

Science Policy

Halsall St Cuthbert's Primary School

Date: December 2020

To be reviewed: December 2023

Intent

To excite and engage children with the world around them, through developing their scientific understanding whilst embracing their awe, wonder and natural curiosity. All pupils will develop their scientific enquiry skills and employ a variety of communication methods throughout the curriculum. Our Science curriculum aims to inform children of the work of eminent scientists and open their eyes to the vastness of the field of "science", regardless of gender or cultural differences.

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 Halsall Primary School will continue to deepen their respect, care and appreciation for the natural world and all its phenomena.

Objectives

Our Science curriculum meets the following objectives and those dictated in the National Curriculum 2014 for content and coverage.

- 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 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 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

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.

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

Continuity and Progression

Foundation Stage pupils investigate science as part of Understanding of the World. 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.

Key stages 1 and 2 follow the Lancashire Grid For Learning whole-school planning, which determines topics for each year group. This ensures full coverage and enables topics to be revisited to secure key learning. As we are mixed age classes, a 2 year long-term plan is used. Scientific skills progress following a year group expectation map, called "working scientifically" grids.

We use the Lancashire investigation boards that children are introduced to in KS1 and become increasingly familiar with throughout KS2.

Teacher use a common planning sheet, which highlights the vocabulary needed for the unit, a skill focus and the scientists who link to the topic. Maths and English links are made explicit and any possible trips or visitors are recorded. The final outcome for the pupils' learning is expected to be a real, useful outcome, to ensure the children see a purpose to their learning.

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.

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.

Equality of Opportunity

All children have equal access to the science curriculum and its associated practical activities. The SLT, Class Teachers and TAs at Halsall 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.

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 and these will be communicated to the children.

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. At the end of each unit taught, teachers will use the KLIPs document for that unit to assess and record pupils' attainment in that area.

Progress and attainment is reported to parents through parents' evenings and end of year reports.

Marking

Much of the work done in science lessons is of a practical or oral nature and, as such, recording and marking will take many varied forms. 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 comments in a child's book must be relevant to the learning objective to help children to better focus on future targets.

Role of the subject Leader

Science is led by Claire Galley. Standards of teaching and learning will be judged using work sampling and assessment data review. The policy will be reviewed regularly.

Resourcing

Resources are kept organised into labelled boxes in the central area. Teachers are regularly asked if there are any equipment requirements or requests to enhance the provision.