



## Science Policy

**Date of policy:** 29 January 2019

**Date last review adopted by governing body:** 29 January 2019

**Frequency of review:** Annual

### 1. Introduction

Learning about science offers the children the opportunity to:

- gain foundations for understanding the world
- experience and observe phenomena, looking more closely at the natural and humanly constructed world around them
- recognise the power of rational explanation and develop a sense of excitement and curiosity
- understand how key knowledge and concepts can be used to explain what is occurring, predict how things will behave, and analyse causes. This understanding should be consolidated through their appreciation of applications of Science in society and the economy.

This policy should be referred to in conjunction with the policies on teaching and learning, assessment, marking and SEND.

### 2. Aims

The aims of Science teaching at our school have been revised in line with the National Curriculum 2014.

Our aims for children are that they:

- develop scientific knowledge and conceptual understanding through the specific disciplines of biology, chemistry and physics
- have opportunities to observe changes over a period of time, noticing patterns, grouping and classifying things, carrying out simple comparative tests, and finding things out using secondary sources of information
- have first-hand practical experiences, but also some use of appropriate secondary sources, such as books, photographs and videos
- begin to use simple scientific language to talk about what they have found out and communicate their ideas to a range of audiences in a variety of ways
- can read and spell scientific vocabulary at a level consistent with their increasing word-reading and spelling knowledge at key stage 1
- learn to ask simple questions recognising that they can be answered in different ways
- learn to observe closely, using simple equipment
- perform simple tests
- identify and classify
- use their observations and ideas to suggest answers to questions.

### **3. Teaching and learning**

All class teachers have the freedom to develop their teaching of science in a way that suits their class. This may include a variety of teaching and learning opportunities, such as: whole-class teaching, enquiry-based research, asking and answering science questions, reports, using a variety of data, such as graphs, pictures, and photographs, drama, discussions, collecting and presenting data, problem solving and researching scientific problems or current issues. We have brought into a scheme of work called "Science Bug." As a school we have decided to use it as and when it suits the needs of the class or when fits in with the current topic being delivered. This allows the teachers to be creative with their science teaching as well as having a scheme of work to use when it is appropriate.

### **4. Curriculum overview**

Science is taught with a cross curricular approach where suitable and is now linked to the current topic being taught across KS1. The long term curriculum maps have been produced using guidance from the National Curriculum 2014 and the statutory themes have been allocated suitably for each year group.

Science is taught in the Foundation Stage when opportunities occur during the children's play linked to what the child is interested in that particular moment, this can be prompted by resources put in the environment e.g. bug hunting equipment. Science makes a contribution to the Foundation Stage Profile objectives of developing a child's knowledge and understanding of the world.

### **5. Differentiation**

Differentiation can be provided in a number of ways: by outcome, by adult support provided, by differentiating resources, by differentiating through planning. Teachers differentiate in the way in which is considered most appropriate for the child, group or objective being taught.

### **6. Equal opportunities**

Where children have a physical disability or have SEND, we aim to provide resources and learning experiences that will support their learning in science. We do this by setting suitable learning challenges, responding to each child's different needs and providing learning opportunities that enable all pupils to make progress.

### **7. Assessment, recording and reporting**

Class teachers assess children's work in science by making informal judgements as they observe them during each science lesson. All work in books is marked in accordance with the school policy. To aid with assessment teachers will complete a grid that is placed in the back of each child's book, see appendix 1 and 2. This grid will then be used to help the teacher assess whether a child has achieved, not achieved or exceeded the expectations of the subject they have covered. This grid can be used as and when the teacher wishes e.g. during class time after make observations or at the end of each half term. Each term the teacher makes a summary judgement about the work of each pupil in relation to the National Curriculum attainment guidance.

## **8. Subject Leaders' Role**

- To facilitate the development of Science identified in the School Development Plan.
- To review Science Policy periodically.
- To work collaboratively with staff to promote continuity and progression.
- To create and monitor Schemes of work.
- Monitoring including lesson observations, pupil voice surveys, work sampling and climate walks.
- To attend relevant INSET courses, and encourage and support staff where possible.
- To organise and if relevant deliver staff training.
- Monitoring and organisation of centrally held resources.
- Purchase of resources in consultation with staff and in line with the allocated budget

## **9. Role of Governors**

Governors determine, support, monitor and review the school policies. They support the use of appropriate teaching strategies by allocating resources effectively. They ensure that the building and equipment are safe. They monitor pupil attainment across the school and ensure that staff development and performance management promote good quality teaching.

## **10. Resources**

Science resources are stored in the Science resource cupboard or in the classroom in which they are most regularly used.

