



Science Policy on a Page:



Curriculum Intent:

The intention of our Science curriculum is for all of our children to develop an age-appropriate understanding of the knowledge, methods, processes and uses of Science, through the specific disciplines of Biology, Chemistry and Physics. Understanding 'The Bigger Scientific Picture' of their learning will allow our children to develop their own understanding of the impact of Science upon the world around them and answer deepening scientific questions- comprehending that this has implications both today and in the future.

Our bespoke curriculum design, promotes children's natural curiosity and excitement of Science with a rich variety of experiences and observations, tailored to the meet the needs of our learners. As children progress through school, they will become more proficient in different types of scientific enquiry, applying their growing knowledge to work scientifically through our knowledge-enabled approach. With rich links to reading and employment in Scientific industries, Science capital can be developed while promote positive attitudes to STEM, thus influencing aspirations for future study and employment.



Curriculum Vision:

At Parish Church of England Primary School, we inspire children to deepen their understanding of the world around them by nurturing their natural curiosity about how things are made and how they change over time. We aim to foster a genuine sense of awe and wonder in their exploration of scientific concepts and wider spiritual development.

We also strive to build Science capital – the knowledge, attitudes, experiences, and resources they accumulate throughout life – across the whole school community; thus helping children to recognise the lifelong opportunities that scientific learning and STEM subjects can offer within future study.



Curriculum Sequencing:

Use of the National Curriculum as a basis with statutory content mapped out on bespoke knowledge planners. This is delivered through a minimum of one and half hours discrete Science teaching every week throughout school. Starting in EYFS laying the foundations for Scientific learning, five units per year group each span 7 weeks to ensure depth and breadth of coverage. Teaching sequence is fully explained on 'Science Unit Structure—Implementation Documentation.

A Unit Structure Summary [7-week unit of work unless a double unit where it is 14 weeks]						
Week 1 [Part A + B] Practical Pre-Learning. Pre-Learning Vocabulary. The Bigger Scientific Picture.	Week 2 QUEST Lesson.	Week 3 QUEST Lesson.	Week 4 QUEST Lesson.	Week 5 QUEST Lesson.	Week 6 QUEST Lesson.	Week 7 Exit Task Completion. Post-Learning Vocabulary
One carefully chosen high-quality core unit text will be used throughout the unit (at the teacher's discretion) to enhance delivery and build Science Capital						

Teaching sequence is fully explained on 'Science Unit Structure—Implementation Documentation. Independent learning is encouraged throughout where misconceptions are embraced and used as essential teaching points. Promoting scientific enquiry at the core, built into every lesson, with use of skills progression papers across year groups. Aspirational knowledge is also carefully considered across topics, building systematically on previous topics containing overarching transferable concepts which run throughout all topics. Our Science curriculum aims to develop 'Science Capital', as a measure of children's engagement or relationship with Science, how much they value it and whether they feel it is 'for them' and connected to their life.



Curriculum Progression:

The curriculum has been planned to systemically include both the statutory working scientifically strands from the National Curriculum and the five core areas of scientific enquiry, alongside core knowledge. This has been strategically mapped out on individual knowledge planners.

Strands of Scientific Enquiry: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources.

Working Scientifically Skills:

sort/group/compare/classify/identify/research/modelling/recording/questioning/planning/using equipment/communicating/communication/collaboration.

We have three transferrable concepts (the disciplines of Chemistry, Physics and Biology), each of which have big ideas, that span across our whole school Science curriculum.

Chemistry (What everything is made of and how it works).

Physics (Understanding how force, objects and energy all interact. Physical Things).

Biology (The study of living things. Bios is Greek for life).

To see our 12 big ideas, visit our Science long-term plan.



Reading as the Beating Heart

Reading is the beating heart of our Science lessons, enriched by a carefully curated Science reading spine that supports curriculum learning and the imparting of knowledge. Pupils are encouraged to explore further through additional texts from our School Library Service, deepening their understanding and curiosity. Annual events like "Reading is STEMsational" ignite excitement with strong STEM links, inspiring young minds. Throughout, vital scientific vocabulary is explicitly taught, and regular deliveries of Science magazines to KS2 ensure learners stay engaged with current scientific ideas and discoveries.

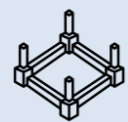


EYFS As the Bedrock:

In EYFS, Science is initially explored through the ELG Understanding the World, with a focus on Our Natural World – The Discipline of Science. Children develop their scientific understanding through five carefully planned learning enquiries detailed in our EYFS knowledge planner. The Science curriculum across EYFS is planned and sequenced effectively to support all children's progression, appropriate to their age and stage of development. These enquiries nurture curiosity and observation skills, encouraging children to notice patterns, ask questions, and explore the world around them. Learning is rooted in the Characteristics of Effective Learning: engagement through play and exploration, motivation via active learning, and thinking through creative and critical enquiry. This approach not only fosters a love of Science (with outdoor learning being a central component) but also lays a strong foundation for the more formal and progressive scientific learning they will encounter in Year 1.



