



Priory Parish CE Primary Science Policy

As a Christian family, together, we will realise our God-given ability to change the world.

Our vision for science:

At the Priory Parish CE Primary School we aim to implement a science curriculum which encourages the children to confidently explore the world around them. We encourage exploration and discovery through inquiry based investigation to promote a deeper understanding of the world rooted in the principle that science uses evidence to make sense of our surroundings.

Through practical and exciting experiences and careful questioning we hope to inspire a sense of awe and wonder and empower pupils to be curious, inquisitive and logical in their acquisition of knowledge regarding the world which they will inherit.

This sits within our curriculum aims of:

Retention of powerful knowledge and vocabulary

Application

Inspiration

Success

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Elevation

The aims of science are to enable children to:

- Ask and answer scientific questions.
- Make predictions based upon available evidence, prior learning and experience of the world.
- Plan and carry out fair scientific investigations, using equipment including use of technology.
- Know and understand the life processes of living things.
- Know and understand the physical processes of materials, electricity, light, sound and natural forces.
- Know about materials and their properties.
- Evaluate evidence and present their conclusions clearly and accurately.

Teaching and Learning

We aim to provide a variety of learning opportunities to develop the children's knowledge and understanding of Science. We do this through knowledge and practical-based activities which are well-planned and provide children with 'hands on' experiences to support what they are learning. The children will experience whole-class, small group, paired and independent work.

Planning and Resources

Science is taught to the equivalent of half a day per week though the time may be divided up as necessary to accommodate timetable concerns. Our main guidance for lesson planning is through the use of the Rising Stars Switched On Science (2nd Edition) Programme. This programme was chosen due to its design including frequent opportunities for hands-on, visual activities and investigations; this curriculum design and these learning opportunities engage and support our pupils. Teachers design their lessons around the planning and resources within the programme and tailor/supplement them specifically for the Priory's pupils and all learners. Teachers should adapt these

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lessons as necessary, to meet the needs of all learners. The Rising Stars Switched On Science planning shows the following key information:

- Learning Objectives relating to the science statements in the Primary National Curriculum for science.
- Detailed steps the children will need to access the learning.
- Key Science Vocabulary for the unit/lesson.
- Elements of differentiation to match needs of specific children.
- Teacher resources.

A summary of the key knowledge and vocabulary which the children are expected to learn and retain is gathered into a knowledge organiser which is both presented to the pupils and sent home to parents at the start of the topic and acts as a reference guide for the duration of a topic. Key learning is also recorded on a mind map by the children which is added to continually through the course of the unit.

Working Scientifically' Expectations

All key skills within a Science unit should be taught before moving on. The 'Working Scientifically' key skills should be addressed within each unit, developing the opportunity to be addressed more than once. Each unit will be completed with the learners having the opportunity to explore and use the working scientifically skills and link them to the process of investigation they have undertaken.

Pupils are encouraged to ask scientific questions. They should have the opportunity to use a variety of data, such as statistics, graphs, pictures and photographs.

Investigations should be set out using the Plan, Do, Record, Review method:

Plan:

- Raise questions
- Fair-test
- Predict

Do:

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- Measure/observe

Record:

- Record (usually as tables and graphs)

Review:

- Use tables and graphs
- Describe results
- Explain results

Evidence of Learning

Evidence of work completed during Science lessons will be shown in exercise books and through digital recording of evidence in the form of photographs, video recording etc. Digital evidence should be uploaded to the science folder and/or the pupil drive folder on the shared drive where appropriate. Evidence could include: written explanations; diagrams and sketches; photographs of children working scientifically; report writing; graphs and charts. All written work should be marked and where necessary and appropriate contain written feedback pertinent to that lesson's learning. Opportunities will be provided for children to respond to this feedback using purple pen.

Assessment

Learners are assessed using Switched On Science assessments at the Priory. They consist of 3 tests provided at the beginning, mid-point and end of each unit and a further end of year assessment. The assessment data is fed into a spreadsheet which tracks individual progress against the expected standard and whole class performance. The cumulative data for each unit is used to assess gaps and review/plan ahead accordingly. The cumulative data across all units is used to provide an assessment of progress throughout the year and an assessment against the expected standard for the purposes of reporting progress to all appropriate parties.

Teachers report to parents on pupil's level of attainment at the end of an academic year in the form of written reports. Teachers will identify if a pupil is working towards expected standards (WTS), working at the expected standards (EXP) or working above the expected standard (GDS) within the subject of Science.

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Knowledge Organisers and Mind Maps

Each area of study should be clearly identified in pupils' books in the form of a knowledge organiser which sets out the learning intentions for each area of study and the working scientifically aspects the pupils will focus on. It will also include the key vocabulary for the area of study. In addition, the pupils will be able to note down their previous knowledge and questions they would like answered around the subject in a mind map which should appear on an adjacent page within their science books. The questions the children generate should be used to guide the learning intentions and exploration throughout the unit of work and feature upon the classroom's science working wall.

Curriculum Links

Science units are linked, where possible, to the year group's topics. During a Science unit, there should be evidence of knowledge-based activities; practical-based activities to support, deepen or embed knowledge and investigation or experiment to allow the development and application of Working Scientifically skills and view their widening understanding of the world with awe and wonder.

Links to PSHE

Science makes a significant contribution to teaching of PSHE. It lends itself to raising matters of citizenship, health and social welfare. For example, through studying how the environment is affected by decisions made, and how health is affected by smoking or alcohol. It provides children with the opportunity to discuss, debate and question a range of issues and aims to promote positive citizenship.

Equal opportunities

We recognise the fact that we have children of differing scientific ability in all our classes and so we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways by:

- Setting common tasks that are open ended and can have a variety of responses;
- Setting differentiated tasks for different abilities where appropriate;

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- Planning activities/lessons in which both lower achieving and higher achieving pupils can progress, achieve and are challenged.
- Providing suitable and adequate resources for the task;
- Using support assistants or other adults to support the work of groups or individual children;
- Using a variety of learning strategies and stimuli to cater for the various learning styles within the class.

Roles and Responsibilities

All Teaching Staff:

The curriculum key skills and knowledge progression across the Key Stages are outlined in the Scientific Skills Progression Document and the Scientific Knowledge Progression Document. The teaching of Science should include the opportunity for children to undertake practical investigations in each area of learning. The local environment, including the school grounds, can be used wherever possible to enhance the curriculum subject to the undertaking of risk assessments where appropriate. Classroom displays or Science working walls can be used to show case pupil's achievements and work, current learning, key vocabulary and scaffold learners.

Teachers take responsibility for assessing the health and safety of their pupils within Science lessons.

Subject Champion and Key Stakeholders:

It is the responsibility of the subject leader, the Headteacher and Governors to monitor the standards of pupil's work and the quality of teaching in Science. This is done through book monitoring alongside pupil voice and lessons visits. The science subject leader is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. An action plan is written annually and reviewed termly.

Resources for the Teaching of Science

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Resources are mainly stored centrally in the cupboards located in the after school room and are renewed and updated by the subject lead as required.

Foundation Stage

We teach Science in the Foundation stage as an integral part of the topic work covered during the year. It comes under Understanding the World in the EYFS. Children must be supported in developing the knowledge, skills and understanding that help them to make sense of the world. Their learning must be supported through offering opportunities for them to use a range of tools safely; encounter creatures, people, plants and objects in their natural environments and in real-life situations; undertake practical 'experiments'; and work with a range of materials.

September 2021

"Somewhere, something incredible is waiting to be known."
Carl Sagan.

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