

Simmondley Primary School

Science Policy

Introduction

Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation and using and applying process skills.

What is Science?

Rationale

Science is a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us.

Through science in our school we aim to:

- Encourage the development of positive attitudes to science.
- Deliver the National Curriculum Science orders in ways that are imaginative, purposeful, well controlled and enjoyable, bearing in mind that the new curriculum will lead to further policy changes.
- Help in developing and extending the children's scientific concept of their world and encouraging them to ask deeper questions about the world around them.
- Deliver clear and accurate teacher explanations and skilful questioning. Providing guidance but at the same time allowing children the freedom to explore as independently as possible.
- Make strong, purposeful links between science and other subjects. Using ICT in a meaningful way to extend their learning (Data Loggers, video, photography and microscopes).
- Develop the use of scientific language, recording and techniques.
- Enable children to become effective communicators of scientific ideas, facts and data whilst becoming experts at analysing the data they collect.

- Develop the following skills of investigation - observation, measuring, predicting, hypothesising, experimenting, communicating and interpreting.

Teaching and Learning of Science

Content of the Curriculum

Science is important because: -

- It is a body of knowledge essential to our understanding of the world around us.
- The process of scientific investigation forms the basis of the most intellectual enquiry.
- The skills and knowledge of science have a wide application in everyday life.

Science is a core subject in the National Curriculum. The fundamental skills, knowledge and concepts of the subjects are currently set out in "Science in the National Curriculum" where they are categorised into four attainment targets.

1. Scientific enquiry, which is taught through contexts taken from;
2. Life processes and Living things
3. Materials and their properties
4. Physical processes

Reception classes are taught the required science elements of the foundation stage document through cross curricular themes.

(The Early Years curriculum was amended in 2012 so all planning is structured under their new curriculum.)

In line with the New Curriculum, science teaching across the school will change in terms of topics taught and expected skills to be mastered at each stage.

The school will timetable a bi- annual Science Week that will include visits, investigations, presentations and performances. Each class will also present examples of topic based scientific enquiry.

Planning and delivery

Planning in science is a process in which all teachers are involved to ensure that the school delivers full coverage of the current National Curriculum and Foundation stage. The whole school yearly science plan is based on the New National Curriculum Science programme of study. We use adapted Hamilton plans as a vehicle to deliver the Science Curriculum and ensure that the programme of study is covered. It ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify the model plans to suit their own teaching, the use of any support staff and the resources available.

- KS2, KS1 and Foundation stage teachers should be teaching science for a minimum of two hours each week, or equivalent pro rata.
- Teachers should try to make cross-curricular links wherever possible.
- In KS2 a minimum of 50% of lessons should include practical Scientific Investigation.
- In KS 1/ Foundation stage a minimum of one third of lessons in each half term should include practical Scientific Investigation.

The science curriculum is delivered through co-operative group work, individual work, and whole class teaching.

Within this structure there will be: -

- Whole class and group discussions and presentations.
- Demonstrations, explanations and instruction by teachers to groups, individuals and the whole class as well as child-led when possible.
- Practical activities to advance and consolidate knowledge and skills.
- Problem solving and investigation tasks.

ICT in Science

- The children are given the opportunity to research, plan, predict, test and improve their ideas using relevant ICT resources to improve understanding, aid communication and enhance presentation.
- Recently there has been a change of emphasis in Science curriculum and assessment shifting towards more investigative approach to science.

- This involves more tasks involving interpreting and analysing results, which can be supported and developed by the use of I.C.T.
 - I.C.T provides various opportunities to investigate (e.g. virtual experiments, Science Simulations, Concept Cartoons, Digital microscope, the Internet, etc)
 - And to interpret results (e.g. Dataloggers, databases, graphs)
 - Helps to develop more independence and can provide an excellent extension and challenge for more talented pupils, whilst supporting others where necessary.
- **Espresso and Virtual Experiments**
- This is a whole school resource, provided for a substantial subscription to the school.
 - It includes I.C.T. linked science resources, both to aid planning and teaching and in the form of virtual experiments and short video clips to enhance children's learning.

Assessment

Individual children's attainment and progress are recorded by class teachers' and are reviewed annually. These include on going teacher assessments and end of unit scores (KS2), children's subject knowledge and understanding and level of competence and aptitude for scientific investigation.

A written report is provided during the summer term. Reporting in science focuses on each child's :-

- Achievement in knowledge and understanding
- Progress in the ability to investigate scientifically, including understanding of the nature of scientific method.

The formal assessment of Science at the end of KS 1 takes place in accordance with the national statutory requirements.

- The year two staff assess children's level of attainment at the end of the KS1 programme of study. This is a teacher assessment based upon assessment records, observation and work samples.

Management and Development

Co-ordination

Science education throughout the school is lead by the Science Co-ordinator. The role entails updating and monitoring school resources and giving support to colleagues as appropriate. The Science Co-ordinator leads meetings and discussions related to science issues, e.g. Science Week, work scrutiny or inset.

Moderation and Monitoring

We moderate and monitor science as a part of our self-evaluation approach to maintaining standards and supporting staff in their teaching. This is timetabled every half term via serfs.

Resources

- The vast majority of resources are stored centrally in the Finance Room.
- Teachers need to collect their resources as they need them and ensure they return them to where they came from.
- Staff should notify the co-ordinator of any extra resources required, of any breakages or losses that occur and of any new materials, CD ROMs, books, DVDs etc that might prove useful.
- Unsupervised children should not be allowed to collect resources.

Environmental Awareness

At Simmondley we realise the importance of teaching our pupils to care for the environment. The school will continue to recycle waste paper and ink cartridges and promote walking to school through the 'Walk to School' initiative. They are taught the importance of their impact on the environment and have used outside areas for studying plants, rivers and rocks and soils.

Equal Opportunities

We work to ensure that all children have the opportunity to gain scientific knowledge and understanding regardless of gender, race, class, physical or intellectual ability. We will ensure that expectations do not limit pupils' achievements and that assessments do not involve any cultural, social, linguistic or gender bias.

Health and Safety

- The teacher should be clear as to the purpose of the work and ensure that any testing that needs to be carried out complies with the Health and Safety procedures and has been practised prior to the lesson.
- Safety hazards should be pointed out to the children at the beginning of any work.

Review Date

The Simmondley Primary School science policy is to be reviewed annually by the Science co-ordinator

- Approved by Governors June 2015 Signed _____
- Next review July 2016. Signed _____
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