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Strong Foundations:

Our Science curriculum clearly defines the essential knowledge for Reception and Key Stage 1, guiding teachers in prioritising both teaching and assessment through high-quality interactions. When gaps in knowledge, skills, or behaviour are identified, staff receive time and training to adapt curriculum content or teaching approaches as needed. Scientific learning remains central, with care taken not to introduce complex reading and writing tasks too early. Science is taught for 90 minutes each week, supporting fluency in foundational knowledge and skills through regular practice and retrieval. The curriculum has been carefully reviewed to avoid overload and maximise learning time. 'Speak It' opportunities are embedded throughout to develop articulate, confident learners.



Inclusive Practice - Meeting the needs of all learners:

We are committed to meeting the needs of all learners through inclusive, adaptive teaching in Science. Our planning promotes metacognition and enables children to access learning at their own level, supported by knowledge organisers to deepen understanding. Pupils receive targeted support based on individual needs, including pre-teaching and interventions to reinforce scientific knowledge.

For those with identified SEND, teachers use appropriate assessment to ensure needs are met as identified through their pupil passport. Using our SEND Toolkit, lessons are planned to address potential areas of difficulty and remove barriers to achievement. This aligns with the EEF's Adaptive Teaching recommendations, incorporating explicit instruction, cognitive strategies, scaffolding, flexible grouping, and technology. Our approach ensures all learners secure the milestone knowledge required to progress with confidence.



Teaching Pedagogy:

Our primary Science lessons follow a clear pedagogical structure, guided by Rosenshine's Principles of Instruction to ensure effective teaching and learning.

Each lesson includes opportunities to review prior knowledge, check understanding, model scientific concepts, scaffold new learning, and guide practice. The QUEST approach underpins lesson delivery, promoting curiosity, enquiry, and critical thinking. Outdoor learning is regularly integrated, allowing pupils to engage with Science in real-world contexts and deepen their understanding through hands-on exploration. Bespoke knowledge organisers and planners support both in-class learning and independent home study, helping pupils retain key knowledge and develop as confident, capable young scientists.

Question to answer.

Understanding previous learning.

Explore new knowledge and vocabulary.

Student practise.

Talk, test, tell.



Developing Cultural Capital:

In Science, develop cultural capital by equipping children with the knowledge, behaviours, and skills to understand and engage with the world around them. Through our rich Science curriculum, pupils explore key areas of scientific interest—biology, chemistry, and physics—while recognising the impact of Science in everyday life. Using our QUEST approach, children are fully immersed in scientific enquiry, thinking and working like scientists in every lesson. We nurture Science Capital through participation in STEM weeks, links with local universities such as Edge Hill and Liverpool Hope, and a range of Science-focused trips and visits. Opportunities like the STEM Ambassador programme and career exploration further broaden pupils' understanding of the wide variety of paths within the world of Science, inspiring future aspirations.



Rainbow Promises

Our Science curriculum is designed to develop resilience by encouraging children to engage in fair testing, persevere through trial and error and draw conclusions from evidence. It nurtures curiosity through enquiry-based learning and promotes articulate learners who can confidently express their ideas and observations. Strong mathematical links support the development of skills such as measuring, recording data and interpreting results. Carefully sequenced lessons build on prior knowledge and skills, ensuring a deep, connected understanding of scientific concepts. Well-being is also supported through outdoor learning, where children explore the natural world, experience awe and wonder and make sense of the world around them.



Staff CPD:

Our approach to CPD in Primary Science is rooted in collaboration, consistency, and continuous improvement. Internally, regular coaching cycles support staff by modelling best practice and effective teaching strategies across year groups. The Science Subject Lead recently achieved the Primary Science Quality Mark (GILT) Award through close collaboration with colleagues. Planning and curriculum sequencing are developed across the partnership, ensuring coherence and progression. Staff benefit from external support through the 'Reading is STEMsational' programme with STEM Learning, online 'Reach Out CPD', termly Science Teaching Newsletters, and curriculum updates via LDST networking and School Improvement Liverpool. This comprehensive CPD ensures strong foundations in Science are in place from the earliest years.



Assessment:

Our Science curriculum is supported by robust and consistent assessment procedures, guided by the TAPS Science Pyramid and the principle of 'active pupils, responsive teachers'. These processes are embedded across all year groups and ensure accurate tracking of both substantive and working scientifically knowledge. Assessments include practical pre-learning tasks, vocabulary checks, retrieval activities in every lesson (with three formally recorded per topic) and diagnostic exit tasks to evidence scientific enquiry. Teachers make final topic judgements (emerging, expected, or exceeding) using bespoke statements aligned with the TAF. Assessment data is recorded and analysed using the LDST Trust Assessment System (Ask Eddi).