

Thomas Gray Primary School
Science Policy

1. Aims

1.1 We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and attitudes to live successfully within today's society. We at Thomas Gray Primary School, aim to stimulate a child's curiosity; encouraging them to find out why things happen the way they do. We teach methods of enquiry and investigation to stimulate creative thought, promoting the use of scientific questions to analyse the way we live, how the world works and the way in which science will affect the future on a personal, national and global level.

1.2 Through the framework of the National Curriculum 2014, science aims to:

- Develop scientific knowledge and conceptual understanding through the specific Disciplines of biology, chemistry and physics.
- Develop understanding of the nature, processes and methods of science through Different types of science enquiries that help them to answer scientific questions about the world around them.
- Equip children with the scientific knowledge required to understand the uses and implications of science, today and for the future. (National Curriculum, 2014)

2. Teaching , learning and Inclusion

2.1 Thomas Gray uses a variety of teaching and learning styles within our science lessons. Our principal aim is to develop children's knowledge, skills and understanding. A variety of methods are used to deliver high quality and affective learning experiences for all, these include:

- Whole class teaching.
- Child led learning.
- Enquiry based research activities.
- Practical experiments.
- Visual and kinaesthetic based enquiry.
- Working individually and collaboratively.

Children have opportunities to collect a variety of data through:

- Statistics
- Graphs
- Pictures/photographs
- I Pads
- Computers

Children are given the opportunity to present their work through:

- Presentations
- Question and answer time
- Scientific quizzes
- Role play

2.2 We recognise that in all classes children have a wide range of scientific abilities and at Thomas Gray we provide suitable learning opportunities for all children. We ensure that challenges are matched to the ability of the child and we achieve this by:

- Setting tasks that are open ended and can have a variety of responses.

- Setting tasks of increasing difficulty
- Grouping children by ability and setting appropriate tasks for each ability group.
- Providing resources of different complexity, matched to the ability of each child.
- Using classroom assistants to support the work of an individual child or group of children.

3. Science curriculum planning

The school uses the national scheme of work for science as the basis of its curriculum planning. If required, schemes are adapted to local circumstances of the school, making use of the local environment.

Science planning is in three phases:

- 3.1 Long-term planning:** This maps the scientific topics studied in each term during the key stage. The curriculum map is created through collaboration with science subject leader and teaching colleagues. The curriculum map can be obtained from the Science Subject Leader.
- 3.2 Medium-term planning:** Scholastic 100 science lessons and Tig Tag online science resource are used along with the National Curriculum to create medium term planning.
- 3.3 Weekly planning:** The class teacher is responsible for science lesson plans. Lesson plans should include specific learning objectives, planned activities, assessment opportunities, key vocabulary, safety issues, incorporation of ICT, differentiation and should show how EAL, SEN and GT children are to be supported.

4. The contribution of science in other curriculum areas.

- 4.1 English :** Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The children develop their oracy skills through discussions, collaborative work and presentations. They develop their writing skills through report writing, projects and recording results.
- 4.2 Mathematics:** Mathematics is evident throughout the teaching of science and can be seen in a number of ways; through the use of weights and measures; observations and recording ; reading and creating statistical graphs.
- 4.3 Information and Communication Technology (ICT):** Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select and analyse information on the internet. Children use ICT to present and record data through videos, recording charts and photographs.
- 4.4 Personal, Social and Health Education (PSHE) and Citizenship:** Science makes a significant contribution to the teaching of PSHE. The subject matter lends itself well to raising matters of citizenship and social welfare. Science promotes the concept of positive citizenship; for example, children study the way people recycle material and how environments are changed for better or worse. Science gives children the opportunity to debate and discuss their everyday life and subjects that affect them or that are important to them.
- 4.5 Spiritual, Moral, Social and Cultural development:** It is essential that children are able to examine some of the fundamental questions in life; for example, the evolution of living things, how the world was created and how the world works. A sense of awe and wonder is developed through discovery of the processes that affect the nature of our world. Science

raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss choices we make and the effect they have on ourselves and the world around us. Science gives the opportunity to reflect on the way humans and animals care for the planet, and how science can contribute to the way we manage Earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

5. Assessment for Learning

Assessment for learning is continuous throughout the planning, teaching and learning cycle.

Assessment in sciences focuses on children's knowledge of:

- Sc1 – Scientific enquiry
- Sc2 – Life processes and living things
- Sc3 – Materials and their properties
- Sc4 – Physical processes
- Breadth of study

5.1 Class teachers will gather evidence of progress as part of day to day learning, assessment tasks and assessing progress at key points of learning.

5.2 Teachers will assess children's work in science by making informal judgments during lessons and marking after completion of work. Assessment will be used to plan for future learning.

5.3 Written or verbal feedback will be given after each piece of work to help guide the individual's progress. (See Marking Policy)

5.4 Assessment will take place through;

- Observing children's work, individually, in pairs or as part of a group.
- Questioning, talking and listening to children.
- Consideration of work, materials chosen and investigations produced by children.
- Assessment tests.
- Encouragement, engagement and self assessment to promote development of learning.

6. Resources

6.1 We have sufficient resources for all science teaching units in school. We keep these in a science resource area that is easily accessible to all staff. The library contains a good supply of science topic books available to staff and children. Also, computer software is available to teachers and to support children's individual research.

6.2 Class teachers are responsible for informing the Science Leader of resources which are required in order to deliver their planned curriculum.

7. Health and Safety

At Thomas Gray, the safe use of equipment and materials is promoted at all times. Safety issues are identified within medium-term and lesson plans. When activities are identified as unusual and beyond the scope of normal safety practice, teachers will complete a risk assessment.

8. The Role of Subject Leader

- To undertake monitoring of standards in science.
- Provide leadership and management of their subject to secure high quality teaching and learning.
- Play a key role in motivating, supporting and modelling good practice for all staff.
- Take a lead in policy development and review.
- To attend subject specific courses.
- To report to Head teacher on science related issues.
- To plan and organise the allocated purchase of resources in accordance with available budget.

Signed: _____

Date: _____

Chair of Governors

Signed: _____

Date: _____

Headteacher

Date to be reviewed: _____