



**ST. PETER'S
PRIMARY
SCHOOL**
EVERYONE COUNTS

SCIENCE POLICY

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Version

1.1

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Next Review

September 2023

Statement of Intent

At St Peter's Primary School, children are encouraged to be inquisitive throughout their time at the school and beyond. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout each topic, children will acquire and develop key knowledge that has been identified within each unit and across each year group. This knowledge is identified and informed by the National Curriculum and builds towards identified 'end points' in accordance with National Curriculum expectations.

Key 'Working Scientifically' skills are also mapped for each year group and are progressive throughout the school. These ensure systematic progression for each learner within the subject.

St Peter's Primary School believes that practical experiences for all learners should be the norm; using equipment, conducting experiments, building arguments and explaining concepts confidently are skills which are taught throughout the school.

The school's approach to science takes account of the school's own context, ensuring regular access to the local, natural environment and places of scientific interest as part of the school's commitment to learning outside the classroom. Cross curricular opportunities are also identified, mapped and planned to ensure contextual relevance.

Children are encouraged to ask questions and to be curious about their surroundings and a love of science is nurtured through whole school themes and a vibrant, varied science curriculum.

Legal framework

This policy has due regard to all relevant legislation and statutory guidance including, but not limited to, the following:

- The Control of Substances Hazardous to Health Regulations (COSHH) 2002
- The Reporting of Injuries, Diseases and Dangerous Occurrences Regulations (RIDDOR) 2013
- DfE (2013) 'Science programmes of study: key stages 1 and 2'
- DfE (2021) 'Statutory framework for the early years foundation stage'

This policy operates in conjunction with the following school policies:

- Health and Safety Policy
- COSHH Policy
- Primary Teaching and Learning Policy
- Primary Assessment Policy

Roles and responsibilities

The governing board is responsible for:

- Ensuring a broad and balanced science curriculum is implemented in the school.
- Ensuring the school's science curriculum is accessible to all pupils.

The Headteacher is responsible for:

- The overall implementation of this policy.
- Ensuring the school's science curriculum is implemented consistently.
- Ensuring appropriate resources are allocated to the science curriculum.
- Ensuring all pupils are appropriately supported.
- Appointing a member of staff to lead on the school's approach to teaching science.

The science lead is responsible for:

- Preparing policy documents, curriculum plans and schemes of work for science.
- Reviewing changes to the national curriculum and advising on their implementation.
- Monitoring the learning and teaching of science, providing support for staff where necessary.
- Organising the deployment of resources and carrying out an annual audit of all science resources.
- Leading staff meetings and providing relevant staff with the appropriate training.
- Advising on the contribution of science to other curriculum areas.

Science teachers are responsible for:

- Acting in accordance with this policy.
- Ensuring that lessons are taught in line with the school's Health and Safety Policy at all times.
- Liaising with the science lead about key topics, resources and support for individual pupils if required.
- Ensuring that all relevant statutory content is covered within the school year.
- Monitoring the progress of pupils in their class and reporting this on an annual basis.
- Reporting any concerns regarding the teaching of the subject to the science lead or a member of the SLT.
- Undertaking any training that is necessary to teach the subject effectively.

The National Curriculum

The national curriculum will be followed for all science teaching.

Reception

During Reception, in accordance with the 'Statutory framework for the early years foundation stage', focus will be put on the seven early learning goals (ELGs), with the scientific aspect of pupils' work relating to the objectives set out within the framework.

The ELGs cover:

1. Communication and language: listening, attention and understanding; and speaking.
2. Personal, social and emotional development: self-regulation, managing self, and building relationships.
3. Physical development: gross motor skills and fine motor skills.
4. Literacy: comprehension, word reading, and writing.
5. Mathematics: number and numerical patterns.
6. Understanding the world: past and present; people, culture and communities; and the natural world.
7. Expressive arts and design: creating with materials; and being imaginative and expressive.

Pupils are encouraged to use their natural inquisitiveness, while taking part in exploratory play in specific scientific areas, as well as areas that link across the EYFS framework.

Key Stage One

During Key Stage One, pupils observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer questions, find patterns, classify and group objects, research using a variety of sources and carry out fair testing.

