

Graiseley Primary School



Science Policy September 2023

Science Vision:

To encourage pupils creative and inquisitive minds through exploring and discovering the world around them. This is so that they have a deeper understanding of the world we live in.

Intent:

At Graiseley Primary School we have adopted Plymouth Science scheme of work from EYFS to Year 6. It is a robust science curriculum that engages all learners through practical, evidence-based pedagogy. The scheme of work has been planned in line with the National Curriculum, ensuring time is appropriately attributed to each strand. Meaningful connections are made between topics so that they build into a significant body of knowledge across a wide range of aspects. The intent is that each child at Graiseley Primary School will become competent scientific thinkers and investigators who will encounter awe and wonder through first-hand scientific investigative experiences and approaches, which activate learning for all children. Plymouth Science promotes interactive lessons where children are encouraged to investigate problems, learn how Science works and discover why Science matters in the world. Being able to question and make sense of things are two of the key skills children gain from science lessons which they can hold onto for life.

Implementation:

We are very proud of our Science curriculum using Plymouth Science at Graiseley Primary School. In EYFS, Science is predominantly within their lifetime to develop a growing understanding of sense of self. Our curriculum has impact at its very heart. Every topic includes a strong focus on the skills of Scientific enquiry through an investigative and exploratory approach that makes learning memorable. Children will take away a deep understanding of both Science content and scientific method.

Science knowledge is important for children to be able to explain what they have learnt from the Scientific process. This process includes questioning, experimenting, collecting data, looking for patterns in results and drawing conclusions.

The content of the curriculum is not reduced for children with SEND, rather the way they access the curriculum and produce work related to it, is amended to suit their needs.

Impact:

The impact of this curriculum design will lead to outstanding progress over time, from EYFS to the end of key stage 2, relative to a child's individual starting point and their progression of skills. Children will:

Be engaged in their learning and share a passion for science.

Be confident in the use of key vocabulary in a range of contexts and are ambitious in achieving age - related expectations.

Know more and remember more, demonstrating good progress from their starting points.

Have the ability to explain their own Scientific thinking and understand that science is constantly developing and improving thus impacting our daily lives.

Feel they are all scientists and capable of achieving high aspirations in the field of science. They understand that science has changes our lives and is vital to the world's prosperity.

Key Scientific concepts explored and mastered overtime at Graiseley Primary:

- Research using secondary sources.
- Comparative and fair testing.
- Observing over time.
- Pattern seeking.
- Identifying, classifying and grouping.
- Seeking answers to questions using a scientific approach whilst working scientifically.

Planning and Resources:

Long term planning: An overview of coverage is provided to each teacher.

MTP: Each year group will be given MTPs from Plymouth Science scheme of work. They will be able to adapt slides, resources to suit their cohort for that academic year.

Weekly slides: This identifies the learning objective and outcome for each lesson. It also includes the science activities, assessment opportunities, the vocabulary to be taught and used, any safety issues, investigation focus, differentiation required and challenges for each ability group. The weekly planning for science is adapted by the class teacher. It is placed on the school OneDrive for each year group. Planning expectations are monitored by the science leader who will give feedback to class teacher termly.

Further evidence of 'good science' taking place in classrooms includes:

- An active learning environment, showcasing the relevant Working Scientifically posters for age phase on the working walls during science topic coverage.
- Children being encouraged to ask and answer questions and discuss their work and ideas.
- Children devising and conducting their own investigations within the context of the relevant curriculum content, as well as being given opportunities to develop their working scientifically skills.
- Children recording their findings in a variety of ways.
- Children showing enjoyment in the activities they are undertaking.

Science resources will be used to support the teaching of all units and topics taught, from EYFS to Y6 in relation to Plymouth Science scheme of work. Some are kept in a central store, where they will be labelled and easily accessible to all staff. Some will be kept within the relevant classrooms. EYFS have a range of resources kept in classes, for simple access for children during exploration. The library contains a good supply of science topic books to support children's individual research.

