

Acton CE Primary Academy



To develop the learners of tomorrow and equip them with the skills to flourish and succeed for nothing is impossible with God-Luke 1:37

Science Policy

This policy was approved by Trustees on

Megan Nurse Chair of Governors

Adopted on

This policy will be reviewed annually on or before

Our School 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 under the Christian vision that nothing is impossible with God Luke 3:37.

Our Science Vision

Making sense of our world and beyond through excitement and exploration.

Intent

At Acton we are committed to providing all children with learning opportunities to engage in Science.

The purpose of Science education is to give pupils the skills, concepts and knowledge necessary to understand the world around them and find answers to questions they may have.

We want to cultivate an enjoyment of Science and therefore have an enquiry-based curriculum, with an emphasis on working scientifically. As part of our overarching 'Real Life Learning' we strive to make links to the real world of Science and ensure that this is central to children's learning. We hope to inspire children to become the scientists of the future, with the skills to make their own discoveries and further their own knowledge in areas of their interest.

Aims

The aims of Science are:

- To provide a curriculum that relates to the real world and real-life skills.
- To make links to real life scientists and jobs in Science to encourage children to see themselves in roles across the sciences.
- To have children that are engaged in interactive lessons.
- To develop children's questioning.
- To provide opportunities for children to lead their own learning.
- To foster enjoyment and motivation in Science for all our children.
- Children feel secure and confident in exploring their own ideas.
- Children can apply other curriculum skills with purpose.

Implementation

The children undertake a programme that follows the national curriculum for Science to ensure clear progression from primary to secondary school due to it being a core curriculum area. We also felt that the national curriculum for Science met the needs for our pupils and provided a rounded delivery of the subject. We enhanced the curriculum through our own real life learning focus by having the concept of the children working in role as part of each topic to bring the link to real life jobs and scientists to life in the classroom. We follow the national curriculum sequencing of content to develop pupils' knowledge, skills and

understanding progressively. The only deviation from the 'set' year group topics is within upper Key Stage Two where the forces unit has been moved to Year 6 as this was a better fit with their terms topic of building a go-kart and therefore Year 5 learn about light. However, this follows the national curriculum guidance on moving units with the two-year band at lower and upper key stage 2. In KS1 the units of work focus on the world around them with a strong biology focus and build on from their own knowledge and what they can explore, this builds on perfectly from EYFS understanding the world. Then in KS2 children continue to build on their own world through biology led units whilst also being introduced to more abstract units such as forces. We follow the national curriculum to ensure that children are ready for high school and have the broad science subject knowledge base expected. We value real life learning links and experiences. Therefore, each unit is linked to a real scientist role. We have done this to help the children to move away from the stereotypical view of a scientist and open their eyes to the real-life jobs they could aspire to within this industry. We have an emphasis on skills-based teaching and learning in line with the trust's beliefs on effective education and as we believe these are the most essential skills to be gained for future scientists.

To reduce workload, the science subject leader has produced medium term planning for all units for the teachers to adapt to suit their own class. The science subject leader has also created several documents to support the delivery of the medium-term plans that have been produced such as PMI questions to promote questioning and critical thinking in science and documents to support the promotion of key vocabulary within each unit. All overviews and progression statements are shared on the website and planning is situated on our school shared google drive.

Progression and Continuity

We recognise the fact that we have children of differing 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 through a range of strategies which are differentiated by task, expected outcome and/or support from peers or adults. The science subject leader has produced progressive medium term plans from Year 1 up to Year 6.

Inclusion and Equal Opportunities

All teaching and non-teaching staff at Acton are responsible for ensuring that every pupil, regardless of gender, race, culture, background and ability have the opportunity to experience education at an appropriate and challenging level. To ensure that pupils experience high standards of success, Science needs to be taught with regards to pupil's abilities to ensure progress. We aim to identify and minimise barriers to learning and take account of gender, ability, disability, social, cultural, and linguistic background when planning lessons. All units begin with an assessment so that teachers are able to identify and address any gaps in subject knowledge and skills. Provision is made to enable all pupils to participate effectively in curriculum and assessment activities. The focus on key scientists of note has been carefully planned to ensure as many different groups are represented as possible. This policy ensures that certain aspects of science are not seen as more appropriate for boys or girls. Individual teachers consider carefully the groupings they have. These might depend on the experiences the children have had in their home environments.

