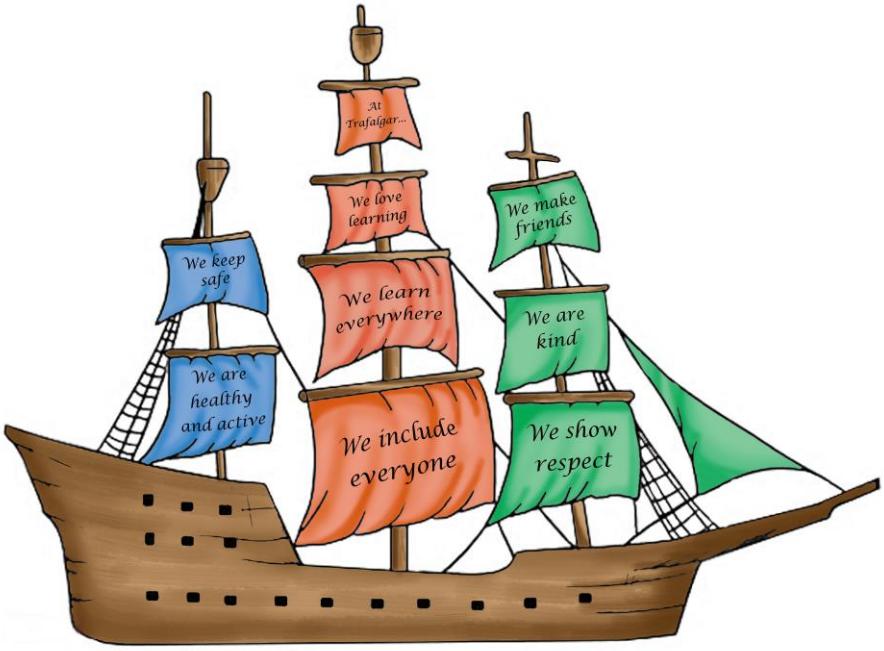
Trafalgar Community Infant School



Policy Document

SCIENCE POLICY

REVIEWED: Spring 2025
REVIEW: Spring 2028

Trafalgar is a rights respecting school. We refer to the UN Convention on the Rights of the Children (UNCRC) throughout this policy. Article 29: 'Education must develop every child's personality, talents and abilities to the full. It must encourage the child's respect for human rights, as well as respect for their parents, their own and other cultures, and the environment.'

This policy reflects the school values and philosophy in relation to the teaching and learning of **Science**. It sets a framework within which staff can operate and gives guidance on planning, teaching and assessment.

This policy should be read in conjunction with the **Health and Safety** policy, the **Relationship Education** policy, the **Assessment** policy, **School Grounds documentation** and **Healthy Schools** documentation. These can be found on the curriculum server: Staff/Policies.

Purpose of Science

Statutory Framework EYFS 2021: *Understanding the world involves guiding children to make sense of their physical world and their community.*

Science programme of study, DfE 2015
Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

Aims

- For EYFS children to develop their scientific knowledge and conceptual understanding- there is one area identified by their Curriculum: **The Natural World**
- For KS1 children to develop their scientific knowledge and conceptual understanding- three main areas are identified by the National Curriculum: **Plants, Animals including humans and Everyday materials.**
- To offer hands- on experiences that will utilise children's natural curiosity, inventiveness, abilities and interests. These experiences will give children the opportunities to:
    - explore at first hand the properties of living and non-living materials.
    - share ideas and information.
    - ask questions and make predictions about what might happen.
    - make and record observations and measurements.
    - communicate their observations about what has happened using scientific vocabulary, including the use of drawings, tables and charts.
- For children to relate their knowledge and apply their skills to everyday experiences; including learning about real- life scientists so children have a range of positive role models to aspire to giving a purpose to learning science.
- To encourage children to have respect for living things and to be aware of their actions and those of others in the environment.
- To promote children's awareness of their personal health and well-being.
- To recognise hazards and to follow instructions to ensure safe working for themselves and others.
- To use science for developing other areas of the curriculum by, for example, providing opportunities for the application of mathematical skills, providing experiences for oral and written work to extend language development, the provision of living things for close observational drawing in art or the application of the knowledge of materials in technology.
- For children to read and spell scientific vocabulary at a level consistent with their increasing word reading and spelling knowledge at key stage 1.
- For children to develop their investigative skills by 'working scientifically':
    - observing over time;
    - pattern seeking;

- identifying, classifying and grouping;
- comparative and fair testing (controlled investigations);
- researching using secondary sources.
- seeking answers to questions through collecting, analysing and presenting data.
- draw conclusions and try to use their knowledge and understanding of science to provide explanations for their conclusions.
- use secondary sources of information as well as first hand observations.
- use computing skills to collect, store, retrieve and present scientific information.

Objectives

In order to meet the above aims teachers should:

- Create a safe yet stimulating environment which will encourage and allow children to develop their knowledge and understanding of scientific concepts and investigative skills.
- Provide clear planning which shows a range of teaching strategies and learning opportunities designed to provide a range of practical opportunities for the development of knowledge and skills; it should also detail adult roles, key vocabulary and questions, SEN and EAL support,
- Follow the agreed monitoring, assessment and record keeping guidelines so as to maximise children's progress.
- Ensure their own knowledge is secure in order to deal effectively with misconceptions.
- Demonstrate a positive, enthusiastic approach towards science.

The Science Curriculum

Early Years Foundation Stage- Understanding the World.

