



**LAYFIELD PRIMARY
SCHOOL**

Science Policy

May 2018

Review Date: **May 2019**
C. Vaulks

Introduction

Science is a core subject in the primary curriculum, taught as a single subject on a weekly basis. Working Scientifically is an essential part of every lesson. Pupils are encouraged to become independent learners, carry out their own investigations and discover things for themselves, to enable appreciation of the way Science will affect their future. The implementation of this policy is the responsibility of all teaching staff.

Aims and Objectives-

We live in an increasingly scientific and technological age where children need to acquire the knowledge, skills and understanding to prepare them for future life.

- To stimulate children's interest and enjoyment in the area of Science; creating an enthusiastic approach.
- To help children understand the nature of scientific ideas and to obtain and test the evidence for them.
- To develop an ability to plan, predict, interpret and communicate the results of their investigations.
- To encourage children to raise questions and learn how to investigate and explore these using both first-hand experience and secondary sources.
- To encourage children to treat the living and non-living environment with respect and sensitivity.

EYFS

The scientific development of children in the Early Years Foundation stage is planned for in accordance with the Development Matters and Early Learning Goals. Science falls under the Understanding of The World area of learning. Teachers plan child initiated and adult-led activities linked this area of learning every week.

KS1

At Key Stage 1, activities in science are built on previous experience.

Teaching ensures that scientific enquiry is taught through contexts taken from the sections on life processes and living things, materials and their properties and physical processes. The general teaching requirement for health and safety applies in this subject. During Key Stage 1 pupils observe, explore and ask questions about living things, materials and phenomena. They begin to work together to collect evidence to help them answer questions and to link this to simple scientific ideas. They evaluate evidence and consider whether tests or comparisons are fair. They use reference materials to find out more about scientific ideas. They share their ideas and communicate them using scientific language, drawings, charts and tables.

KS2

At Key Stage 2 activities in science build on previous experiences and take account of previous achievement.

Teaching ensures that scientific enquiry is taught through contexts taken from the sections on life processes and living things, materials and their properties and physical processes. The general teaching requirement for health and safety applies in this subject. During key stage 2 pupils learn about a wider range of living things, materials and phenomena. They begin to make links between ideas and to explain things using simple models and theories. They apply their knowledge and understanding of scientific ideas to familiar phenomena, everyday things and their personal health. They begin to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts. They carry out more systematic investigations, working on their own and with others. They use a range of reference sources in their work. They talk about their work and its significance, and communicate ideas using a wide range of scientific language, conventional diagrams, charts and graphs.

| <u>Key Stage 1 programme of study (statutory requirements)</u> |
|---|
| <u>Year 1</u> Working scientifically (to be embedded through all topics) <ul style="list-style-type: none">• Plants• Animals including humans• Everyday materials• Seasonal changes |
| <u>Year 2</u> Working scientifically (to be embedded through all topics) <ul style="list-style-type: none">• Living things and their habitats• Plants• Animals including humans• Uses of everyday materials |

Lower Key Stage 2 programme of study (statutory requirements)

Year 3

Working scientifically (to be embedded through all topics)

- Plants
- Animals including humans
- Rocks
- Light
- Forces and magnets

Year 4

Working scientifically (to be embedded through all topics)

- Living things and their habitats
- Animals including humans
- States of matter
- Sound
- Electricity

Upper Key Stage 2 programme of study (statutory requirements)

Year 5

Working scientifically (to be embedded through all topics)

- Living things and their habitats
- Animals including humans
- Properties of everyday materials and reversible changes
- Earth and space
- Forces

Year 6

Working scientifically (to be embedded through all topics)

- Living things and their habitats
- Evolution and inheritance
- Light
- Forces
- Electricity

Planning

Medium term plans are stored on the school network. Teaching time is a 2 hour lesson per week for Year 2 upwards and a unit is completed in a half term, during the remaining half term(s) all Working Scientifically gaps are met. Short term planning is completed on a weekly basis and is also stored on the network.

Assessment and recording of a child's attainment will be made by:

- Continual assessments made through science lessons.
- Marking of children's work which will often include individual comments as to achievements and targets. Staff will mark in green for work that is correct and for achievements and mark in blue for work that is incorrect and areas to improve specific to Science. Staff will give time for the children to read their own comments or talk to the children about their work and correct their own work.
- Baseline assessments for children coming into school in EYFS.
- Half-termly assessments of children's attainment are measured against SPRINT in KS1/2 and are recorded on tracking sheet store on the school network.
- Half-termly assessments of children's attainment are measured against STEPS in EYFS and are recorded on tracking sheet store on the school network.
- Cohort action plans are completed on a termly basis to evaluate the progress of all children, including vulnerable groups to ensure appropriate progress is made by all.
- Termly moderation of children's attainment are measured against SPRINT and are stored in the subject leader folder.
- Submission of End of Key Stage results to the local authority who send them on our behalf to the government.
- Parents' Consultation Evenings – these will include reference to attainment, application and attitude.
- All children will have their attainment tracking sheets saved on the school network from the previous year's ensuring adequate progress is being made.
- Science achievements will be reported to parents in the Summer Term as part of the annual report as well as specific areas to improve.

Differentiation

Differentiation within Science may transpire by outcome, task or by the amount of support provided. The abilities of all children will be taken into account when they are given the task, the equipment and the support from adults within the school. Teachers set high expectations and provide opportunities for all pupils to achieve and make progress. Where appropriate individual needs should be catered for so that all pupils can take part in lessons fully, effectively and to the best of their ability. Where children exceed expectations, the teacher will extend their learning by providing challenging project work involving researching, investigating and drawing conclusions.

Development of skills

The emphasis in our teaching of Science is on first hand experience, encouraging children increasingly to take control of their own learning. The children are encouraged to develop the following skills:

Observing - The children are encouraged to observe with care and precision including measurements where necessary. Observation may include attention to texture, smell, taste and the ability to make sounds and the use of observation aids such as lenses, microscopes, video film, photographs and computers.

Hypothesising - The children are encouraged to put forward ideas, and then set about proving/disproving their ideas with explanations.

Predicting - The children are encouraged to put forward ideas about what may happen in the future.

Investigating - The children are encouraged to devise fair and accurate tests, from all different types of enquiries:

- Fair test
- Exploring
- Observation over time
- Pattern seeking
- Classifying and identifying
- Research

Recording and Analysing Results - The children are taught the various ways of recording. This includes: diagrams, charts, tables and graphs. Recording also includes written and verbal reports, models and the use of photographs or ICT. Charts and tables and forms of recording may be drawn up for the children until they have developed the ability to design their own.

Monitoring

The science subject leader will monitor planning, teaching and pupils' work throughout the school. Each term the subject leader carries out a moderation and scrutiny, to ensure high standards are maintained. Over the course of the year the subject leader carries out staff audits, pupil interviews and lesson observations. The findings from all of these are fed into the action plan for future reference and action.

Health and Safety

It is the responsibility of each teacher to make themselves aware of the health and safety guidelines in the Science National Curriculum.

- A risk assessment will be made, as part of the planning process, before any potentially dangerous scientific activity is undertaken.
- Children will be informed of any risks or hazards but will also be encouraged to assess and identify risks for themselves.
- Children will be shown how to use scientific equipment safely.

Resources

Resources are mainly stored in the resource cupboard; they should be clearly labelled and stored carefully. All resources should be returned in a neat and tidy manner, any breakages should be reported to the Science subject leader.