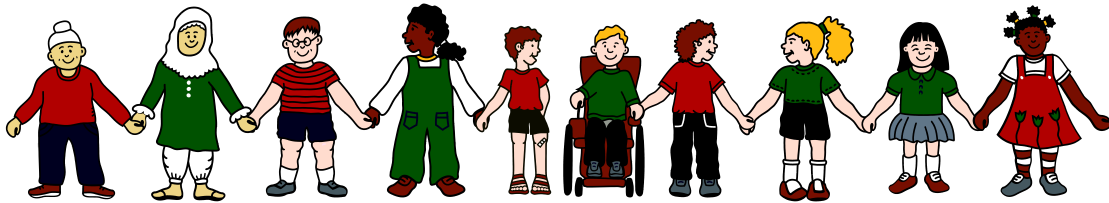


# THE GILES NURSERY AND INFANTS' SCHOOL



## Science Policy

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## Science Policy

### 1 Aims and objectives

- 1.1 Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way that they do. It teaches methods of enquiry and investigation to stimulate creative thought. Children 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.
- 1.2 Our objectives in the teaching of science are:
- asking simple questions and recognising that they can be answered in different ways
  - observing closely, using simple equipment
  - performing simple tests
  - identifying and classifying
  - using their observations and ideas to suggest answers to questions
  - gathering and recording data to help in answering questions
  - to know about life processes; including animals and humans
  - to know about plants
  - to know about seasonal changes
  - to know about materials
  - to know about living things and their habitats.

### 2 Teaching and learning style

- 2.1 We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. Sometimes, we do this through whole-class teaching linking to our creative curriculum, while at other times, we engage the children in an enquiry-based activity. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as, graphs, pictures and photographs. They use computing devices in science lessons because it enhances their learning. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, e.g. investigating a local environmental problem. In key stage 1 and Reception classes the children take part in regular science workshops and science weeks.

2.2 We recognise that in all classes, children have a wide range of scientific abilities, 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 tasks which are open-ended and can have a variety of responses
- setting tasks of increasing difficulty (we do not expect all children to complete all tasks)
- grouping children in a variety of ways
- providing resources of different complexity, matched to the ability of the child
- using classroom assistants to support the work of individual children or groups of children.

### **3 Science curriculum planning**

3.1 Science is a core subject in the national curriculum. The school uses the national curriculum as the basis for its creative curriculum planning. The objectives have been linked so that we make use of the local environment and woodland / pond area in our fieldwork.

3.2 We carry out our curriculum planning in science in three phases (long-term, medium-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. The science subject leader works this out in conjunction with teaching colleagues in each year group. In some cases, we combine the scientific study with work in other subject areas, especially at key stage 1; at other times, the children study science as a discrete subject.

3.3 Our medium-term plans and topic webs are written based on the national curriculum. They are linked to our creative curriculum and give details of each unit of work for each term. The science subject leader keeps and reviews these plans.

3.4 The class teacher is responsible for writing the daily lesson plans for each lesson (short-term plans). These plans list the specific learning objectives and expected outcomes of each lesson. The class teacher keeps these individual plans, and they often discuss them on an informal basis with the science subject leader.

3.5 We have planned the topics in science so that they build on prior learning. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit, and we also build progression into the science topics, so that the children are increasingly challenged as they move up through the school.

### **4 The Early Years Foundation Stage**

4.1 We teach 'Understanding the World' in our Nursery and Reception classes as an integral part of the topic work covered during the year. As the Nursery and Reception classes are part of the Early Years Foundation Stage we relate the scientific aspects of the children's work to the objectives set out in the EYFS which underpin the curriculum planning for children aged birth to five. Science makes a significant contribution to developing a child's knowledge and understanding of the world. For example in the exploration and investigation area activities are changed regularly and linked to each topic or weekly theme.

## **5 The contribution of science to teaching in other curriculum areas**

### **5.1 English**

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in English are of a scientific nature. The children develop oral skills in science lessons through discussions. They develop their writing skills through writing about projects and recording information.

### **5.2 Mathematics**

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply number. Through working on investigations, they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers.

### **5.3 Personal, Social, Health and Citizenship Education (PSHCE)**

Science makes a significant contribution to the teaching of PSHCE. The subject matter lends itself to raising matters of citizenship and social welfare. For example, the subject gives children numerous opportunities to debate and discuss.

### **5.4 Spiritual, moral, social and cultural development**

Science teaching offers children many opportunities to examine some of the fundamental questions in life. For example the evolution of living things and how the world was created. 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. We give them the chance to reflect on the way people care for the planet, and how science can contribute to the way in which we manage the Earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

## **6 Science and computing**

6.1 Computing enhances the teaching of science in our school significantly, because there are some tasks for which computing is particularly useful. It also offers ways of impacting on learning which are not possible with conventional methods. Apps and software are used to animate and model scientific concepts, and to allow children to investigate processes which it would be impracticable to do directly in the classroom. Data can be collected and used to produce tables and graphs. Children learn how to find and select information on the Internet and on other media.

## **7 Science and inclusion**

7.1 At our school, we teach science to all children, whatever their ability and individual needs. 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 good progress. We strive hard to meet the needs of those pupils with special educational needs and disabilities (SEND), those able and more able and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details, see individual

whole-school policies: special educational needs and disabilities (SEND), more able / most able and English as an additional language.

- 7.2 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, differentiation-so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the national curriculum allows us to consider each child's attainment and progress against expected levels. This ensures that our teaching is matched to the child's needs.
- 7.3 Intervention through school will lead to the creation of an Individual Mapped Provision (IMP) for children with special educational needs. The IMP may include, as appropriate, specific targets relating to science.
- 7.4 We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom. For example trips to the local woods or to Collage Lake. We carry out a risk assessment using 'Evolve' prior to each activity to ensure that it is safe and appropriate for all pupils.

## **8 Assessment for learning**

- 8.1 Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it, and uses this assessment to plan for future learning. Verbal feedback is given to the child to help guide their progress.
- 8.2 At the end of a unit of work, they make a summary judgement about the work of each pupil in relation to the national curriculum levels of attainment. The teacher records the attainment grades at the end of each term on SIMS. We use these grades as the basis for assessing the progress of each child, and we pass this information on to the next teacher at the end of the year.
- 8.3 Teachers make an assessment of the children's work in science at the end of key stage 1. We report the teacher assessments which we make whilst observing children's work throughout the year.
- 8.4 The science subject leader keeps samples of children's work and uses these to demonstrate the expected level of achievement in science for each age group in the school. The subject leader holds staff moderation meetings to access the children's work across the school.

## **9 Resources**

- 9.1 We have sufficient resources for all science teaching units in the school. Each year group has their own resources to support their topics. The library contains a good supply of science topic books and the school has a good stock of iPads and computers to promote children's individual research using safe search engines such as Google Kiddle.

## **10 Monitoring and review**

- 10.1 The coordination of the science curriculum is the responsibility of the subject leader, who also:

## The Giles Nursery and Infants' School

- supports colleagues in their teaching, by keeping informed about current developments in science and providing a strategic lead and direction for this subject
- gives the headteacher an annual summary report in which she evaluates the strengths and weaknesses in science and indicates areas for further improvement
- uses some PPA time to review evidence of the children's work, and to observe science lessons across the school.

10.2 This policy will be reviewed at least every three years.

**Last review March 2022**

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