Pupils use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables. Science lessons in Key Stage One are taught discretely and where possible, connected to other curriculum areas.

Key Stage Two

Children are encouraged to extend their scientific questioning and answers about the world around them. Pupils carry out a range of scientific enquiries including: observations over time, pattern seeking, classifying, grouping and research using secondary sources (including computing resources). Children in Key Stage Two learn to plan Science investigations by only changing one variable to make it a control test in addition to comparative testing.

Working Scientifically

During Years 1 and 2, pupils will be taught to:

- Ask simple questions and recognise that they can be answered in different ways.
- Observe closely, using simple equipment.
- Perform simple tests.
- Identify and classify.
- Use their observations and ideas to suggest answers to questions.
- Gather and record data to help in answering questions.

During Years 3 and 4, pupils will be taught to:

- Ask relevant questions and use different types of scientific enquiries to answer them.
- Set up simple practical enquiries, comparative and fair tests.
- Make systematic and careful observations and, where appropriate, take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.
- Gather, record, classify and present data in a variety of ways to help answer questions.
- Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.
- Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.
- Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

- Identify differences, similarities or changes related to simple scientific ideas and processes.
- Use straightforward scientific evidence to answer questions or to support their findings.

During Years 5 and 6, pupils will be taught to:

- Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.
- Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.
- Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
- Use test results to make predictions to set up further comparative and fair tests.
- Report and present findings from enquiries, including conclusions, causal relationships, and explanations of the results and the degree of trust in them, in oral and written forms such as displays and other presentations.
- Identify scientific evidence that has been used to support or refute ideas or arguments.

Cross-curricular links

Where possible, the science curriculum will provide opportunities to establish links with other curriculum areas. This includes:

English

- Pupils' writing skills are developed through recording their planning, what they observe and what they found out.

Maths

- Pupils use their knowledge and understanding of measurement and data handling, including through recording their findings on charts, tables and graphs.

PSHE

- Health education is taught as part of the science units about humans, including information about healthy lifestyles, growth, age, and reproduction.

Teaching and Assessment

Lesson planning

All relevant staff are briefed on the school's lesson planning procedures as part of staff training.

Throughout the school, science is taught as a discrete lesson and as part of cross-curricular teaching when appropriate. The statutory national curriculum content from the DfE's 'Science programmes of study: key stages 1 and 2', as outlined above, as the starting point for their planning.

Lesson plans will balance visual, auditory and kinaesthetic elements used in teaching, ensuring that all pupils with different learning styles can access the learning experience. All lessons will have clear learning objectives, which are shared and reviewed with pupils.

Long-term planning will be used to outline the units to be taught within each year group. Medium-term planning will be used to outline the vocabulary and skills that will be taught in each unit of work, as well as highlighting the opportunities for assessment, identifying learning objectives, main learning activities and differentiation. Short-term planning will be used flexibly to reflect the objective of the lesson, the success criteria and the aim of the next lesson, building on medium-term planning and taking into account pupils' needs.

Teaching

Pupils will be taught to describe associated processes and key characteristics in common language, as well as understand and use technical terminology and specialist vocabulary. Lessons will allow for a wide range of scientific enquiry, including the following:

- Questioning, predicting and interpreting
- Pattern seeking
- Practical experiences
- Collaborative work
- Carrying out investigations
- Carrying out time-controlled observations
- Classifying and grouping
- Undertaking comparative and fair testing
- Researching using secondary sources

Opportunities for outdoor learning will be routinely provided. Each year group will have the opportunity to undertake science-based external educational visits where possible.

Assessment

Pupils will be assessed and their progression recorded in line with the school's Primary Assessment Policy. Assessment in science will be based upon scientific knowledge and understanding.

Pupils will be assessed continually throughout the year and will undertake an 'End of Topic Test' at the conclusion of each topic. These are delivered under test conditions (KS2) or as a whole class lesson/discussion (KS1). Teachers are encouraged to go through the test with their class to ensure understanding has taken place.

Formative assessment will be carried out informally throughout the year. This will enable teachers to identify pupils' understanding of subjects and inform their immediate lesson planning. The results of end-of-year summative assessments will be passed to relevant members of staff, such as the pupil's future science teacher.

