



St. Paul's Catholic Junior School
Science Curriculum and Teaching Policy
October 2025

*'Learning from the example of Jesus, our school will
be a place where everyone feels loved,
valued and encouraged to be and do the best they
can.'*

Reviewed and agreed by governors	November 2025
Next review	October 2027
Headteacher	J. Luck
Chair of governors	M. Evans

Programme of study (National Curriculum 2014)

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. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Intent

There are several key concepts which drive the Science curriculum at St. Paul's:

1) MISSION STATEMENT

At St. Paul's Catholic Junior School, everything that we do centres around our Mission Statement:

'Learning from the example of Jesus, our school will be a place where everyone feels loved, valued and encouraged to be and do the best they can.'

We live out this mission statement through developing an ethos and curriculum that encourages our pupils to **be kind, be respectful and be resilient**. As a Catholic school, we believe that fostering a knowledge of Christ and nurturing the spiritual, personal, moral and cultural development of our pupils is fundamental to all that we do.

2) KNOWLEDGE RICH AND HUMANITY RICH

Our Science Curriculum uses the National Programme of Study and content as its basis, whilst promoting our key values of kindness, resilience and respect. We aim for all our children to be independent, active, responsible, articulate and confident citizens of the future. Our approach to science is knowledge rich, covering the objectives of the National Curriculum, but also enquiry rich, ensuring that our children receive a high quality science education which offers the foundations for understanding how science will affect the future on a personal, national and global level. At St. Paul's, through quality first teaching, we apply a progressive model of science teaching, through which children develop a broadened scientific understanding of physical processes; properties, uses and changes of everyday materials and life processes of living things. Our teaching is also humanity rich – we aim for pupils to see how Science can make a difference to themselves, their communities and the wider world. Sustainability in particular is a key thread that pervades our curriculum.

We aim to enable pupils to develop a deeper understanding of a range of scientific ideas allowing children to explore and talk about their ideas; ask their own questions about scientific phenomena; and analyse functions, relationships and interactions more systematically.

We aim for all our children to explore different ways of working scientifically by asking and answering scientific questions; evaluating evidence, and presenting their conclusions clearly and accurately; comparing and grouping; identifying and describing patterns; planning and carrying out scientific investigations, using equipment (including computers) correctly.

Through working scientifically, we aim for them to understand more about the world we live in and develop a sense of excitement and curiosity about natural phenomena. In line with our Curriculum Policy and following the pedagogy of 'Heathcote's Continuum of Engagement', we seek for children to be actively invested in their learning, encouraging a 'botheredness' mindset which promotes both the retention and application of their knowledge, skills and understanding in making a positive difference to their own lives, their community and the wider world.

Exposing pupils to the wealth of diversity in Science also forms a large part of a 'knowledge and humanity rich' curriculum. We aim for pupils to experience learning based around scientists from a wide range of cultures and backgrounds, challenging stereotypes and generalisations.

3. ORACY

Oracy runs as a thread throughout the entire curriculum, but opportunities to develop these skills further are embedded into Science lessons, to encourage our pupils to acquire a strong command of the subject specific vocabulary and to develop the ability to articulate their opinions and ideas with clarity and confidence. We aim to promote a talk and vocabulary rich environment in all lessons.

4. RESILIENCE

We promote a growth mindset attitude that encourages perseverance when challenges are faced. This is particularly important in the realm of working scientifically.

5. MENTAL AND PHYSICAL WELL BEING

We aim for our Science teaching to promote physical and mental well being; lessons show the importance of a healthy lifestyle and encourage pupils to take pride in their learning, raising their self-esteem. British Values are central to our whole curriculum approach.

6. TRANSITION

We aim to work closely with our feeder Infant school, enabling a smooth transition in skills and knowledge from KS1 to KS2. We also aim to ensure that pupils' History skills in all areas prepare them for the demands of KS3.

We are committed to weaving career related learning through our History curriculum to prepare all of our pupils for the future.

