key learning is linked and can apply it in other subjects.

Children also develop an understanding of how important and relevant science is to their lives, now and in the future, through enterprise, Science Days and STEM activities.

**Statutory Requirements**

Statutory requirements for the teaching and learning of Science are laid out in the EYFS Framework 2023 for children in the Early Years Foundation Stage and, for children in Key Stages 1 and 2 in the National Curriculum 2014. Pupil provision is related to attainment, not age.

In EYFS science skills are taught linking to development matters statements and the early learning goals with particular links to ‘Understanding the World’.

The programmes of study for science is set out year-by-year for key stages 1 and 2, with the relevant programme of study to be taught by the end of the key stage. Schools are required to set out their school curriculum for science on a year-by-year basis.

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.

**In Key Stage One (Years 1 and 2)** 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. 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 Two (Years 3, 4)**

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

**Upper Key Stage Two (Years 5, 6)**

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. Pupils should read, spell and pronounce scientific vocabulary correctly.

Working scientifically’ must always be taught through and clearly related to substantive science content in the programme of study.

 **Implementation – How do we teach what we teach?**

At St Kentigern’s, teachers plan stimulating lessons to challenge pupil’s ideas about Science and the world around them, whilst trying to make links with other areas of their learning.  We encourage them to problem solve, ask questions and think scientifically around each discovery they find. Teachers use the Developing Experts scheme as a framework for their science planning, providing the children with a solid foundation of the National Curriculum, but also draw from a range of resources to ensure their planning and teaching meets the learning needs of their class. There is a clear progression through each unit of study and this can be clearly seen throughout the school, in each year group.

Science is taught in units and there is a focus each half term for working scientifically. Teachers use the Science Curriculum Map, which sets out defined end points for each topic area. These form the basis of medium-term plans, with lessons planned to ensure a clear sequence and progression through each unit of study.

Every year we build upon the previous year’s learning and skill development.  As the children’s knowledge develops and they become more skilled in using the appropriate scientific equipment and collating and interpreting and interpreting results, our children are able to draw their own conclusions, based on their own findings.  Our teachers model how to use scientific equipment in experiments.

Generally, one unit of science will be taught each half term. Some units may be taught in collaboration with outside agencies. Science units may be linked to other curriculum areas, with opportunities to embed learning from core subjects, for example the teaching of statistics within science investigation.

We are committed to providing exciting, hands on and practical experiences at St Kentigern’s, where all children are given opportunities to succeed. In turn this will help promote independent learning, curiosity and a love for enquiry and knowledge. Teachers are encouraged to integrate learning outside the classroom, through use of outdoor learning spaces, school grounds and class trips.  Partnerships with relevant STEM organisations support pupils’ understanding, interest and aspirations in the field of science.  An annual Science Week is organised, alongside other schools in The Blessed Edward Bamber Multi-Academy Trust, to raise pupils’engagement and aspirations in Science.

**Impact – How do we know what students have learnt and how well they have learnt it?**

**The impact of our science curriculum is:**

* Children enjoy and are enthusiastic about science, through access to an engaging, high-quality science curriculum
* Children are confident to use and explain scientific vocabulary
* Children can ask questions about their science learning and reflect on their knowledge
* There is a clear progression of children’s work and teachers’ expectations
* Children are increasingly independent in working scientifically, building on skills acquisition
* Children’s understanding and interest in science is nurtured through hands-on, practical experiences, which raises their understanding of the development and importance of science in our world
* Children learn the possibilities for careers in science and STEM, through partnership with Primary Futures and local employers

**Assessment and Reporting**

*Formative Assessment*

Formative assessments are carried out to ensure children make progress. Teachers use a variety of assessments to inform their judgements. They enable the teacher to determine what each child has learned and what should be the next step in his/her learning. Types of formative assessments used in science include:

* + Mini quizzes
	+ Pre and post unit tests
	+ ‘Working Scientifically’ TAPS materials
	+ Marking and feedback based on learning objectives and lesson outcomes (linked to endpoints)

*Summative Assessment*

Termly summative judgements are made in relation to whether pupils are working at age related expectations in both scientific knowledge and working scientifically skills. In addition, end of Key Stage 2 teacher judgements is reported, in line with statutory requirements.

 **Monitoring and Progression**

## Monitoring

## The subject leader will monitor the impact of science teaching and learning using the subject action plan, which sets out the priorities for the year.

The Subject Leader will conduct monitoring and feedback through a range of methods, including:

* + Book scrutiny
	+ Lesson observations
	+ Learning Walks
	+ Pupil Voice
	+ Analysis of data

Whole school Science meetings will take place during the year to ensure all staff are up to date with changes in the Science Curriculum and receive up-to-date and relevant CPD.

The Science Lead will keep a monitoring log to record monitoring exercises, outcomes and impact.

Following on from any monitoring that is carried out, feedback is provided to staff. Any areas that require improvement are discussed with staff, with support offered (where necessary) and steps for moving forward agreed.

## Progression

Teachers use the Science Curriculum Map to ensure lessons are planned to match the statutory requirements of the National Curriculum 2014. Teachers adapt learning objectives where necessary, to ensure work is well-pitched to the needs of the children.

Through the Science Curriculum Map the planned progression in skills and scientific knowledge are set out throughout the year and from year group to year group.

**Inclusion and Interventions**

We aim to provide for all children so that they achieve as highly as possible in Science, according to their individual abilities. Staff will identify which pupils or groups of pupils are under-achieving and take steps to improve their attainment, through provision of support and scaffolds within the lesson. Higher attaining children are identified and suitable learning opportunities are provided in order to ensure adequate challenge and opportunities for progression.

**Home/School links**

Parent/carer – teacher dialogue and co-operation are encouraged at all stages of a child’s school life, and in all aspects of the Science curriculum.

*Reporting to parents/carers:*

Formal reporting to parents/carers of attainment, progress and targets takes place termly either through a written report or at a parent/carer-teacher meeting. Parents/carers are given the opportunity to discuss their child’s report and progress by appointment, when necessary.

Teachers communicate frequently with parents and carers via the Class Dojo app; they can use this to share what the child has been learning in class and equally parents/carers can share home learning via this app too, enabling an interactive home/school dialogue (which is especially useful for those parents/carers who aren’t available to meet the teacher in person).

*The role of the parent/carer*

Parents/carers can play a key role in their child’s science development and progress by engaging in home learning tasks, linked to our science work within school.

*SEND action plans*

Class teachers will liaise half-termly with parents of children who are on the SEND register, to share targets and progress.

**Equal Opportunities**

All children are provided with equal access to the Science curriculum, through suitable learning opportunities, regardless of gender, ethnicity, religion or home background.

Children with specific writing difficulties or physical disabilities are identified and supported through support programmes in school and, where necessary, external help is sought.

**The Governing Body**

The School Science Governor (T.Joseph) works closely with the Science Subject Leader to monitor the subject. They meet frequently to:

* + Discuss developments in Science;
	+ Share key documents;
	+ Share findings of learning walks, lesson visits, book scrutiny’s and any other moderations carried out, and discuss how the results of these will inform future practice and next steps in the subject.

Supported by the Science Subject Leader, the School Science Governor writes reports to Governors, sharing any relevant Science updates and detailing the impact and effectiveness of the current Science provision in school. Reports are shared with Governors in Full Governing Body meetings, providing all Governors with the opportunity to discuss, question and monitor the effectiveness of the teaching and learning of X.

This policy will be reviewed every two years or in the light of changes to legal requirements.

Policy written by: Claire Morris (Science Subject Leader)

Date reviewed: December 2023

Next review date: December 2025