

Greenlands Community Primary School



Science Policy
2020

Statement of intent

Science provides the foundation for understanding the world around us. It can not only teach pupils about the world they live in, but also how to study it and make sense of various phenomena. As such, it is a fundamental aspect of all children's learning.

Through adherence to this policy, Greenlands Community Primary School will not only ensure statutory compliance with the national curriculum, but also that all pupils have a solid grounding in science and a positive attitude towards scientific knowledge and experimental processes.

The aims of this policy include:

Fostering our school values: Respect, Compassion, Trust, Perseverance, Resilience and Ambition.

Developing pupils' interest in, and enjoyment of, science. By building on children's curiosity, the science curriculum will help to instil a positive attitude towards science in pupils.

Delivering all the requirements of the national curriculum in relation to science and covering major scientific concepts.

Ensuring science lessons are purposeful, accurate and imaginative.

Ensuring pupils have sufficient scientific knowledge to understand both the uses and implications of science, today and in the future. This will also give pupils an appreciation of the changing nature of scientific knowledge.

The development of pupils' ability to pose questions, investigate these using correct techniques, accurately record their findings using appropriate scientific language and analyse their results.

Helping pupils develop the skills of prediction, hypothesising, experimentation, investigation, observation, measurement, interpretation and communication.

Making pupils aware of and alert to links between science and other school subjects, as well as their lives more generally.

Signed by

Headteacher

Date:

Chair of Governors

Date

Intent

The intention is for the Science Subject Leader to

Promote the school values - Respect, Compassion, Trust, Perseverance, Resilience and Ambition.

Prepare policy documents, curriculum plans and schemes of work.

Keep up to date with developments and share them with staff.

Monitor the learning and teaching of science.

Liaise with teachers, develop their expertise and provide support and training for staff.

Audit, resource and organise science resources.

Ensure common standards are met for recording and assessment.

Collate assessment data and set new priorities for development of science at Greenlands Community Primary School.

The intention is for the teacher to

Promote the school values - Respect, Compassion, Trust, Perseverance, Resilience and Ambition.

Adhere to the Greenlands Community Primary School's Science Policy

Ensure that lessons are taught in line with the Health and Safety Policy

Liaise with the science subject leader about key topics, resources and supporting individual pupils.

Ensure that all of the relevant statutory content is covered within the school year.

Deliver lessons that are pitched at the appropriate level and are stimulating, interesting and relevant to the children.

Monitor the progress of pupils in their class and report this on an annual basis.

Undertake any training that is necessary.

Intent

The Intention is for science content to be based on the National Curriculum

The National Curriculum

The national curriculum is followed and provides a full breakdown of the statutory content to be taught within each unit.

The children develop their scientific knowledge and conceptual understanding through the programmes of study (See curriculum map)

Working scientifically will develop their understanding of the nature, processes and methods of science

Working scientifically

Key Stage One

In Years 1 and 2 pupils should be taught to:

Ask simple questions and recognise that they can be answered in different ways.

Observe closely, using simple equipment.

Perform simple tests.

Identify and classify

Use their observations and ideas to suggest answers to questions.

Gather and record data to help in answering questions.

Key Stage Two

In Years 3 and 4 pupils should be taught to:

Ask relevant questions and use different types of scientific enquiries to answer these questions

Set up simple practical enquiries, comparative and fair tests.

Make systematic and careful observations and, where appropriate, take accurate measurements using standard units and a range of equipment, including thermometers and data loggers.

Gather, record, present and classify data in a variety of ways to help answer questions.

Record findings using simple scientific language, drawings, labelled diagrams, keys, bar charts and tables.

Report on findings from enquiries, including oral and written explanations, displays or presentations of results and conclusions.

Use results to draw simple conclusions, make predictions for new values, suggest improvements and raise further questions.

Identify differences, similarities or changes related to simple scientific ideas and processes.

Use straightforward scientific evidence to answer questions or to support their findings.

In Years 5 and 6 pupils will be taught to:

Plan different types of scientific enquiries to answer questions, including recognising and controlling variables where necessary.

Take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings when appropriate.

Record data and results of increasing complexity using scientific diagrams and labels, classification keys, tables, scatter graphs, bar and line graphs.

Use test results to make predictions to set up further comparative and fair tests.

Report and present findings from enquiries, including conclusions, causal relationships and explanations of and a degree of trust in results, in oral and written forms such as displays and other presentations.

Identify scientific evidence that has been used to support or refute ideas or arguments.

Foundation Stage

The Reception class base their planning on the Statutory Framework for the Early Years Foundation Stage and work towards the Early Learning Goals. Through 'The World' aspect of 'Understanding the World', the children are encouraged to explore, investigate and solve problems to develop their knowledge and understanding of the world around them.

Implementation

When planning, teaching and resourcing our science lessons it is our aim to implement and fulfil our Intent Statement. It is our intention for the children to 'Learn happily and develop a love of learning that will last into adult hood and beyond'.

Planning

Throughout Greenlands Community School, science is taught as a discrete lesson and as part of cross-curricular themes when appropriate.

Teachers will use the key learning content in the National Curriculum for Science as a starting point for their planning. The science curriculum map identifies what and when topics are taught.

When planning a lesson the teacher will consider and plan for the different learning styles of the children.

Medium term plans include:

A content and working scientifically objective

Vocabulary and skills to be taught

Main learning activities with opportunities for assessment and differentiation

Medium-term plans will be shared with the subject leader to ensure there is progression between years. These are stored electronically.

Teaching and learning

Pupils will be taught to describe associated processes and key characteristics in common language, as well as understand and use technical terminology and specialist vocabulary.