Assessment:

Children's progress is continually monitored throughout their time at Graiseley Primary School and is used to inform future teaching and learning. 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 as set out in the National Curriculum. These are set out as statutory requirements. Children receive effective feedback through teacher assessment, both orally and through written feedback in line with the success criteria. Children are guided towards achievement of the main objective through the use of process based 'success criteria', provided by and explained by the teacher at the start of each lesson. Children will have these to refer to in the lesson, where they will be evident in their books.

- Assessment for learning is continuous throughout the planning, teaching and learning cycle. However children are more formally assessed half termly in KS1 and KS2 using a variety of methods:
- Observing children at work, individually, in pairs, in a group, and in classes.
- Questioning, talking and listening to children
- Considering work/materials / investigations produced by children together with discussion about this with them.
- End of unit Plymouth Science Hub assessment

Marking:

On completion of a piece of work, the teacher marks the work and comments as necessary in accordance with the school marking policy. There should also be think pink and next steps present to consolidate and extend learning. If verbal feedback has been provided to the child during the lesson, this should be identified within the book with a 'v'.

If a practical or speaking and listening activity is undertaken a note is to be made of this in the children's books and photographic evidence may be used to reflect the learning in that lesson.

The learning environment:

Classrooms should have displays of the current science topic. Its profile should reflect its place as a core subject. All classrooms should display prominently the relevant scientific vocabulary being introduced in current units of work. The teacher and pupils should refer to the display whilst teaching and learning.

A whole-school science display will be based within the corridor showing progression of the subject from EYFS to Year 6.

Vocabulary:

The national curriculum for science reflects the importance of spoken language in children's development across the whole curriculum – cognitively, socially and linguistically. Using Plymouth Science, lessons will provide a quality and variety of subject specific language to enable the development of children's confident and accurate use of scientific vocabulary and their ability to articulate scientific concepts clearly and precisely. They are encouraged and assisted in making their thinking clear, both to themselves and others.

Equal opportunities:

The content of the curriculum is not reduced for children with SEND, rather the manner in which they access the curriculum and produce work related to it, is amended to suit their needs. Any

adaptations concentrate on how the content is taught, rather than changing the content itself. High expectations exist for all pupils at their own level of understanding.

Organisation:

Science will be taught in planned and arranged into topic blocks by the subject leader. are 5 topics (4 topics for Year 2) that will be covered systematically throughout the year. Science week will be based on 6 lessons following the Plymouth Science LTP within Spring 2.

	Autumn One	Autumn Two	Spring One	Spring Two	Summer One	Summer Two
EYFS	Colour Ourselves	Celebrations Fairy Tales	People who help us	Science Week	Animals	More units will be added periodically for EYFS to look at.
Year One	Seasonal Changes	Animals including humans	Animals including humans (Ext unit)	Materials Science Week	Materials (Ex Unit)	Plants
Year Two	Living things and habitats	Materials	Animals including humans.	Animals including humans (Ext Unit) Science Week	Plants	Plants (Ext Unit)
Year Three	Rocks	Light	Forces and magnets	Science Week	Animals including humans	Plants
Year Four	Animals including humans.	Sound	States of matter	Science Week	Electricity	Living things
Year Five	Forces	Properties of materials	Space	Science Week	Living things and habitats	Animals including humans
Year Six	Animals including humans	Evolution and inheritance	Electricity	Science Week	Light	Living things and habitats

Health and safety:

Staff should be aware of any potential risks involved with the activities and equipment that are used in science lessons. Staff should make pupils aware of these risks and make suitable decisions for the organisation of pupils and equipment.

When working with tools, equipment and materials in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- about risk and risk control
- to recognise hazards, assess consequent risks and take steps to control the risks to themselves and others
- to use information to assess the immediate and cumulative risks
- to manage their environment to ensure the health and safety of themselves and others
- to explain the steps they take to control risks”

The National Curriculum for England (Science)

Monitoring and review:

It is the responsibility of the subject leader to monitor the standards of children’s work. The subject leader is also responsible for supporting colleagues in their teaching, for being informed about current

developments in the subject, and for providing a strategic lead and direction for science in the school. The subject leader monitors the budget and resources science topics to support learning. The subject leader has specially allocated time for fulfilling the task of reviewing samples of children's work, training, liaising with other subject leaders from other schools and organising science week.

Date of Policy: 3.7.23

Review of Policy: 3.7.24