In all History lessons, we highlight and reference nine key life skills:

- **Listening:** ability to listen critically to others
- **Presenting (speaking):** speaking clearly & ability to present oneself
- **Problem Solving:** finding many solutions to a problem
- **Creativity:** thinking of new / different ways to do things
- **Staying Positive:** being resilient in challenging situations
- **Aiming High:** aspiring to do your best in any task/ career
- **Teamwork:** being able to get along with others
- **Leadership:** ability to make difficult decisions and get support from others
- **Adaptability:** ability to thrive and cope in changing conditions

Implementation

Our Science curriculum is planned and sequenced so that new knowledge and skills build on what has been taught before. We recognise that new learning is fragile, so our approach is generative and sticky, enabling our pupils to make links between new and existing knowledge to aid long term retention. Retrieval quizzes on prior learning across the school also take place at the start of each lesson, as we know that the act of recalling information strengthens memory, allowing knowledge to move into the long term memory.

Science is taught throughout the year in stand-alone lessons. Within our curriculum, the key knowledge and skills for each year group can be seen in our progression maps. These have then been broken down into topics in our long and medium term planning, which class teachers then use to plan progressive and engaging lessons. Liaising with KS1, our approach is generative, enabling pupils to make links between new and existing knowledge to aid retention.

By the end of year 6, pupils will have a broadened scientific view of the world around them through biology, physics and chemistry. They will 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 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 draw conclusions based on their data and observations, using evidence to justify their ideas, and using their scientific knowledge and understanding to explain their findings.

Teachers apply a range of strategies within lessons to enable the children to become invested in their education. . Much of our pedagogy is based upon Rosenshine's Principles for Learning, aiming to promote retention of knowledge and allow all pupils to access learning. Practical investigations as well are selectively used by teaching staff to provide a purpose and structure for curriculum learning.

We believe that it is vitally important for children to develop their own opinions and voice about science, the impact that key scientific findings have upon the world, how this relates to the children's own lives today and future developments. We are committed to closing the vocabulary gap that exists between children in order to widen their opportunities in life and improve their communication skills. In order to facilitate this, Oracy is promoted across all lessons.

Both vocabulary development and reading are integral to the teaching of science within St. Paul's. Progression maps for vocabulary are used to ensure prior learning in this area is built on from year to year. Vocabulary is also progressively taught between lessons in each topic and is evident on the science displays that are used within each classroom. A range of quality text based sources are used within lessons across the school to enrich the children's experience and to promote the application of reading skills where possible.

We also seek to provide a range of enrichment opportunities for Science to cement and widen knowledge, skills and behaviours. These may vary from extra curricular activities for specific year groups to visits from scientific experts or to places of scientific interest. British Science Week will be a focus point across the school each year to promote the importance and potential of Science to our pupils.

Our Science curriculum aims to promote diversity. We encourage pupils to discover more about famous scientists from a variety of cultural backgrounds.

Assessment:

The monitoring cycle is set out by the senior leadership team at the beginning of each academic year. Monitoring includes book scrutinies, lesson observations, learning walks and pupil/staff voice surveys. All monitoring undertaken helps to improve our practice, with the aim of bettering the outcomes for our pupils.

Formative assessment is an integral part of daily lessons and is first and foremost the essence of helping our pupils to make instant progress in both disciplinary and substantive knowledge. We use live marking and verbal feedback in all lessons to enable teachers to target next steps for pupils effectively. Opportunities for children to review and improve their learning are embedded into each lesson.

Termly data drops take place for Science. These provide a 'snapshot in time' of pupils' understanding related to the set out objectives of the curriculum that has been delivered. To aid teachers in making judgements, internal standardisation takes place each term for Science, with teachers across the school reviewing and moderating a selected sample of pupils' work against the relevant progression map objectives. Both the data drops and standardisation receipts help the subject lead and SLT to analyse current trends and hone in on vulnerable groups that might require further support or intervention.