Lessons will allow for a wide range of scientific enquiry, including the following:

Questioning, predicting and interpreting

Pattern seeking

Practical experiences

Carrying out investigations

Carrying out time-controlled observations

Classifying and grouping

Undertaking comparative and fair testing

Researching using secondary sources

Opportunities for outdoor learning will be provided wherever possible.

Enhancement and enrichment

There are opportunities for children within each key stage to go on an educational visit which has a science focus

The local area and outdoor learning takes place within each key stage.

Cross-curricular links

Wherever possible, the science curriculum will provide opportunities to establish links with other curriculum areas.

English

Pupils are encouraged to use their speaking and listening skills to describe what is happening. Pupils' writing skills are developed through recording their planning, what they observe and what they found out. Science based texts are sometimes used in English lessons and in guided reading sessions.

Maths

Science will involve a degree of numeracy at all levels. Pupils use their knowledge and understanding of measurement and data handling. Where appropriate, pupils record their findings using charts, tables and graphs.

Computing

Pupils will use computing to locate and research information. Computing will be used to record findings, using text, data and tables. Pupils are encouraged to use calculators and other electronical devices, gaining confidence throughout their school experience.

PSHE

Health education is taught as part of the science unit about ourselves, which covers: Health and growing, teeth and eating, moving and growing, keeping healthy and life cycles

History

Scientific discoveries and the contribution of individuals to science will be studied.

Spiritual development

Pupils' development will be focussed on the vastness of science and the natural world, encouraging a sense of awe. Pupils are encouraged to think about the effect of scientific discoveries on the modern world. Current scientific developments and issues will be discussed in the classroom, where appropriate.

Science and inclusion

All pupils will have equal access to the entire science curriculum, including practical experiments.

Gender, learning ability, physical ability, ethnicity, linguistic ability and/or cultural circumstances will not impede pupils from accessing all science lessons.

Where it is inappropriate for a pupil to participate in a lesson because of reasons related to any of the factors outlined above, the lessons will be adapted to meet the pupil's needs and alternative arrangements involving extra support will be provided where necessary.

All efforts will be made to ensure that cultural and gender differences will be positively reflected in all lessons and teaching materials used.

Greenlands Community Primary School aims to provide more academically able pupils with the opportunity to extend their scientific thinking through extension activities such as problem solving, investigative work and research of a scientific nature.

Assessment and reporting

Pupil progress and attainment is assessed using the KLIPS assessment tool. In some Key Stage Two classes Rising Stars and CGP is also used.

Pupils are be assessed continuously throughout the year, as well as undertaking a summative assessment at the end of each academic year.

Throughout the year, teachers will plan ongoing creative assessment opportunities in order to gauge whether pupils have achieved the key learning objectives.

Assessment in science is based upon scientific knowledge and understanding, rather than achievement in English or maths.

Assessment will be undertaken in various forms, including the following:

Talking to pupils and asking questions

Discussing pupils' work with them

Marking work against the learning objective

Observing practical tasks and activities

Pupils' self-evaluation of their work

Classroom tests and formal exams

Formative assessment, which is carried out informally throughout the year, enables teachers to identify pupils' understanding of subjects and informs their immediate lesson planning.

In terms of summative assessments, the results of end of year assessments will be passed to relevant members of staff, such as the pupil's future teacher as well as the curriculum leader

Parents will be provided with a written report about their child's progress during the summer term every year. These will include information on the pupil's attitude towards science, progress in understanding scientific methods, ability to investigate, and the knowledge levels they have achieved.

Verbal reports will be provided at parent-teacher interviews

Pupils with special educational needs and disabilities (SEND) will be monitored by the Special Educational Needs Coordinator.

Equipment and resources

There is a central resource for science. Resources specific to year groups are also stored in the relevant classrooms.

For safety reasons equipment is checked prior to use. Any equipment or resources that are cause for concern should be disposed of.

The subject leader will carry out an annual audit of the science resources, reordering any consumables when necessary.

The subject leader will discuss with the class teachers the need for new resources which will be bought from the amount allocated in the annual budget.

Health and safety

A risk assessment will be carried out by teachers before conducting an experiment or undertaking practical activities.

All pupils will be shown how to correctly use equipment and will be monitored by staff members whilst using equipment.

All pupils will be made aware of how they are expected to behave, ensuring that they show respect to other people and the environment.

Pupils are made aware of the personal safety protocols and equipment needed when using different equipment or carrying out different tasks.

Any 'new' experiments or activities which a teacher has not used in the classroom before will be trialled prior to being performed with pupils.

At the beginning of any experiment, the teacher will outline the purpose of the experiment to the class, and all hazards and safety precautions will be thoroughly outlined.

Monitoring and review

This policy will be reviewed on an annual basis by the subject leader.

The subject leader will monitor teaching and learning in science at Greenlands Community Primary School.

Any changes made to this policy will be communicated to all teaching staff.

There is a named member of the school's governing body who is briefed to oversee the teaching of science.

An annual report will be written by the curriculum leader that will be shared with the head teacher and the leadership team as well as the nominated governor.

Impact

The high quality teaching at Greenlands Community Primary School provides the children with the knowledge and skills to make sense of and understand the world in which they live.

Children enjoy science because of the way the subject is taught in an engaging and practical way.

Through workshops, trips and engagement with the local area the children make connections between what they have learned and the wider world.

The teaching of science supports and promotes the development of the school values of respect, compassion, trust, perseverance, resilience and ambition.

The impact of good teaching has a positive impact on standards in Science. The impact is measured by the science subject leader and the leadership team.

How the impact is measured

The science subject leader will monitor the impact the science teaching is having on the children's learning through the scrutiny of books, lesson observations, walk through and discussions with children and staff.

The science subject leader will analysis standards and compare them to national expectations as well as year on year progress.