## **11. ICT/E-Safety**

Apple TVs are extensively used by teaching staff, the whole class, groups or individuals throughout all aspects of lessons. ICT is used in science lessons where appropriate. A range of resources including I-pads, tablets and Beebots are used to support and enhance learning.

Our E-safety/Internet use policy applies to all use. E-safety depends on effective practice at a number of levels:

- Responsible ICT use by all staff, pupils and their parents
- Sound implementation of E-Safety policy and practice in both administration & curriculum.
- Safe and secure network and broadband connection from Essex County Council

## **12. SEND**

Through our assessment procedures we aim to identify children with additional needs to enable all children to achieve their full potential. Those children who are experiencing difficulties are given extra support as outlined in their One Plans and Class provision maps. This is monitored by the Class teacher and SENCO. We provide learning opportunities that are matched to the needs of the children in line with our SEND and Inclusion policies. Teachers will ensure that they match work to differing levels of ability and development, supporting those who need to make progress in smaller steps. Intervention support programmes are run to scaffold the learning of the children making less than expected progress.

### **13. Able and Gifted children**

Children who show a particular aptitude for science will have opportunities to work on more challenging investigations and problem solving activities within their class. These children will also be challenged through direct questioning within lessons. Activities will be planned to develop mastery of skills and ensure a deepening breadth of study.

### **14. Equality statement**

The governors and staff are committed to providing the full range of opportunities for all pupils regardless of gender, disability, and ethnicity, social, cultural or religious background. All pupils have access to the curriculum and the right to a learning environment which dispels ignorance, prejudice or stereotyping.

## Appendix 1: Year 1 Science Expectations

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
<b>Working scientifically</b>						
Ask simple questions and understand that they can be answered in different ways.						
Observe closely, using simple equipment e.g magnifying glass.						
Perform simple tests.						
Identify and classify living and non-living things.						
Use observations and ideas to suggest answers to questions.						
Gather and record data to help in answering questions.						
<b>Plants</b>						
Identify and name a variety of common wild and garden plants, including deciduous and evergreen trees.						
Identify and describe the basic structure of a variety of common flowering plants, including trees.						
<b>Animals, including humans</b>						
Identify and name a variety of common animals including fish, amphibians, reptiles, birds and mammals.						
Identify and name a variety of common animals that are carnivores, herbivores and omnivores.						
Describe and compare the structure of a variety of common animals (fish, amphibians, reptiles, birds and mammals, including pets).						
Identify, name, draw and label the basic parts of the human body and say which part of the body is associated with each sense.						
<b>Everyday Materials</b>						
Distinguish between an object and the material from which it is made.						
Identify and name a variety of everyday materials, including wood, plastic, glass, metal, water, and rock.						
Describe the simple physical properties of a variety of everyday materials.						
Compare and group together a variety of everyday materials on the basis of their simple physical properties.						
<b>Seasonal Changes</b>						
Observe changes across the four seasons.						
Observe and describe weather associated with the seasons and how day length varies.						

## Appendix 2: Year 2 Science Expectations

<b>Working scientifically (continued from Year 1)</b>	<b>Autumn 1</b>	<b>Autumn 2</b>	<b>Spring 1</b>	<b>Spring 2</b>	<b>Summer 1</b>	<b>Summer 2</b>
Ask simple questions and understand that they can be answered in different ways.						
Observe closely, using simple equipment e.g magnifying glass.						
Perform simple tests.						
Identify and classify living and non-living things.						
Use observations and ideas to suggest answers to questions.						
Gather and record data to help in answering questions.						
<b>Living things and their habitats</b>						
Explore and compare the differences between things that are living, dead, and things that have never been alive.						
Identify that most living things live in habitats to which they are suited and describe how different habitats provide for the basic needs of different kinds of animals and plants, and how they depend on each other.						
Identify and name a variety of plants and animals in their habitats, including microhabitats.						
Describe how animals obtain their food from plants and other animals, using the idea of a simple food chain, and identify and name different sources of food.						
<b>Plants</b>						
Observe and describe how seeds and bulbs grow into mature plants.						
Find out and describe how plants need water, light and a suitable temperature to grow and stay healthy.						
<b>Animals, including humans</b>						
Notice that animals, including humans, have offspring which grow into adults.						
Find out about and describe the basic needs of animals, including humans, for survival (water, food and air).						
Describe the importance for humans of exercise, eating the right amounts of different types of food, and hygiene.						
<b>Use of everyday materials</b>						
Identify and compare the suitability of a variety of everyday materials, including wood, metal, plastic, glass, brick, rock, paper and cardboard for particular uses.						
Find out how the shapes of solid objects made from some materials can be changed by squashing, bending, twisting and stretching.						