



St Francis Xavier Catholic Primary School

Science Policy

Date written	September 2026
To be reviewed by:	September 2027

Intent

At St Francis Xavier, it is our intention that every child develops a secure and meaningful body of scientific knowledge and an understanding of how science helps us to explain the world around us. Our fully resourced, knowledge-rich curriculum provides children with the foundational knowledge, vocabulary and scientific understanding needed to support future learning.

Science is taught through the disciplines of biology, chemistry and physics, developing children's curiosity, interest and enquiry about the natural and humanly constructed world. Children are encouraged to ask questions, make observations, seek patterns, classify and compare, carry out fair tests and other appropriate investigations, and use secondary sources to research scientific questions.

Alongside substantive scientific knowledge, children develop their ability to work scientifically. They learn to observe carefully, measure, record and interpret data, identify patterns, draw conclusions and use evidence to explain their ideas. Working scientifically is embedded within the teaching of scientific content rather than taught as a separate strand.

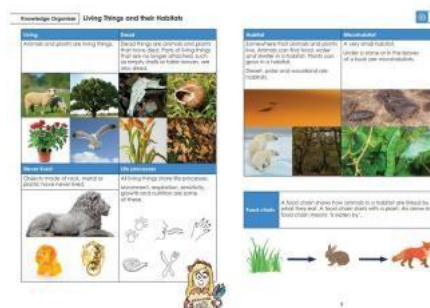
As children progress through the school, new learning builds systematically on prior knowledge. Teachers identify and address misconceptions and deliberately revisit important knowledge and vocabulary so that children's understanding becomes increasingly secure and can be retrieved and applied in new contexts.

We aim for every child to leave St Francis Xavier with a strong scientific foundation, confidence in using scientific language, an understanding of how scientific knowledge is developed and a sense of curiosity, awe and respect for the world around them.

Implementation

Below, are statements for how Science is delivered in St Francis Xavier.

- Science is taught throughout the year in half-termly or termly topics which are designed to ignite curiosity about the world we live in and its processes.
- Science is taught through a vocabulary rich curriculum allowing children opportunities to learn new terminology and imbed this within their long term memory which will be evident within their work and classroom discussion.
- As children progress through school they are provided with opportunities to develop their knowledge and working scientifically skills which enable them to ask questions and investigate the world around them.
- Each classroom will have a Science display which clearly shows the learning journey of the topic. The display must include vocabulary (with pictures) and the knowledge end point organiser to support learning. Children's work is to be displayed through out the topic.
- It is important that children develop the skills of a Scientist by fully immersing them in all areas of the subject. The local area is fully utilised to achieve desired outcomes, with opportunities for learning outside the classroom embedded in practise. School trips and fieldwork are provided to give first hand experiences, which enhance children's understanding of the world beyond their locality.



An example 'knowledge organiser' referred to as 'knowledge end points'. Y2

Scientific Knowledge and Progression

The Science curriculum at St Francis Xavier is carefully sequenced so that pupils build secure knowledge and understanding over time. New learning is explicitly connected to relevant prior learning and teachers revisit important knowledge and concepts to support long-term retention.

The curriculum develops knowledge across biology, chemistry and physics while ensuring that pupils understand the relationships between scientific concepts. Key vocabulary is explicitly taught, modelled and revisited so that pupils can increasingly communicate their scientific understanding accurately and confidently.

Teachers identify and address misconceptions through questioning, discussion, observation, practical activity and assessment. Where appropriate, models, representations and practical experiences are used to help pupils develop accurate scientific explanations.

Progression is planned in both substantive scientific knowledge and the ability to work scientifically. Expectations become increasingly challenging as pupils move from EYFS through Key Stage 1 and Key Stage 2.

Impact

By the time children leave St Francis Xavier they should:

- Achieve age related expectations in science for the end of their cohort year.
- Gain and use a wide variety of skills linked to both scientific understanding and scientific enquiry/investigation.
- Have a general knowledge of biology, chemistry and physics which will allow them to make sense of the world around them. Hence enabling them to take on further learning and acquire new skills.
- Use a richer vocabulary and be able to convey meaning of taught concepts.
- Become 'scientists' with a love, curiosity and understanding of the subject.
-

Expectations

Science should be evident in the weekly timetable of each class, taught by the class teacher where possible. All children are to be engaged and part of the lessons and a clear sequencing of lessons will be evident within books.

The structure of a Science lesson follows guidance from the Ark Curriculum.

It is expected that the following items are evident in Science lessons:

- Knowledge end points and front covers to be stuck in books at the start of each topic.
- High expectations of vocabulary. For example, children to be encouraged to speak in full sentences and use correct terminology within their answers and classroom discussions.
- High level of vocabulary to be modelled by all staff using correct terminology at all times.
- Clear skills and outcomes in all sessions to be presented spread using a variety of presentation devices. For example leaflets, water cycle spinner and written work, investigations.
- Learning objectives to be stuck in the books each lesson along with core knowledge and vocabulary taught in the lesson.
- Children to be aware of the learning journey to understand what they have learnt previously

and what they will learn.

