Godmanchester Bridge Academy

Science Policy - January 2018

Together We
Inspire Enjoy Achieve

Godmanchester Community Education Trust

Introduction

"Usus efficacissimus verum omnium magister" - Julius Caesar

"Experience is the most efficient teacher of all things"

An understanding of science comes largely from the first-hand observation and experience of basic physical principles, through trial and error known as the "vehicle of experimentation" that is so integral to our early development. Only then can one expand on these building blocks, as they become an essential instrument in our ability to manipulate more complex variables as adults.

An understanding of the physical, biological and chemical nature of the scientific world is further synthesised and enriched through questioning, the application of imagination, analysis and the generation and testing of ideas and theories.

As a fundamental part of everyday life, scientific ideas and developments can be seen to have an impact on past, present and future living in all cultures worldwide.

Aims and Objectives

At Godmanchester Bridge Academy we aim to stimulate a child's curiosity in finding out why things happen in the way they do. Our pupils will learn to ask scientific questions and begin to appreciate the way in which science will affect the future on a personal, national, and global level.

The objectives of our curriculum are:

- To encourage enthusiasm for and enjoyment of activities relating to science
- To build on children's natural curiosity and develop their interest by providing opportunities for first-hand exploration

- To develop a scientific approach to problem solving by encouraging questioning, a willingness to experiment, a tolerance of uncertainty, open-mindedness and critical reflection
- To develop attitudes of tolerance and co-operation
- To give opportunities to relate science to everyday life through the use of everyday materials, technology and situations
- To encourage an awareness of continuing scientific advances and their impact on society, both close at hand and globally
- To 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, into further education and professionally

Thematic Approach

At Godmanchester Bridge Academy our curriculum design gives each year group the opportunity to cover a broad range of themes and subjects. Themes last approximately one half term depending on the amount of content and the children's interests. In some cases, projects may be taught for a shorter period, for example during a science or art week.

Our science curriculum is broad, balanced and meets the requirements of the national curriculum. It has a project-based, thematic approach and provides children with a range of rich and memorable learning experiences. Some projects have a science focus, and others will have less of a scientific emphasis.

Planning and Organisation

This policy, used in conjunction with the programmes of study provides a structure for establishing breadth, balance and progression in science education at Godmanchester Bridge Academy.

Science will be taught through topic lessons with links made with all other subject areas within that topic. The science topics are based on the programmes of study from the primary national curriculum.

Pupils will be encouraged to learn through practical activities, including investigations which are open-ended in nature, as well as more structured practical tasks with a pre-determined outcome. The use of the correct vocabulary will be encouraged within the lessons.

The variety of the subject matter and skills to be acquired necessitates the use of different class teaching styles. Activities may be whole class, group or individually based. Differentiated activities and teaching will be incorporated into lessons but at different times children may work independently, in pairs, or in groups.

Teaching and Learning

Good practice in science means that pupils continuously use and extend their knowledge, understanding and skills in line with the programmes of study from the primary national curriculum. The thematic learning projects take full account of these and contain the following areas of study:

- Plants
- Animals including humans
- Everyday materials
- Seasonal changes
- Living things and their habitats
- Rocks
- Light
- Forces and magnets
- States of matter
- Sound
- Electricity
- Properties and changes of materials
- Earth and space
- Evolution and inheritance

The programmes of study also describe a sequence of knowledge and concepts, known as 'working scientifically', to be taught throughout.

Resources

The science coordinator has overall responsibility for the science resources; individual members of staff having responsibility for their care, collection and return.

Any breakages or losses should be reported to the science coordinator.

The majority of the science resources are located within specific year groups. EYFS has science activity materials, which are made readily available to the children on an on-going basis.

Perishable resources, such as food and household materials, should not be stored for long periods and renewed as required.

Health and Safety

The main guidelines for health and safety at Godmanchester Bridge Academy are contained in the "Be Safe" publication from ASE Publications.

The health and safety hazards of any science activity lesson should be assessed by the teacher and communicated to the children, who will be taught how to be aware of and how to reduce and control them.

Close supervision is needed when using lighted night lights or candles. They should be placed on a tray of plasticine or sand and children warned not to lean over them. Goggles are provided with the science resources. A fire blanket, sand or water should be accessible.

Everyday household chemicals may be used for experiments provided the children are closely supervised, gloves and goggles worn as needed and children wash their hands afterwards.

When using the environment for activities such as working with living things and soils, special attention needs to be paid to ensuring that the children always wash their hands immediately afterwards. Plastic gloves, work gloves and gardening gloves should be used as appropriate.

Individual teachers should be sensitive to any pupils with allergies, such as pollen, peanut or other food allergies and modify activities appropriately.

When undertaking any activities near water such as ponds, rivers or streams, staff should ensure that they have sufficient supervision and be aware of water safety. They should be aware of the dangers of Weil's disease which can be picked up from water or the surrounding banks. The children should wear gloves if practical and any children with cuts or scratches should have them covered or not be allowed to put them in or near the water. After such an activity staff should ensure and monitor that all the children have washed their hands adequately.

Equal Opportunities and Inclusion

We aim to give all pupils an equal opportunity of receiving a quality science education regardless of physical or mental ability, ethnic origin, culture, gender or social circumstances. A range of activities will be accessed by all and individual needs will be taken into account when preparing resources. Bilingual learners will have access to the language of science so that they can progress linguistically as well as cognitively within the subject. Sensitivity will be given to specific sensory disabilities and to culture and religious beliefs, especially when considering food and diet.

When teaching science teachers should be aware of gender stereotyping and will endeavour to present male and female examples of technical innovators, investigators and other scientists from a variety of cultural backgrounds so that a balanced outlook is arrived at. There needs to be a global perspective through considering how science has helped to solve problems in a wide range of differing environments. Pupils will be made aware that all cultures have a tradition of developing scientific skills and continue to do so.

Assessment, Recording and Reporting

Assessment in science will be made continuously through a variety of assessment techniques built into the learning projects.

Pupil's individual progress will be reported to parents in the end of school year report.

At Godmanchester Bridge Academy, we will respond to pupils' work by:

- Checking that the children have understood the learning objectives
- Checking that the children know how/when they have achieved them
- Encouraging them to identify, and subsequently work to, agreed success criteria (at an age appropriate level)
- Observing the children at work, listening and discussing with them
- Asking pupils to comment/reflect upon their progress; offering constructive comments on the progress made
- Marking and annotating work in line with the school's Marking Policy and providing opportunities for children to respond to the comments made on their own work

Local Community Links

The school encourages strong links with the community by encouraging visitors to the school and visits by the children into the community. We welcome visiting speakers and scientists from a wide field, such as parents, the local community, higher education, local firms and industry and educational shows.

Role of the Coordinator

The science coordinator will prepare guidelines, support all staff, organise and order resources, keep up-to-date with current practice and monitor science education throughout the school.

Policy Review

This policy has been produced collaboratively and is a reflection of the shared values of the staff. It will be implemented during the spring term of 2018. It will be reviewed every two years; or earlier if there are significant changes. In the first instance this will be in the spring term 2020. The learning projects are continuously reviewed and modified as appropriate.

January 2018

Policy Details	Date	Name
Policy approved by Senior Management:		
Policy approved by Senior Governor		
Date of next review: **January 2020**		

Policy Section: Section 1A – Curriculum Policies (Pupils)

Policy reference: GBA - 1A/ 13 SC