

Gordon Primary School

Science Policy

Revised Spring Term 2023

Signed _____ Chair of Governors

To be reviewed Spring Term 2024

Gordon Primary School

Science Policy

Introduction

This policy outlines the teaching, organisation and management of Science teaching and learning at Gordon Primary School. Science involves the systematic investigation of the physical, chemical and biological aspects of the world, and relies on first hand practical experience and interpretation of other sources of information, in order to understand, solve and accurately record problems.

The policy has been drawn up by the Science Subject Leaders, in consultation with members of the school's teaching staff, and has the full agreement of the Governing Body. The implementation of this policy is the responsibility of all teaching staff, under the direction of their year group leaders. The responsibility for monitoring and reviewing Science teaching and learning rests with the SLT and the Science Subject Leaders.

Rationale

Today we live in an increasingly scientific and technological society therefore children need to acquire the appropriate knowledge, skills and attitudes to prepare them for life in the 21st century.

At Gordon Primary School we believe that the teaching of Science develops in children an interest and curiosity about the world in which they live, and fosters in them a respect for the environment. Both the scientific process and the problem-solving activities will be used to deepen pupils' understanding of the concepts involved.

All pupils are entitled to access the Science curriculum at a level appropriate to their needs arising from race, gender, ability or disability and all Science lesson plans will therefore be differentiated to meet the needs of the children in each class. School visits will be planned for throughout the children's time at school and, where necessary, will be adapted to meet the individual requirements of identified pupils.

INTENT

Through our teaching of Science, we aim to:

- Develop pupil's enjoyment and interest in Science and to build on their enthusiasm and natural sense of wonder about the world.
- Develop pupil's understanding of key scientific concepts and scientific skills.
- Enable pupils to effectively communicate scientific ideas by using an accurate scientific vocabulary.
- Develop, through practical work, the skills of: investigation, observation, prediction, pattern seeking, comparing, classifying, interpretation, communication, questioning and hypothesizing.
- Increase the use of precise measurement and data logging.
- Encourage and enable pupils to offer their own suggestions, and to be creative in their approach to science, and to gain enjoyment from their scientific work.
- Develop positive attitudes which encourage collaborative learning, and to encourage where possible, ways for children to explore science in forms that are relevant and meaningful to them.
- Encourage children to collect relevant evidence, to persevere in and to question outcome of their enquiries.
- Encourage children to treat the living and non-living environment with respect and sensitivity.
- Stress the need for personal and group safety by the correct usage and storage of resources.

- Enable children to appreciate that we do not always know the answers and results when carrying out scientific enquiry.
- Ask questions and be curious about the world around them
- Use a range of ICT equipment to enhance scientific learning. E.g. cameras to record investigations, data loggers for accurate measurements of temperature and digital microscopes for close observations. Programmes such as Excel are used to create graphs and charts to record results.
- Consider the ranges of scientific phenomena within pupil experience and relate this to their spiritual sense of awe and wonder.
- Consider the positive and negative effects of scientific and technological developments.
- Consider the wider social responsibility of scientists and science.
- Consider the role of science in understanding cultural experience and celebrations e.g. Diwali – Festival of Light.

IMPLEMENTATION

Planning

Planning should be in three phases:

- **Long-term planning** - the Science Curriculum Overview, which sets out the science topics to be studied in each term, is in place to ensure full coverage of the curriculum.
- **Medium-term planning** - Medium term planning, that is developed during the Year Group meetings, identifies: learning objectives, science activities, assessment opportunities, the vocabulary to be taught and used, safety issues, how information and communications technology and resources should be used. This should be shown on the '**mind maps**' that all members of staff complete at the start of each unit.
- **Individual lesson planning** - the class teacher is responsible for taking and adapting the medium-term plans for their class. Lesson plans list: the specific learning objectives and success criteria, an outline of how the objectives will be taught, differentiation and should show how EAL, SEN and G&T children are to be supported, AFL, vocabulary and plenary.

Approaches to Teaching and Learning Scientific Enquiry

- Science is taught with an emphasis on the pupils engaging in practical enquiry to support/develop their understanding of scientific concepts and skills.
- Teachers are encouraged to use a range of strategies including: exploration, pattern seeking, identifying and grouping, observing over time, fair testing.
- Teachers try to ensure that some of the children's ideas are used as a basis for enquiry.
- Classrooms have 'Working Walls' to display relevant scientific vocabulary and ideas relating to the unit of work and to work scientifically ensuring that science reflects its place as a core subject.