- Engagement of all pupils
- Questioning
- A love of learning
- Developing curiosity about the world around them.
- Where appropriate children to have practical experiences and use experiments to investigate hypotheses.

Teaching

Teachers identify and address common misconceptions and pupils' existing ideas through questioning, discussion, observation and carefully designed practical experiences. Teachers explicitly develop pupils' scientific explanations and use appropriate models and representations where these support understanding.

Scientific vocabulary is explicitly introduced, explained, modelled, revisited and applied. Teachers model accurate pronunciation and use of scientific terminology. Pupils are encouraged to use scientific vocabulary in full sentences when explaining observations, predictions, results and conclusions.

Discussion and scientific reasoning are integral to science teaching. Pupils are encouraged to explain their ideas, make predictions, justify conclusions using evidence and consider alternative explanations.

Teachers anticipate common misconceptions and use questioning, discussion, practical experiences and assessment to identify and address them. Pupils are encouraged to explain their thinking, justify conclusions using evidence and consider alternative explanations. Scientific talk is an important part of lessons. Teachers model accurate scientific language and provide pupils with regular opportunities to use new vocabulary when explaining their ideas.

Wherever appropriate, pupils undertake scientific observation and enquiry in the school grounds and local environment. Visits, visitors and wider STEM experiences are used to enrich pupils' understanding of science and its applications.

Practical science activities are selected and carried out with due regard to pupil and staff safety. Appropriate risk assessments and control measures are used, and teachers ensure that pupils understand relevant safety procedures before undertaking practical activities.

EYFS

In EYFS, scientific learning is primarily developed through the area of Understanding the World and through carefully planned continuous provision and adult-led experiences. Children explore the natural and humanly constructed world through observation, investigation, discussion and practical experiences, both indoors and outdoors. Teachers assess children's development through ongoing observation and professional judgement in accordance with the school's EYFS assessment procedures.

Key Stage 1 and 2

We use the Mastery Curriculum+ for Science in Key Stage 1 and Key Stage 2 to ensure full coverage of the subject is taught. We ensure that there are opportunities for children of all

abilities to develop their skills and knowledge in each unit. Opportunities for progression are planned for to ensure that children are increasingly challenged as they progress through the school. Long term plans Our Long Term Plan for Science provides each year's long term objectives. Medium term plans These are broken down into half termly, of termly units of work based on long term planning. Plans are reviewed on a regular basis.

Responsibilities of the Science co-ordinator

The co-ordinator will be responsible for:

- The implementation, review and update of the policy.
- Providing schemes of work for all aspects of the Science Curriculum.
- Consultation and advice on resources and activities for other teachers.
- Attending any relevant courses and cascading relevant information.
- The ordering, storage and inventory of Science resources.
- Monitoring and evaluating how the curriculum is delivered.
- Auditing the needs of staff and arranging CPD.

Equal Opportunities

All pupils have an entitlement to high-quality Science education, irrespective of background, ethnicity, sex, disability, SEND, attainment or other individual characteristic. Teachers adapt resources, equipment, language, recording methods and levels of scaffolding where appropriate to ensure that pupils can participate fully in scientific learning and practical enquiry while maintaining appropriate levels of challenge.

Monitoring & Evaluation

The Science subject leader monitors the quality and impact of Science through a range of activities, which may include lesson visits, book scrutiny, pupil voice, planning and curriculum reviews, assessment information, learning walks and discussion with staff.

Monitoring considers whether pupils are developing secure scientific knowledge, using scientific vocabulary, making progress in working scientifically and remembering and applying prior learning.

Findings are used to identify strengths, areas for development and appropriate professional development.

Assessment

Assessment in Science is used to identify what pupils know, understand and can apply, as well as how effectively they can work scientifically.

Teachers use a range of assessment approaches, including:

- questioning and discussion;
- retrieval of previously taught knowledge;
- observation of pupils during practical and enquiry activities;
- assessment of scientific vocabulary;
- pupil explanations and reasoning;
- written and recorded work;
- practical outcomes;

- pre- and post-assessment activities where appropriate.

Assessment is used formatively to identify misconceptions, gaps in knowledge and areas requiring further teaching or retrieval.

Teachers use assessment information to adapt subsequent teaching and to ensure that pupils build securely on prior learning.

Teachers record attainment in accordance with the school's assessment procedures, including the use of O'Track where required. Assessment information is used to support professional judgement and does not replace teachers' knowledge of individual pupils.

Assessment does not rely solely on written work. Practical enquiry, discussion, observation and pupil explanations provide important evidence of scientific understanding and the ability to work scientifically.