Implementation regarding SEND and inclusion

Teachers at St. Paul's Junior School consistently plan from the outset, set high expectations, suitable challenges and remove any barriers for learning, for all pupils. We firmly believe that 'good teaching for pupils with SEND is good teaching for all' (EEF 2020). Quality First Teaching is paramount to this and teachers will also encourage and support independence wherever possible so that the children are able to learn more, complete more independently, remember more and prepare for the tomorrow. Many of our strategies are based on Rosenshine's Principles for Learning and are also in line with EEF guidance on high quality teaching and special educational needs in mainstream settings (2021). Retrieval practice is central to our approach, as we recognise that new learning is fragile and that knowledge must be revisited to embed it and help children commit learning to long term memory. Our classroom environments support the children's long term learning as much as possible. Display boards within all classrooms are added to progressively from lesson to lesson in topics with key vocabulary. These can then be referred back to in the next lesson to promote sticky learning and to scaffold all children in retaining key language and information. Retrieval quizzes at the start of lessons ensure that prior learning is

revisited. Our curriculum is designed in such a way as to ensure that prior learning is revisited and can be progressively built upon.

Teachers use appropriate assessments to help inform their planning, this way a person-centered approach ensures progress is made and makes their learning a personalised experience. This approach is used for all pupils in the class, focusing particularly on the following groups of children:

- More able pupils
- Pupils with low prior attainment
- Pupils from disadvantaged backgrounds
- Pupils with SEND
- Pupils with English as an additional language (EAL)
- Pupil premium children
- Pupils with summer birthdays

Teachers will plan lessons so that pupils with SEND are able to successfully access the Science curriculum and ensure that there is no ceiling placed on their learning or what they can achieve. This includes promoting independence and allowing the children to feel a sense of equality and belonging in their classroom environment. We aim for all children, as far as possible, to be able to access learning in lessons. The children are supported in many different ways and this support is adjusted according to the children's needs and their way of learning, processing information and recording their work. These strategies include:

- Oral rehearsal of sentences before committing ideas to paper.
- Vocabulary written on board for all children to access (or on a whiteboard for a specific child/group).
- Screen shots taken of board work and placed in front of the children on an ipad.
- Extra/focused explanation.
- Video recording of work if writing is an issue/use of speech notes on Book Creator.
- Modelling of work before asking children to complete it.
- Sentence stems written on board to help children to frame their answers.
- Step by step instructions for a task. These can be voice recorded if needed.
- Tasks chunked with breaks as required.
- Use of a task organiser to increase independence levels.
- Use of concrete resources where needed.
- Overlearning and precision teaching of facts and information needed for the topic.

- Additional time to complete tasks and process information if needed.
- Use of concept cartoons to promote critical thinking.
- Peer/group work (particularly structured talk).
- Visual formats to help them to manage their time more effectively.
- Speaking slowly and getting children to confirm his understanding by asking questions regularly.

Teachers will also take account of the needs of pupils whose first language is not English. Lessons will be planned so that teaching opportunities help pupils to develop their English; our whole school focus on Oracy is an important level of support for these children. This enables teachers to support pupils to take part in all subjects.

Impact

At St. Paul's, we ensure that all students are exposed to rich learning experiences that:

- enable all students to make good progress in their scientific knowledge, skills and vocabulary from whatever the students starting point may have been. We define good progress as knowing more and remembering more. It is the widening of knowledge, skills, understanding and behaviours.
- encourage children to take an interest in the science curriculum which enables our children to develop a fascination with the world around them.
- we aim to inspire our children to become the next generation of scientists, engineers and environmentalists who love, look after and respect themselves, their communities and the world around them.
- to provide pupils with a language rich Science experience, which enables them to apply their knowledge as articulate citizens of the future.
- for our pupils to be kind, respectful and resilient and to carry these skills forward into their future.
- for pupils leaving us to be well prepared for the next stage in their lives, particularly for the further study of Science at KS3, but also with skills that they can take forward into their future careers.
- for pupils to apply their knowledge in their own lives to enable them to have a good level of physical and mental well-being.