Accessibility and Teaching Art to pupils with Special Educational Needs

We teach Science to all pupils, whatever their ability, in accordance with the information set out in our school curriculum overviews, providing a broad and balanced curriculum to all. Teachers provide learning opportunities matched to the needs of children of all capabilities, setting and reviewing appropriate targets.

Progress and Achievement

Children are monitored on a regular basis to check progress. The subject leader has created activities to assess children at the beginning of each unit so that teachers can identify needs and gaps in knowledge as well as children who will need to be challenged further. We encourage all pupils to take responsibility for their own and their peers' learning. A range of Assessment for Learning strategies are used, for example peer marking – the children regularly peer mark and are encouraged to comment on each other's work using vocabulary related to the skill taught. Verbal and written commentary is used to show achievement and what needs to happen next. The subject leader has included suggestions for challenging more able pupils within the medium-term plans produced for science.

Assessment and Recording

At Acton assessment is an integral part of the teaching process. Assessment is used to inform planning and to facilitate differentiation. The assessment of children's work is on-going to ensure that understanding is being achieved and that progress is being made. Teachers use unit assessments at the beginning of each unit and utilise target tracker to gather and record data throughout each unit. For each unit taught pupils undertake a TAPS assessment-based session, where teachers focus on assessing their working scientifically skills and/or subject knowledge.

Monitoring

Each child has a science book which serves as a cumulative record of their work. Evidence of practical tasks is gathered using observation records on target tracker, particularly for the working scientifically elements of science. Monitoring takes place regularly through sampling children's work, teacher planning and lesson observations.

Roles and Responsibilities

The subject is led by the Science Subject leader who regularly consults with staff to review and improve the curriculum provision and ensure training and resources are up to date.

Spiritual, moral, social and cultural development

The teaching of Science offers opportunities to support the social development of our children through the way we expect them to work with each other in lessons as there are lots of opportunities for group work. Groupings allow children to work together and give them the chance to discuss their ideas and feelings about their own work and the work of others. Their work in general helps them to develop a respect for the abilities of other children and encourages them to collaborate and cooperate across a range of activities and experiences. The children learn to respect and work with each other and with adults, thus developing a better understanding. They also get the opportunity to take on different roles with a group.

Resources

There are a wide range of resources to support the teaching of science across the school. People with an interest, or expertise, in a particular topic or area of science could be invited into school to work with the children. These might be parents, grandparents, other family members, neighbours, or representatives of the local community. We regularly have visits arranged by the local rotary to enhance science week each year.

Health and Safety

Health and Safety Children should be taught to use items of protective clothing as appropriate and be encouraged to develop safe and tidy work practices. Teachers and pupils should be aware of potentially hazardous materials and tools in relation to their storage and use. Teachers will always teach the safe use of tools and equipment and insist on safe practice. Risk assessments are in place where required and reviewed regularly.

Science Displays

Intent

The learning environment is important as a means of adding greater depth and breadth to children's learning. Every classroom should have a science working wall display that should include the following:



- All displays should be backed onto dark green paper with a light green border.
- The topic being studied currently should be clearly displayed.
- Key vocabulary being currently used should be displayed for pupils to access when needed throughout the lesson.
- Science skills symbols should be displayed each lesson to re-enforce what skills are the focus for the current lesson.
- The scientist in focus should be on display – this should include pupil work and/or ideas/questions.
- Pupil's work should be celebrated as part of the display.
- Non-fiction texts should be available that link to

the current topic. Pupil questions and ideas related to the topic should be allocated a spaced on the display