St Mary's Primary School

Science Curriculum Guide

We follow the Programmes of Study found within the Science National Curriculum and our teaching and learning in this subject is built around these three key aims. Pupils should:

- develop scientific knowledge and conceptual understanding of the specific disciplines of biology, chemistry and physics
- develop understanding of the nature, processes and methods of science through different types of science enquiries that help them answer scientific questions about the world around them
- are equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

Long Term Overview & Knowledge Organisers

Our yearly overview shows the teaching sequence of key blocks for each year group. Sequences of lessons are carefully planned to build on prior knowledge. Our detailed long-term overview includes prior knowledge children should know, sticky knowledge, key vocabulary and links to key scientists. Teachers carefully plan to ensure gaps are addressed.

St Mary's has its own Knowledge Organiser for each key block within the Programmes of Study. These are used as title pages in Science books and are referred to throughout units of work to support recall. Please check these each term and make any necessary changes, using visuals where possible.

Our Scheme of Learning — updated for 2026–27

Science at St Mary's is taught through weekly lessons. We teach activities that match the objectives listed in the National Curriculum's Statutory Requirements.

> *Biggest change this year: due to Trust-wide standardisation, our planning should stem from The Education People scheme, which is now our main curriculum and should be followed for every unit. Teachers can choose which term they teach each unit, and should use their own judgement about whether a lesson needs to be split over more than one session — the Trust recognises that some Education People lessons are longer than a single session.*

Additional activities to supplement the planning might come from:

- The ‘Notes and guidance (non-statutory)’ section for that key block within the Programmes of Study
- The BBC Bitesize and/or BBC Teach
- TAPS
- PLAN
- Other appropriate resources located elsewhere

Our aim is to provide activities which encourage deep independent thought and purposeful explanation.

Lesson Structure — DELBAR

We believe it is vital to revisit and recap essential knowledge from previous key blocks, so every lesson begins with a quick retrieval of prior learning. Ideally, science should be timetabled for a longer than normal slot.

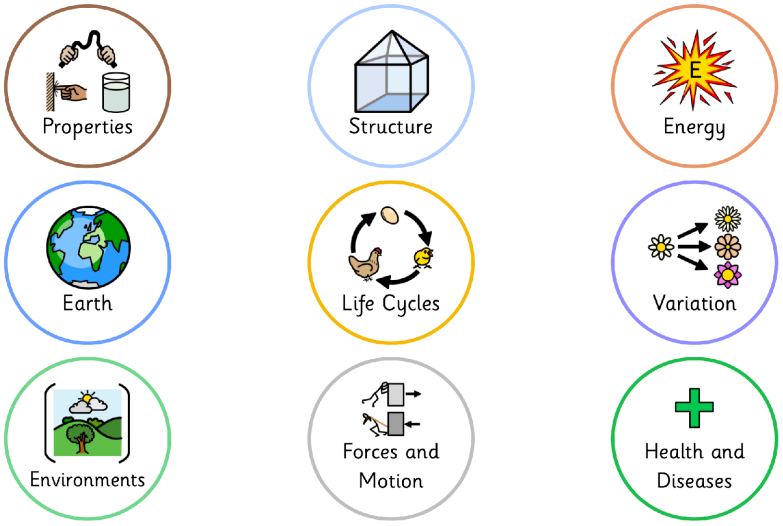
- Lessons start with a quick retrieval — you could use questions from previous Head Start assessments, the long-term plan, Explorify, BBC Bitesize or quizizz.com
- Vocabulary explained — consider using visuals
- New learning — practical where possible, following The Education People scheme

- Have challenge questions available
- Plenary
- One quadrant quiz to be completed per term

Science Big Ideas

Each lesson will have a focus on at least one of our nine substantive Big Ideas, shown below. This should be made explicit to the children so they can make links and connections between their learning.

> *Repeated learning: these Big Ideas are revisited every year across different units, so pupils repeatedly meet, apply and build on the same core scientific ideas as they move through the school. This repetition strengthens long-term memory, helps new learning stick, and allows pupils to progressively develop a strong scientific schema.*



Science Big Ideas at St Mary's.

We also teach pupils about the unique processes of enquiry in science. Our Big Ideas for Working Scientifically (disciplinary content) are taught alongside these substantive Big Ideas, so that pupils build both scientific knowledge and the skills to investigate it.

The planned sequence of lessons provides opportunities for pupils to cover all of this essential key knowledge. Our planned lessons also aim to:

- ensure pupils are familiar with, and can use, technical terminology accurately and precisely, and can build up an extended specialist vocabulary
- allow pupils to apply their mathematical knowledge to their understanding of science, including collecting, presenting and analysing data
- be taught within the wider school curriculum, using different contexts to maximise pupils' engagement with and motivation to study science.

Enquiry Lessons

Several lessons within the planned sequence will cover key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. Ideas for these lessons focusing on scientific enquiry now come from The Education People scheme first. They could also come from our enquiry overview, TAPS assessment, or PLAN resources.

Assessment — updated for 2026–27

- Challenge questions at the end of each lesson — either as an exit-ticket style activity, or recorded in books
- Quadrant quiz — one per term, recapping on previous learning
- On-going teacher assessment — you might want to do a quiz at the end of each unit
- Working scientifically skills are assessed throughout the unit, using the TAPS focused assessment plans
- Assessment is recorded on our tracker in Arbor

Change this year: we are no longer using Head Start as our summative end-of-unit assessment. However, you may still find it useful to draw on Head Start questions within your quadrant quizzes or as part of lesson retrieval.

Books, Displays & Feedback

Teachers provide regular feedback for pupils and give them opportunities to respond with their Purple Pen of Progress. We believe it is essential that pupils address any misconceptions and correct mistakes in the spelling of key scientific vocabulary. Marking should be completed as per the school policy, providing useful next steps that address misconceptions or move learning forward.

Investigation logos are used throughout the school. We have progressive formats for recording investigations when working scientifically, and we also use planning boards to enable fair testing and independence. The whole investigation doesn't always have to be written down — you might instead want to focus on a quality prediction or conclusion. A variety of templates are available if you would like to use them for full investigations.

Every class has a science working wall with key vocabulary, the enquiry types, our investigation logos and current learning. Displays should include:

- Key visual vocabulary (Tier 3)
- Visuals/diagrams where possible, to support abstract concepts
- Useful information, presented like a knowledge organiser
- Investigation logos and enquiry types
- New this year: sentence stems, e.g. “I predict… because…”, “The evidence shows…”

Enrichment & Science Capital

Our science curriculum is enriched with outdoor learning links. Each class has 3 terms of Outdoor Learning every year.

Our school organises special events for our pupils to take part in and we promote science capital throughout the year. Some ways we do this include:

- Trips such as We The Curious
- Visitors (dentists, vets, astronomers)
- Whole school events (National Tree Week, British Science Week, Great Science Share)
- Links with other schools
- After school clubs
- Using the ‘suggested significant people’ section in the scheme of learning to link to scientists and careers