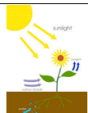
Assessment will take various forms, including the following:


- End of topic tests
- Talking to pupils and asking questions
- Discussing pupils' work with them
- Assessing work against learning objectives
- Specific assignments for individual pupils
- Observing practical tasks and activities
- Pupils' self-evaluation of their work

Parents will be provided with a written report about their child's progress during the Summer term every year. Reports will include information on the pupil's attitude towards science, progress in understanding scientific methods, ability to investigate, and the knowledge levels they have achieved. Verbal reports will be provided at parent-teacher meetings during the Autumn and Spring terms.

Pupil Self-assessment

Pupils throughout KS1 and KS2 will be expected to self-reflect their understanding and application according to the 'Working Scientifically' strands using self-assessment grids placed in the front of their books. Pupils 'traffic light' their understanding at the end of every term or topic.

 Working Scientifically targets - Year 2	Self-Assessment					
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
I can ask simple questions about the world around me.						
I can observe closely, using simple equipment.						
I can perform simple tests.						
I can identify and classify.						
I can use my observations and ideas to suggest answers to questions.						
I can gather and record data to help in answering questions.						

 Working Scientifically targets - Year 6	Self-Assessment					
	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
I can plan <u>enquiries</u> , including <u>recognising and controlling variables</u> where necessary.						
I can take <u>measurements</u> , using a <u>range of scientific equipment</u> , with increasing accuracy and precision						
I can <u>record data and results</u> of increasing complexity using <u>scientific diagrams and labels, classification keys, tables, bar and line graphs, and models</u>						
I can <u>report findings from enquiries</u> , including oral and written explanations of results, explanations <u>involving causal relationships, and conclusions</u> .						
I can <u>present findings</u> in written form, displays and other presentations.						
I can use <u>test results to make predictions</u> to set up further comparative and fair tests.						
I can use <u>simple models</u> to describe scientific ideas						
I can <u>identify scientific evidence</u> that has been used to <u>support</u> or <u>refute ideas</u> or arguments.						

Equipment and resources

Science resources for each unit are kept in the store cupboard opposite the Year 4 classrooms.

The science lead is responsible for ensuring that all resources and equipment are sufficiently maintained, and for maintaining an inventory of resources. The science lead will carry out an audit of the science resources, reordering any consumables when necessary. Any equipment or resources which are a cause of concern will be removed immediately.

Equipment will be checked by the relevant science teacher prior to each use and any damages or defects will be reported to the science lead immediately. Staff will also inform the science lead of any changes regarding science resources, such as when supplies

of resources have run out or new resources are required. The science lead is responsible for negotiating requests from staff and ensuring resources are bought within the amount allocated in the annual budget.

Health and safety

Staff will act in accordance with the school's Health and Safety Policy at all times. A risk assessment will be carried out by teachers before higher-risk science-related activities, e.g. conducting an experiment or undertaking practical activities.

All science teachers and other relevant staff will be shown how to correctly use science equipment as part of their induction training. Staff will also be made aware of the COSHH and RIDDOR regulations as part of their induction training and will act in accordance with these whilst undertaking activities.

All pupils will be shown how to correctly use equipment prior to use and will be monitored by staff whilst using equipment. Pupils will also be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment, and the personal safety protocols and protective equipment needed when using equipment or carrying out tasks, e.g. goggles.

At the beginning of any experiment, the science teacher will outline the purpose of the experiment to the class, and all hazards and safety precautions will be thoroughly outlined. Any experiments or activities not previously conducted by the science teacher will be trialled prior to being undertaken with pupils.

Accidents and near-misses will be reported following the school's reporting procedures.

Equal opportunities

All pupils will be given equal access to the entire science curriculum, including practical experiments.

Where required, pupils with SEND will be provided with additional support in order to fully engage with the science curriculum.

Where it is inappropriate for a pupil to participate in a specific lesson because of reasons related to any protected characteristics, the lesson will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

The school aims to provide more academically able pupils with the opportunity to extend their scientific thinking through extension activities such as problem solving, investigative work and scientific research.

Monitoring and review

This policy will be reviewed on an annual basis by the science lead, in collaboration with the Headteacher. The next scheduled review for this policy is September 2023.

Any changes made to this policy will be communicated to science teachers and other relevant staff.