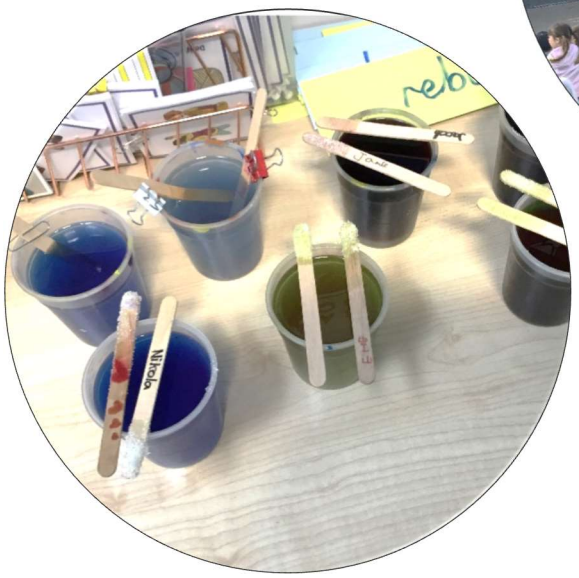
Godmanchester Bridge Academy

How we teach Science



This document outlines: the intent and rationale behind our Science curriculum, how it is delivered it and how we measure pupil progress.

Intent

At Godmanchester Bridge Academy, the Science curriculum is aligned with our school values:

Inspire	Enjoy	Achieve
Children will have their curiosity stimulated as a scientist, to find out why things happen in the way they do. Our children will learn to ask and answer scientific questions and begin to appreciate the way in which science will affect their future on a personal, national, and global level.	Children will be able to apply their knowledge of Science through experiments, building arguments and explaining the reasoning for their findings. Children will be encouraged to be creative in their approach to the subject and gain enjoyment from their developing appreciation of the natural world.	Children will acquire and develop key scientific knowledge, conceptual understanding and enquiry skills throughout the programmes of study. All learning is accessible for all children regardless of their ability or background and by the time they leave our school, they will be equipped as scientists to apply their understanding in everyday life.

Godmanchester Bridge Academy is committed to providing a comprehensive and engaging science curriculum that fosters curiosity, critical thinking, and a lifelong love for learning. This aims to foster scientific inquiry, develop scientific literacy, promote cross-curricular connections and emphasise practical applications.

Our scheme is written by the subject lead and supports pupils to meet the National curriculum end of key stage attainment targets. It is designed to give pupils every opportunity to develop an understanding of the nature, processes and methods of science through different types of science enquiries that help them to answer specific questions about the world around them, while giving them the ability to apply previously acquired concepts, skills and knowledge to new situations.

Our scheme aims to encourage children to gather and collate relevant evidence, to questions outcome and to persevere and develop a scientific approach to problem solving by encouraging questioning, a willingness to investigate, a tolerance of uncertainty, open-mindedness and critical reflection.

We aim to give a range of opportunities to relate science to everyday life through the use of everyday materials, technology and experiences; encourage an awareness of continuing scientific advances and their impact on society, both personally/close to home and globally and help all children realise their potential in science at primary school, thereby enabling them to take full advantage of science in secondary school and beyond.

Implementation

The Science scheme of work delivered through sequential lessons, allowing children to build their skills and knowledge, and apply them to a range of outcomes. Working scientifically skills, a key part of the National Curriculum, are also woven throughout every unit.

Units in each year group will cover topics throughout 3 core areas:

- Biology
- Chemistry
- Physics

The Science units cover each of the National curriculum attainment targets and are planned to allow flow to children's learning, progressing their knowledge and skills. These skills develop to ensure that attainment targets are securely met by the end of each key stage. The units fully scaffold and support essential and age appropriate, sequenced learning, and are flexible enough to be adapted to form cross-curricular links with our larger curriculum.

Science lessons are inquiry led and focus on using scientific language to communicate children's findings and ideas. Scientific vocabulary is explicitly taught to allow scientific concepts to be articulated clearly and precisely. Answers to questions are sought through careful observations; collecting accurate data, then analysing and presenting findings is achieved using scientific equipment while performing comparative and fair tests.

When planning and teaching science, our teachers utilise a number of resources to ensure that our science curriculum is both progressive and aspirational and to also ensure that our children develop the ability to work scientifically both whilst gaining and rehearsing new knowledge and also during assessment opportunities. Wherever possible the Science curriculum is enriched through whole school events, projects and experiences. The subject lead ensures cross curricular links through the use of Science skills and knowledge to celebrate and recognise significant events in the year.

The Science curriculum is designed in such a way that children develop their substantive and disciplinary knowledge which then further drives their scientific skills and work.

