



# Fairchildes Primary School

## Science Policy

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### **Introduction**

Science at Fairchildes fosters a range of personal qualities such as encouraging curiosity, logical thinking, critical evaluation of evidence, respect for the environment and developing knowledge and understanding of the world in which we live.

The National Curriculum 2014 provides a framework for science coverage, and this document outlines how we carry this out at Fairchildes. The school has a scheme of work to ensure a full coverage of the curriculum.

### **Aims and Objectives**

To develop children's scientific skills and abilities, we provide them with opportunities to:-

- Make observations.
- Suggest questions that can be tested scientifically.
- Bring knowledge to conduct an investigation and solve problems.
- Select and handle equipment safely.
- Design, carry out and evaluate their own investigations.
- Seek, identify and evaluate scientific patterns.
- Communicate findings in a variety of ways.
- Give the children a sound knowledge of data and technology in a scientific context.
- Develop and encourage the enjoyment of science for all.

### **Teaching and Learning**

On average, foundation and key stage one pupils will receive one hour per week or science and in key stage two pupils will receive two hours a week. The teaching of science should allow children as much first-hand experience as possible, be practical and grouped into 5 main types:

1. Investigations.
2. Illustrative activities.
3. Explore and discover activities.
4. Demonstrations/discussions.
5. Research.

### 1. Investigations

Allow children to make their own observations in order to develop a love of science and to recognise that science contributes to all aspects of everyday life.

Encourage children to make "I think this will happen because. . . ." statements which they can test.

Allow children to work independently, planning how the investigation is to proceed and making decisions - what to change, what to measure or judge and what to keep the same.

Allow children to select the most appropriate equipment and apparatus for an activity.

Encourage questions for an investigation and allowing a variety of routes to a solution

Give children the opportunity to place their own interpretation on data and compare what happened with their prediction.

### 2. Illustrative Activities

This style of teaching deals with a specific concept or skill and can be teacher directed. Teacher directed activities may be a very useful way of introducing children to the skills involved in carrying out an investigation. It may include, at particular stages:

Directing or leading pupils to what is to be observed.

Advising pupils on approaches to an investigation and the appropriate equipment and measuring instruments to use.

Prescribing the methods of recording and communicating.

Specifying one route to the solution.

Involving all pupils arriving at the same conclusion which illustrates the idea or concept under study.

### 3. Explore and Discovery Activities

The discovery learning method involves a practical activity that consolidates previously developed scientific skills and reinforces knowledge and understanding, but is not itself an investigation.

It may include:

Involving the teacher in providing stimulus for the children to observe and explore at first hand.

Asking questions that can be answered through observation and exploration. Use higher order questions and projects as extensions for gifted and talented pupils.

Directing and leading children to what is to be explored.

Involving teachers and children in discussing and comparing their findings and developing scientific ideas.

Developing science informally through after school clubs and through membership of the British Association of Young Scientists.

Provide CPD to support staff in implementing new approaches to the teaching of Science.

#### 4. Demonstration

Demonstration activities are a way of getting started or showing a particular skill or imparting knowledge.

The demonstration could be carried out by the teacher, visiting experts, or children.

This may take place either in school or on an educational visit. The demonstration may take the form of a talk or an experiment to show a particular concept. Wherever possible, demonstration activities should be followed by practical work of the illustrative type.

#### 5. Research

Research activities involve children in using a variety of secondary sources to develop and increase their scientific knowledge.

Possible secondary sources include people, books, databases, charts, photographs, pictures, historical records, videos and websites.

It will include:

Involving children and teachers specifying questions to be researched.

Involving the children in identifying relevant information.

Involving the children in selecting and interpreting the relevant information.

Involving the children in presenting the information for the appropriate audience.

Linking science to other subjects. For example, looking at the scientific reasons why we need a healthy lifestyle (c/c PSHE).

### **Assessment**

Scientific inquiry (SC1) is assessed three times per year based on the Expected standard. Comments and examples of work are filed into each class folder. The other areas of science - life processes and living things, physical processes and materials and their properties (SC2-4) are assessed at the end of each relevant topic. Further to this, progress is tracked termly through assessment meetings between the senior leadership, the science coordinator and class teachers.

Additionally, pupils' knowledge and understanding are assessed before each unit of work through questioning, discussion and observation, using the criteria from the Expected Standard Statements. Following the assessments, planning for the topic is adapted in order to support all children to achieve Expected Standard. (For further information see the Assessment policy). Children's attainment in science is discussed at SLT meetings and in data collection meetings each term with the assessment coordinator.

### **Inclusion**

As teachers we must be aware of, and respond to, pupils' diverse learning needs including those with English as an additional language, those with learning difficulties, and the Able, Gifted and Talented pupils. Teachers will identify gifted and talented, SEN and EAL pupils.

All children will have access to science. Therefore, work and activities will be differentiated accordingly to ensure that children of all abilities participate to their full potential. Consideration will be given to language, resources and equipment used. (For further information see the Inclusion Policy.)

## **Other Subject Relevant Areas**

### **Health and Safety**

At Fairchildes, safety measures are explained and discussed with children. This leads to children considering the needs and safety of themselves and others. (For further information see The Health and Safety Policy)