Understanding of the World is about how children get to know about other people, the place where they live and about all aspects of the environment.
It is subdivided into:

- Past and Present
- People, Culture and Communities
- The Natural World

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First hand experiences are provided through the child's self-initiated play, structured play and specific teaching activities. For example, Reception children experience the concept of volume by pouring water into various sized bottles and containers. Through a variety of practical experiences, basic knowledge and skills are developed.
Young children use all their senses in hands- on exploration of natural materials and the natural world around them; exploring collections of materials with similar and/ or different properties and exploring what they see, hear and feel whilst outdoors; looking closely at similarities, differences, patterns and change. They talk about what they see using a wide vocabulary. They explore how things work. They learn to care for all living things and they begin to make sense of their own life story and family history through learning about some similarities and differences between different religious and cultural communities in this country and life in other countries.

Key Stage 1

The National Curriculum divides science into 4 areas of learning.
These are as follows:
1: Working scientifically
2: Plants

3: Animals including humans
4: Everyday materials

The scientific enquiry skills are taught through contexts taken from areas 2, 3 and 4. At Trafalgar these contexts may be incorporated into themes or taught as discreet science topics. These are planned to give a broad and balanced coverage of the three areas across each year group. Where appropriate some areas are revisited in different topics to provide reinforcement and extension of the concepts and skills involved.

'Working scientifically' is described separately in the programme of study but is always taught through and clearly related to the teaching of the science content in the programme of study.
The skills are developed through investigative opportunities to explore the knowledge and understanding of science taught in each topic. Cross- curricular links are made where possible, e.g. maths skill of measuring in a science lesson.

Time Allocation
Subject teaching is planned so that each year group allocates a percentage of teaching time per week for science. In KS1, it two hours per week.
Each year group has the freedom to allocate blocks of time for science within a term if this suits the method of the delivery of the subject best.

Planning and Differentiation

Planning
Planning is addressed at 3 levels:

- **Long Term** – this is taken from EXPLORIFY and amended to suit Trafalgar's needs. The curriculum map and Progression of Skills is clearly laid out to ensure continuity and progression across the school.
- **Medium Term** – Detailed half term plans provide a week- by- week breakdown to include lesson objectives and activities, adult role, key vocabulary and questions, SEN and EAL support, resources used.
- **Short Term** – The weekly lesson is discussed during year group planning each week.

Differentiation
Differentiation takes place in a variety of ways:

- By questioning at different levels
- By recording in a manner appropriate to the abilities of the children
- By scaffolded support (adult/peer/resourcing- visual aids & Topic word mats/ pre- teaching of vocabulary)
- By outcome

Every child has equal access to the curriculum and account is taken in short term planning for specific groupings and any need for scaffolded support and adaptations.

Teaching Strategies
A range of teaching strategies are employed by the teacher so that every child has the chance to maximise their learning. Teaching strategies are selected with the ability, interests and learning styles of the children in mind with an emphasis on learning through first- hand experience and developing investigative scientific skills.
Teaching strategies include:

- Demonstration
- Exploration
- Child- led investigation
- Research
- Building upon prior learning experiences through recall activities/ inputs and investigations.

Responsibilities of the Year Group Leads:
Monitoring of:

- Moderation within PPA.
- planning, teacher- subject knowledge, lesson content, resources used and training needs for their team.
- consistency between classes, progression across the year group, quality of presentation and coverage of the curriculum.
- Whole staff moderation of examples of work provides opportunities to ensure consistency when moderating work. Progress is tracked on Target Tracker termly.

Assessment and Record Keeping
See the school's Teaching and Learning Policy.
Floor Books are used in Science where appropriate to record practical work and pupil voice to support children's understanding by exemplifying children's learning of concepts.

Continuity and Progression
Planning and monitoring of teaching and learning and regular, ongoing assessment all combine to ensure the continuity and progression within the teaching and learning of Science at Trafalgar.

Resources
Equipment will be checked and any risk assessments or safety issues will be considered. Topic related and general Science resources are kept centrally in the Resources room/ Boiler House. These are in labelled boxes and are renewed and added to as necessary. A range of DVDs are also available. Each year group has their own set of science resources to facilitate scientific enquiry outside of science lessons.

The school grounds, including the pond areas, are used to support a number of topics. 'Silly Science Workshop' and 'Jungle Jonathan' have been previous examples of speakers invited to school. Interactive displays are used in classrooms to encourage exploration in Science.

Health and Safety
All practices in the teaching of Science are subject to the procedures and constraints laid down in our Health and Safety policy and our Relationship Education Policy.

The Role of the Science Lead

- Monitor and evaluate the intended development or implementation of all aspects of the current School development Plan relating to this curriculum area.
- Ensure Target Tracker is used termly to track progress in Science.
- Monitor, support and encourage colleagues in all aspects of teaching and learning relating to this curriculum area.
- Whole staff moderation of examples of work to ensure consistency and support understanding between year groups.
- Monitor and evaluate the policy statement and scheme of work relating to this curriculum area
  a) By discussion with colleagues, and
  b) Through reflecting on the medium- term planning from all year groups.
- Contribute as required to school based in-service training relating to this curriculum area.
- Initiate an annual audit of all resources relating to this area of the curriculum responsibility and prepare a schedule of resource requirements.
- Report as required to the Governing Body or to a meeting of parents on topics relating to this curriculum area.
- Advise and inform the Headteacher of any relevant matters relating to this curriculum area.

Review:

As part of the School Improvement Plan evaluations are written which outline achievements for the year and identify action to be taken. The new SIP will then be written which gives the aims for the next academic year.

Date of policy Spring 2025 Date of review Spring 2028