

St Thomas the Martyr CoE Primary School



Science Policy 2026 - 2027

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Our Vision

Through a positive caring environment, we provide the opportunity for every child to reach their full potential. We embrace Christian values and ensure all children are ready for their next steps. This vision was split into six target areas by a cross section of pupils and staff to the following points:

- Exciting, interesting and engaging lessons
- Discovery through practical's
- Use of vocabulary
- Recording information in different ways
- Using real life analogies to support theory
- Being able to discuss, explain and transfer learning confidently

Rationale

Science is a systematic investigation of the physical, chemical and biological aspects of the world which relies on first hand experiences and on other sources of information. The scientific process and pupils' problem-solving activities will be used to deepen their understanding of the concepts involved. The main aspects of science to be studied will be determined by the programmes of study of the National Curriculum 2014.

Through science pupils at St Thomas the Martyr CoE Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Aims

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life
- to build on pupils' curiosity and sense of awe of the natural world
- to use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science
- to introduce pupils to the language and vocabulary of science
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- to develop pupils' use of computing in their science studies.
- to extend the learning environment for our pupils via our environmental areas and the locality
- to promote a 'healthy lifestyle' in our pupils.

Objectives

The following objectives derived from the above aims will form the basis of our decisions when planning a scheme of work. Assessment will also be related to these objectives:

- to develop pupils' enjoyment and interest in science and an appreciation of its contribution to all aspects of everyday life.
- to develop a knowledge and appreciation of the contribution made by famous scientists to our knowledge of the world including scientists from different cultures
- to encourage pupils to relate their scientific studies to applications and effects within the real world
- to develop a knowledge of the science contained within the programmes of study of the National Curriculum.

To build on pupils' curiosity and sense of awe of the natural world

- to develop in pupils a general sense of enquiry which encourages them to question and make suggestions
- to encourage pupils to predict the likely outcome of their investigations and practical activities

To use a planned range of investigations and practical activities to give pupils a greater understanding of the concepts and knowledge of science

- to provide pupils with a range of specific investigations and practical work which gives them a worth-while experience to develop their understanding of science
- to develop progressively pupils' ability to plan, carry out and evaluate simple scientific investigations and to appreciate the meaning of a 'fair test'.

To develop the ability to record results in an appropriate manner including the use of diagrams, graphs, tables and charts

- to introduce pupils to the language and vocabulary of science
- to give pupils regular opportunities to use the scientific terms necessary to communicate ideas about science
- to develop pupils' basic practical skills and their ability to make accurate and appropriate measurements
- within practical activities give pupils opportunities to use a range of simple scientific measuring instruments such as thermometers and force meters and develop their skill in being able to read them.

To develop pupils' use of ICT in their science studies

- to give pupils opportunities to use ICT (video, digital camera, data logger) to record their work and to store results for future retrieval throughout their science studies

- to give pupils the chance to obtain information using the internet.

Principles of teaching and learning

Differentiation and Additional Educational Needs

The study of science will be planned to give pupils a suitable range of differentiated activities appropriate to their age and abilities. Tasks will be set which challenge all pupils, including the more able. For pupils with SEN the task will be adjusted or pupils may be given extra support. The grouping of pupils for practical activities will take account of their strengths and weaknesses and ensure that all take an active part in the task and gain in confidence.

Breadth, Balance and Variety

Pupils will be involved in a variety of structured activities and in more open-ended investigative work:

- activities to develop good observational skills
- practical activities using measuring instruments which develop pupils' ability to read scales accurately
- structured activities to develop understanding of a scientific concept
- open ended investigations.

On some occasions pupils will carry out the whole investigative process themselves or in small groups.

Relevance

Wherever possible science work will be related to the real world and everyday examples will be used.

Cross-curricular skills and links

Science pervades every aspect of our lives and we will relate it to all areas of the curriculum. We will also ensure that pupils realise the positive contribution of both men and women to science and the contribution from those of other cultures. We will not only emphasise the positive effects of science on the world but also include problems, which some human activities can produce. Children will be encouraged to apply skills from other areas of the curriculum, including; maths and English, when presenting, recording or explaining concepts taught.

Continuity and Progression

Foundation Stage pupils investigate science in all areas of the curriculum, but particularly Understanding of the World and physical development. Children are encouraged to investigate through practical experience; teachers guide the children and plan opportunities that allow the children to

experience and learn whilst experimenting for themselves. By careful planning, pupils' scientific skills and knowledge gained at Key Stage 1 will be consolidated and developed during Key Stage 2.

Pupils in Key Stage 1 will be introduced to science through focused observations and explorations of the world around them. These will be further developed through supportive investigations into more independent work at Key Stage 2. The knowledge and content prescribed in the National Curriculum will be introduced throughout both key stages in a progressive and coherent way, as shown in the coverage map.

Staff have access to a support booklet for each year group that outlines the broken down curriculum objectives, including scientific knowledge, vocabulary and working scientifically skills in scaffolded steps.