IMPACT

As with all our subject teaching, we do not teach Science in isolation to other curriculum areas; where possible, we relate the work undertaken to real life situations and we also aim to:

- Improve pupils' skills in English, Maths, History, Geography and Computing
- Develop pupils' thinking skills
- Promote pupils' awareness and understanding of gender, cultural, spiritual and moral issues
- Develop pupils as active and responsible citizens within their own and wider communities

Assessment

- With regard to science assessment – a summative assessment of the pupils' understanding and progress each term, working scientifically will be made by class teachers, at the end of each unit of work.
- Formative assessment is recorded using pupils' attainment profiles (target tracker).
- These assessments will be gathered by the Science Subject Leaders and used to track children's progress.
- Marking will be used to acknowledge achievements and to show the pupils what they need to do in order to improve.
- Scientific spellings are modelled and corrected.
- A written report in respect of pupil's progress in Science is provided annually to parents.

The Science Subject Leaders will:

- In collaboration with the SLT, undertake monitoring of standards in Science and use this to inform the science action plan. This includes: work scrutiny, planning scrutiny, pupil conferencing and lesson observations.
- 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, including the organisation and presentation of School Inset.
- Liaise with outside agencies and attend subject specific courses.
- Take a lead in policy development and review.
- Report to the Head teacher and Governing Body on Science related issues.
- Ensure that the whole school environment is used to maximum potential in order to support delivery of the science curriculum.
- Ensure that science work is displayed around the school.
- Ensure that school visits and visitors are planned regularly to enhance learning and help the pupils to relate scientific enquiry to the real world.
- Plan and organise the purchase and allocation of resources in accordance with the available budget.

Monitoring and Evaluation

Along with the SLT, the Science Subject Leader will:

- Support teachers via co-planning, team teaching, observing / giving feedback
- Monitor teachers' medium-term planning
- Will ensure that the curriculum planning provides appropriate challenge for all pupils through the pitch and expectations of the teaching staff
- Review resource provision
- Work co-operatively with the SENCo to ensure that the Science curriculum is available to all pupils
- Discuss regularly with the SLT and the Science Subject Governor, the progress made within the Science curriculum

Resources

- Class teachers are responsible for informing the Science Subject Leaders of resources that are required in order to deliver their planned curriculum in advance of teacher so that resources can be ordered/sourced if required.

- Science resources are stored centrally, and their effectiveness depends upon class-based staff returning them appropriately after use to the Resources manager, and where necessary reporting lost or damaged resources to the Science Subject Leaders.
- Science resources are to be returned with all the contents. If items have been broken/damaged the teacher needs to inform the Science leads via email so that replacements can be sourced.
- Information books on science topics are available from the LBR School's Library Service.

Health and Safety

- Safe practice must be promoted at all times.
- The safe use of equipment and materials will be promoted at all times.
- Teachers and children will take necessary safety precautions when conducting scientific experiments

Teachers must also take into account, the school's Health and Safety policy:

- Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies.
- Safety issues must be identified in medium-term planning
- Where necessary risk assessments must be completed in weekly Year Group Planning Meetings, when activities are identified that are unusual and beyond the scope of normal safety practice.

Equal Opportunities and Special Needs (including Gifted and Talented)

All pupils should be given an equal access to the Science curriculum. This can be achieved through classroom organisation and careful planning that enables the active participation of all pupils. In all classes there are children of differing ability. Some pupils may need provision to be made for additional support or extension tasks. Equal learning opportunities are provided for all children by matching the challenge of the task to the ability of the child. This is done by:

- Setting common tasks that are open-ended and can have a variety of results (targeting Gifted and Talented children).
- Setting tasks of increasing difficulty where some children are challenged with additional tasks (targeting Gifted and Talented children).
- Grouping children by ability and setting different tasks for each group.
- Providing a range of challenges through the provision of different resources.
- Arranging pupils into mixed ability groups with more able pupils supporting SEN and EAL pupils to access the Science tasks.
- Using additional adults to support the work of individual children or small groups, especially SEN and EAL pupils.
- Modifying or providing additional resources that can be used to support a child's access to the curriculum.
- Adult/s to support SEN children with fine motor skill needs.
- Differentiated activities and tasks for SEN children.

The UNICEF Rights Respecting School Framework

We are proud to be working with the UNICEF Rights Respecting School framework. Ensuring that children understand their rights as per the United Nations Convention of the Rights of the Child is central to our school's ethos. Where learning opportunities and links exist, relevant articles from the UNICEF Rights of the Child are made explicit through the teaching of the curriculum.

Governor Involvement: The Science link governor is David Low.

Policy Reviewed: Autumn Term 2023

Date of next Review: Summer Term 2024

NB: Whilst this policy is kept under regular review, statutory regulation will always take precedence.

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