Curriculum Accessibility – Science

All Pupils:

- access a curriculum lead by access a differentiated curriculum designed by the subject leader that is appropriate for all but is also meaningful, challenging & ambitious.
- are provided a range of activities to engage them and allow them to effectively communicate their understanding.
- are closely monitored and supported pastorally to ensure their emotional wellbeing is prioritised.
- record work in a variety of ways, allowing access to the curriculum through multi-sensory learning.
- are supported with their behaviour choices in a positive environment, school use restorative consequences so that pupils can reflect and be supported to meet the community's behaviour expectations.
- receive feedback in lessons that results in further progress across the curriculum.
- named on seating plans so that pupils are known to staff and we foster a feeling of each pupil having their own place in the community.

Some Pupils Need:

- a variety of tasks are used across the key stages to support all learning styles
- pupils are given knowledge organisers in KS1 and KS 2 that include key vocabulary for the current topics
- Seating plans are structured to allow for appropriate support.
- Pupils have teacher support during practical lessons.
- Demonstrations are a key part in ensuring students with different learning needs access each of the science practical's covered.
- a specific seat in lessons to meet a sensory or a learning need.
- adapted lesson structure, e.g. more paired/ discussion work or increased mini-plenaries.
- targeted interventions to fill gaps in understanding.
- extra support in a lesson from an additional adult so that the pupils needs, academic or pastoral are effectively met.
- differentiated resources for learning tasks to match their level of learning.

Specific Pupils Need:

- access to a quiet space to ensure they can be supported to meet their potential.
- bespoke resources for learning tasks to match their level of learning.
- additional support in lessons from an adult who is attuned to their individual pastoral and learning needs.
- bespoke timetables taking in to account their needs to ensure that they are taught in an environment that best supports their needs.
- long-running interventions to support challenges around working memory, vocabulary deficit and language understanding.

Impact

The impact of the scheme is constantly monitored through both formative and summative assessment opportunities. Each lesson includes assessing pupils against the learning objectives. An assessment spreadsheet for children with secure understanding and those working at greater depth enables teachers to keep records of summative assessments for each child. These are reviewed and monitored by subject leads each term and informs future adaptations to the curriculum and planning.

After the implementation of the Science scheme, pupils should leave primary school equipped with a range of skills and knowledge, and the confidence to form a strong foundation for their Science learning at Key Stage 3 and beyond.

The expected impact of following the Science scheme of work is that children will:

★ Demonstrate a love of science work and an interest in further study and work in this field.

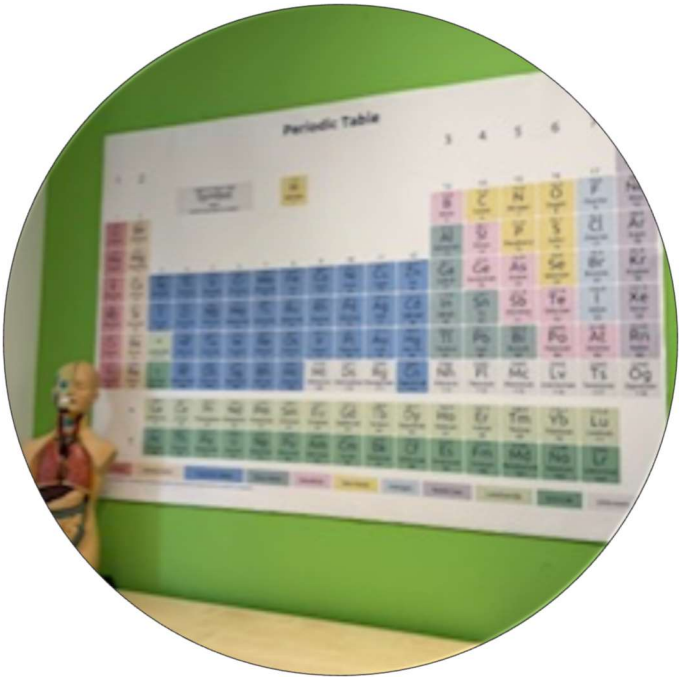
★ Retain Science knowledge with a real life context.

★ Be able to question ideas and reflect on their knowledge.

★ Be able to articulate their understanding of scientific concepts and be able to reason scientifically using rich scientific language.

★ Work scientifically to investigate and experiment, and organise, record and interpret the results of their investigations.

★ See themselves as scientists!



Subject Map

Year	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
R	Woodland animals and plants	Listening to different sounds. Exploring wind	Earth, Sun, Moon, planets and stars. Space travel	Signs of Spring. How to take care of themselves	Materials, Pollution (impact on water etc)	Sun and water safety. Shadows and rainbows
	Explore outside in all seasons					
1	Everyday materials		Animals including humans		Seasonal changes	Plants
2	Animals including Humans		Living things and their habitats	Uses of everyday materials	Plants	
3	Forces and magnets		Rocks	Animals including Humans	Light	Plants
4	States of matter		Electricity	Sound	Animals, including Humans	Living things and their habitats
5	Earth and space		Forces	Properties and changes of materials	Animals including humans	Living things and their habitats
6	Light	Electricity	Living things and their habitats	Animals including humans	Evolution and inheritance	