Equality of Opportunity

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at St Thomas the Martyr CoE Primary School are responsible for ensuring that all children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, have access to the whole curriculum and make the greatest possible progress. Where appropriate, work will be adapted to meet pupils' needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities. Gender and cultural differences will be reflected positively in the teaching materials used.

All children have equal access to the science curriculum, its teaching and learning, throughout any one year. This is being monitored by analysing pupil performance throughout the school to ensure that there is no disparity between groups.

Health and safety

Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.

Assessment for Learning, recording and reporting

Throughout the school teachers will assess whether children are working at/above or below the expected level for their age based on their understanding and application of the content of the National

Curriculum 2014. Progress and attainment is reported to parents through parents' evenings and end of year reports, as well as termly assessments recorded on the Lancashire tracker.

Marking for Improvement (see policy)

Much of the work done in science lessons is of a practical or oral nature and, as such, recording will take many varied forms thus making marking different. It is, however, important that written work is marked regularly and clearly, as an aid to progression and to celebrate achievement. When appropriate, pupils may be asked to self-assess or peer assess their own or other's work.

Marking for improvement comments in a child's book must be relevant to the learning objective to help children to better focus on future targets and will follow the school's marking policy. Any practical work recorded will be available on Seesaw.

Role of the subject leader

Science will be led by one member of teaching staff but enhanced by all staff within school (currently J. Mott). Standards of teaching and learning will be adjudged using work sampling and data review.

Resourcing

Specialist pieces of equipment and those posing a potential safety risk will be held centrally and staff access when required. Resource materials to support the teaching of science and link to Working Scientifically can be found alongside the resources to give staff both practical and subject knowledge support.

The Curriculum

The curriculum will be based on the National Curriculum 2014 and staff will have freedom of teaching their year group throughout the year. Working scientifically will be expected to be seen in every science lesson in one aspect or another. Below is a breakdown of the curriculum topics by year group and working scientifically expectations for end of KS1 and 2.

	Biology	Chemistry	Physics
Year 1	Plants Animals, including humans	Everyday Materials	Seasonal changes
Year 2	Living things and their habitats Plants Animals, including humans	Uses of everyday materials	
Year 3	Plants Animals, including humans	Rocks	Light Forces and magnets
Year 4	Living things and their habitats Animals, including humans	States of matter	Sound Electricity
Year 5	Living things and their habitats Animals, including humans	Properties and changes of materials	Earth and Space Forces
Year 6	Living things and their habitats Animals, including humans Evolution and inheritance	Additional link units to be completed in conjunction with UHHS to prepare pupils for secondary transition.	Light Electricity

The Curriculum: Working Scientifically progression

Black – Year group expected

Red – Working above

Working scientifically Year 1
I can ask simple scientific questions.
I can use simple equipment to make observations.
I can carry out simple tests with support.
I can identify and classify things.
I can suggest what I have found out.
I can find out by watching, listening, tasting, smelling and touching.
I can talk about similarities and differences.
I can explain what I have found out using scientific vocabulary.
I can make accurate measurements.
Working scientifically Year 2
I can ask simple scientific questions.
I can use simple equipment to make observations.
I can carry out simple tests.
I can identify and classify things.
I can suggest what I have found out.
I can use simple data to answer questions
I can make predictions
I can say whether things happened as I expected and if not why not.
I can suggest more than one way of grouping animals and plants and explain my reasons.
I can use information from books and online sources to find things out.
Working scientifically Year 3
I can ask relevant scientific questions.
I can use observations and knowledge to answer scientific questions.
I can set up a simple enquiry to explore a scientific question.
I can set up a test to compare two things.
I can set up a fair test and explain why it is fair.
I can make careful and accurate observations, including the use of standard units.

I can use equipment, including thermometers and data loggers to make measurements.
I can gather, record, classify and present data in different ways to answer scientific questions.
I can use diagrams, keys, bar charts and tables; using scientific language.
I can use findings to report in different ways, including oral and written explanations, presentation.
I can make a prediction with a reason.
I can identify differences, similarities and changes related to an enquiry.
I can record and present what I have found using scientific language, drawings, labelled diagrams, bar charts and tables.
I can use my findings to draw a simple conclusion.
Working scientifically Year 4
I can ask relevant scientific questions.
I can use observations and knowledge to answer scientific questions.
I can set up a simple enquiry to explore a scientific question.
I can set up a test to compare two things.
I can set up a fair test and explain why it is fair.
I can make careful and accurate observations, including the use of standard units.
I can use equipment, including thermometers and data loggers to make measurements.
I can gather, record, classify and present data in different ways to answer scientific questions.
I can use diagrams, keys, bar charts and tables; using scientific language.
I can use findings to report in different ways, including oral and written explanations, presentation.
I can draw conclusions and suggest improvements.
I can make a prediction with a reason.
I can identify differences, similarities and changes related to an enquiry.
I can plan and carry out a scientific enquiry by controlling variables fairly and accurately.
I can record more complex data and results using scientific diagrams, classification keys, tables, bar charts, line graphs and models.
I can report findings from scientific enquiries through written explanations and conclusions.
Working scientifically Year 5
I can plan different types of scientific enquiry.
I can make predictions using information.

