



## Gorse Hall Primary School Science policy

This policy outlines the guiding principles by which Gorse Hall Primary School will implement Science in the National Curriculum (2014) in England in the context of Tameside's curriculum policy statement and its staffing, health & safety and equal-opportunities policies. It is reviewed periodically.

### Rationale

Our rationale for teaching science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills.

### Aims

We believe that a broad and balanced science education is the right of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching science include the following:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science.
- Increasing children's science capital through aspiration and enrichment.

### Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, curiosity
- Instilling perseverance and responsibility.
- Encouraging self and peer assessment to aid the monitoring of pupil progress.
- Building children's self-confidence to enable them to work with increasing independence.
- Developing our children's social skills to work co-operatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

## Skills

- Giving children an understanding of scientific processes.
- Helping our children to acquire a range of practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, specific themed vocabulary, recording and techniques.
- Developing the use of ICT in investigating and recording where appropriate.
- Enabling children to become effective communicators of scientific ideas, facts and data.
- Encouraging children to apply skills across the curriculum and to make links between science and other subjects.
- Developing children's questioning skills and providing opportunities for their use.

## Subject development

Science is a core subject in the National Curriculum in England. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

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.

Our role is to teach scientific enquiry through the contexts of the three main content areas of physics, chemistry and biology. The breadth of study statement in the National Curriculum is concerned with issues such as the use of ICT, scientific language and health & safety.

## How science is structured through the school

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of National Curriculum Science and science in the Foundation stage. Science teaching in the school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

Knowledge and skills are taught in thematic units linked whenever possible to other areas of the curriculum. Children participate in a range of child-led, hands-on investigations in order to experience science first hand. Relevant scientific vocabulary is embedded in teaching and learning and built upon progressively.

Careful planning ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify the NC programmes of study to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.

## Our approach to science

The essential elements describing how science is taught in our school are described below:

- We provide pupils with a range of specific investigations and practical work which gives them worth-while experiences to develop their understanding of science.
- Within 'Working Scientifically', we aim to give children experience of the 5 enquiry types: observation over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing; and research using secondary sources
- We use ICT for enquiry work where appropriate, including microscopes with digital cameras, video capture of images and activities, and data logging.
- Other resources include selected short video sequences and other visual resources which have been networked for interactive-whiteboard use.
- The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.
- We encourage children to ask and answer their own questions at every appropriate opportunity.
- Children complete several enquiries during each unit of work, taking increasing responsibility for their planning, carrying out and recording of investigations, and interpretation and presenting of results.
- We use homework to support school and class activities on occasion when appropriate.
- We use cross-curricular links to science with, for example, design and technology units, Maths measuring and estimating skills etc
- We develop science informally through science clubs; Eco and Africa committee links; school visits and guest visitors; Science weeks; and Science fairs for parents and carers and other out-of-school activities.

### **Equal opportunities in science**

Science is taught within the guidelines of the school's equal-opportunities policy. We aim to teach science in a broad global and historical context, using the widest possible perspective and including the contributions of people of many different backgrounds. We draw examples from other cultures, recognising that simple technology may be superior to complex solutions.

### **Assessment and recording in science**

We use assessment to inform and develop our teaching.

- Themes commonly begin with an assessment of what children already know with a variety of 'I know, I think, I wonder' activities.
- Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Children are taught to self- and peer-evaluate increasingly as they progress through school. Work is assessed positively, making it clear verbally, or on paper, where understanding is secure, and how it could be further improved. Children's work is often evaluated against agreed success criteria to determine its level. Regular moderation of work takes place to ensure that our assessment is consistent. Assessment records are reviewed annually.
- We have a tracking system to follow and accelerate children's progress. In KS1 and 2, children are assessed as Emerging, Developing, Secure or Mastered. The school science leaders monitor progress through the school by sampling children's work at regular intervals and through 'child chats'. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.
- The school uses a variety of methods to aid formative and summative assessment, including: oral questioning, quizzes, 'true or false?' games, concept cartoons, mind-maps and simple

written tests. Equally important is the continuous assessment of children's work and enquiry skills, much of which is informal. This assessment is used to inform teaching throughout the school.

- End of unit teacher assessment is based on observations, questioning and work samples.
- Reports to parents are made verbally at parents' evenings, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

Review This science policy will be reviewed by the science curriculum leaders and the senior leadership team.

Reviewed Nov 2021

Next Review Date Nov 2023