Galley Common School Science Policy

Aims

Our overall aims in teaching science are to:

- build on children's natural curiosity and develop a scientific approach to problem solving;
- provide practical experiences to develop children's understanding of scientific skills and ideas;
- encourage children to ask and answer scientific questions;
- give children the experience of scientific processes;
- develop a positive attitude towards science;
- foster an appreciation of, and concern about, our environment.

Links to school aims (see policy for Teaching and Learning)

Within science we:

- provide a stimulating and interactive environment;
- encourage children to think creatively and critically;
- ensure there is appropriate differentiation to meet the needs of all children.

Teaching and learning style

The majority of lessons involve practical work to enable children to use their first-hand experience to make sense of scientific concepts. They engage in a variety of problem-solving activities with a range of contexts that stimulate them. We use ICT in science lessons to support and enhance their learning where appropriate. We make use of our outdoor environment as much as possible.

Differentiation

We recognise that there are children of widely different scientific abilities in all classes and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- setting common tasks which are open-ended and that can have a variety of responses;
- planning for the differentiation of groups through setting mild, spicy and hot activities and challenges;
- grouping children by ability in the room and setting different tasks for each ability grouping referring to the year group expectations in the National Curriculum;
- providing resources of different complexity, matched to the ability of the child;
- using teaching assistants to support the work of individual children or groups of children.

Science curriculum planning

We use the Early Years Foundation Stage curriculum for the Reception classes and the National Curriculum for Key Stage 1.

In the Foundation stage our long term plan relates to topics and there is a balance of themes that link specifically to all areas of the curriculum.

In Key Stage 1 we have a Curriculum Map where we teach through topics. We have ensured there is breadth and balance and that all science objectives and working scientifically skills are covered within each year group. Science is taught as a discrete subject with cross-curricular links whenever possible, ensuring that children have the opportunity to learn and use all of the science skills.

We hold an annual science week where we plan opportunities for the children to work in depth on topics and invite parents into school to help parents understand how we teach science. We aim to plan an educational visit linked to science week for Foundation Stage and Key Stage 1.

Foundation Stage

In the Early Years Foundation Stage science is part of Understanding the World. Through our topics we make cross-curricular links within Understanding the World and with other areas of the curriculum. Children develop their scientific skills and knowledge through practical activities and investigations. We make

use of the indoor and outdoor classroom. We create discovery areas where children can investigate and explore science concepts and practise using "Super Science Skills". The outdoor classroom enables the children to learn about natural elements from first-hand experience, for example weather, growing and the seasons. We support the children in learning to record what they have found out through discussions, drawings, writing and simple graphs and tables. Science features heavily within the Characteristics of Effective Learning which are: playing and exploring, active learning and thinking critically.

Key Stage 1

In Key Stage 1, science is taught discretely on a weekly basis. The team find cross-curricular links where possible and differentiate the tasks to ensure appropriate challenge for the more able and opportunities to consolidate knowledge and understanding for the less able. Key Stage 1 classes plan hands-on activities to give children the opportunity to independently investigate a wider range of concepts and consolidate their knowledge and understanding further. Year 1 and Year 2 use Super Science Skills posters to focus on and develop skills in each year group. These Super Science Skills follow a progression from Reception through to Year 2.

The contribution of science to teaching in other curriculum areas

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Children use texts to find out information for themselves. The children develop oral skills in science lessons through discussions and through recounting their observations. They develop their writing skills through recording their results in a variety of ways.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. Through working on investigations they learn to estimate and predict. They develop the skills of accurate observation and recording events. They use numbers in many of their answers and conclusions. In Year 2, the children begin to record and analyse their results using tables and charts.

Computing

Children use a range of technology where appropriate. This may include iPads and the CleverTouch boards. We use the internet to support our science, modelling how to find, select and analyse information.

Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of PSHE. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, by working in teams or studying environmental issues. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive citizenship.

Spiritual, moral, social and cultural development

Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Science develops the children's knowledge and understanding of physical and environmental factors and supports our whole school ethos of promoting respect for other people.

Teaching science to children with special educational needs (see special educational need policy)

At our school we teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all pupils to make progress. We do this by setting suitable learning challenges and responding to each child's different needs. Assessment against the National Curriculum allows us to consider each child's attainment and progress against year group expectations.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, and differentiation – so that

we can take some additional or different actions to enable the child to learn more effectively. This ensures that our teaching is matched to the child's needs.

Health and safety

All staff should consider health and safety risks when planning a scientific activity. In our Local Authority the code of practice for health and safety in primary science is encompassed in the booklet 'Be Safe!' All staff are expected to be familiar with the contents and to follow its guidance. This guidance is kept in the staff room for all staff to be able to access it.

Assessment and recording

In the Early Years Foundation Stage, at the end of the school year, we assess against the Early Learning Goals (ELG). The ELG "The Natural World" is closely linked to science.

We observe and assess throughout the year. We record the children's attainment as class records and through observations on the Tapestry Online Journals. We use our observations and assessments to plan the next steps and this is then discussed in our planning meetings.

In Key Stage 1 at the end of each topic, the children complete an assessment task which has the National Curriculum objectives in relation to the science topic that has been taught. The assessment is made through observing, discussing, questioning and listening to the children. Throughout the topic, the teacher will have made other notes, which will feed into their assessment of each child. These records are kept and are used as the basis for assessing the progress of each child and to inform future planning. We pass this information on to the next teacher at the end of the year and it is currently used as part of the teacher assessment for SATs at the end of Key Stage 1.

Resources

Science resources are stored across the classrooms with resources that are relevant to each year group. The subject leader is responsible for this area and the overall maintenance and replacement of items, within the budget allocation.

Parents as Partners

Every year we have 'Science Week' in school and this is an opportunity for parents to find out how and what we teach in science. We also inform parents how they can support their child's learning of science at home.

External visitors/school outings

We aim to organise opportunities for external visitors and companies to come into school to enhance the children's science learning, as well as going on educational visits.

Monitoring and review

It is the responsibility of the science subject leader to monitor the standards of children's work and the quality of teaching in science. The science subject leader is also responsible for supporting colleagues in the teaching of science, by being informed about current developments in the subject and by providing a strategic lead and direction for the subject in the school. The science subject leader devises an action plan for future developments and improvements. The science subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work and visiting classes to observe teaching in the subject.

Signed:

Reviewed: December 2022

Next Review Date: December 2024