I can vary one factor whilst keeping the others the same in an experiment.
I can measure accurately and precisely using a range of equipment.
I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
I can report findings from enquiries in a range of ways.
I can explain a conclusion from an enquiry.
I can read, spell and pronounce scientific vocabulary accurately.
I can explore different ways to test an idea, choose the best way and give reasons.
I can use the outcome of test results to make predictions and set up a further comparative fair test.
I can explain causal relationships in an enquiry.
I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.
I can explain (in simple terms) a scientific idea and what evidence supports it.
Working scientifically Year 6
I can plan different types of scientific enquiry.
I can control variables in an enquiry, identifying dependent and independent variables.
I can measure accurately and precisely using a range of equipment.
I can record data and results using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.
I can use the outcome of test results to make predictions and set up a further comparative fair test.
I can report findings from enquiries in a range of ways.
I can explain a conclusion from an enquiry.
I can explain causal relationships in an enquiry.
I can relate the outcome from an enquiry to scientific knowledge in order to state whether evidence supports or refutes an argument or theory.
I can read, spell and pronounce scientific vocabulary accurately.
I can use information from different sources to answer a question and plan a scientific enquiry.
I can make a prediction that links with other scientific knowledge.
I can plan in advance which equipment I will need and use it appropriately.
I can link my conclusions to other scientific knowledge.

Intent, Implementation and Impact

Intent

At St. Thomas the Martyr, it is our intention to recognise the importance of science in every aspect of daily life. We give the teaching and learning of science the prominence it requires. The scientific area of learning is concerned with increasing pupils' knowledge and understanding of our world, and with developing skills associated with science as a process of enquiry. It will develop the natural curiosity of the child, encourage respect for living organisms and the physical environment, and provide opportunities for critical evaluation of evidence. St. Thomas the Martyr ensures that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding, not only of the topic they are studying, but of the world around them. We intend to provide all children, regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

Implementation

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school. Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum programmes of study for science 2014 and Understanding the World in the Early Years Foundation Stage. Science teaching at St. Thomas the Martyr involves adapting and extending the curriculum to match all pupils' needs. Where possible, science is linked to class topics. Where this is not possible, science is taught as discrete units and lessons where needed to ensure coverage of the curriculum. Teachers plan to suit their class' interest, current events, their own pedagogy, the use of any support staff and the resources available. Previous science ambassadors and representatives from each class chose six targets for the implementation of science across the school. These are:

- Exciting, interesting and engaging lessons
- Discovery through practical lessons and activities
- Use of scientific vocabulary
- Recording information in different ways
- Using real-life analogies to support theory
- Being able to discuss, explain and transfer learning confidently

In order to achieve these targets and deliver a thorough and balanced curriculum, we deliver that in the following ways:

- A clear and comprehensive scheme of work in line with the National Curriculum 2014 where teaching and learning should show progression across all key stages within the strands of science.
- Children have access to key language and meanings in order to understand and readily apply to their written, mathematical and verbal communication of their skills.
- Children will use a range of resources to develop their knowledge and understanding that is integral to their learning and develop their understanding of working scientifically.

- A clear and comprehensive scheme of work in line with the National Curriculum 2014 where teaching and learning should plan for practical and investigative opportunities within science lessons.
- Children will reflect on previous learning and cross-curricular links will be made wherever possible.
- Children will be able to build on prior knowledge and link ideas together enabling them to question and become enquiry-based learners.
- Attainment will be assessed each half term through related topic assessment tasks.
- Where applicable, links to science will be made to develop the children's topical learning.
- All science lessons will contain an element of Working Scientifically strand of their year group, thus allowing children to build enquiry skills, in order to question and investigate the world around them.

Impact

The impact and measure of this is to ensure children not only acquire the appropriate age-related knowledge linked to the science curriculum, but also the skills which equip them to progress from their starting points and within their everyday lives.

- Children enjoy and are enthusiastic about science in our school.
- There is a clear progression of children's work and teachers' expectations in our school.
- Children's work shows a range of topics and evidence of the curriculum coverage for all science topics.
- Children are becoming increasingly independent in science, selecting their own tools and materials, completing pupil-led investigations and choosing their own strategies for recording.
- Feedback from teachers has impact on our pupils, often with next-step questions to push learning on.
- Standards in science at the end of the key stages are good and issues arising are addressed effectively in school.
- Teachers' judgements are moderated internally and externally at science cluster meetings.
- Our SLT and governors are kept up-to-date with developments in the way science is taught and managed in our school with subject reports, action plans and review meetings.