Killingholme Primary School Science Policy

Introduction

This policy document outlines the teaching and learning of Science at Killingholme Primary School. It has been revised with all the teaching staff and agreed by the Governing body on 8th December 2014.

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 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 science will affect their future on a personal, national, and global level.

.

1.2 The aims of science are to enable children to:

- ask and answer scientific questions;
- plan and carry out scientific investigations, using equipment, including computers, correctly;
- know and understand the life processes of living things;
- know and understand the physical processes of materials, electricity, light, sound and natural forces;
- know about the nature of the solar system, including the earth;
- evaluate evidence and present their conclusions clearly and accurately.

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, while at other times we engage the children in an enquiry-based research 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 statistics, graphs, pictures, and photographs. They use ICT in science lessons where 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, for example carrying out a practical experiment and analysing the results.

2.2 We recognise that there are children of widely different scientific abilities in all classes 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 by:

- setting common 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 by ability in the room and setting different tasks for each ability group;
- 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 The school uses the national scheme of work for science as the basis of its curriculum planning.
- 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.

- 3.3 Our medium-term plans, which we have based on the national scheme of work in science, give details of each unit of work for each year group. As we have mixed-age classes, we do our medium-term planning on a two-year rotation cycle. In this way we ensure complete coverage of the National Curriculum without repeating topics.

- 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 of each lesson. The class teacher keeps these individual plans.

- 3.5 We have planned the topics in science so that they build upon 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 scheme of work, so that the children are increasingly challenged as they move up through the school.

- **4 Early Years**

- 4.1 We teach science in reception classes as an integral part of the topic work covered during the year. In the reception class, we relate the scientific aspects of the children's work to the objectives set out in the Early Learning Goals (ELGs) which underpin the curriculum planning for children aged three to five. Science makes a significant contribution to the objective in the ELGs of developing a child's knowledge and understanding of the world, e.g. through investigating what floats and what sinks when placed in water.

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 their English lessons are of a scientific nature. The children develop oral skills in science lessons through discussions (for example of the environment) and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information.

- **5.2 Mathematics**
- Science contributes to the teaching of mathematics in a number of ways. The children use weights and measures and learn to use and apply number. Through working on

investigations they learn to estimate and predict. They develop the skills of accurate observation and recording of events. They use numbers in many of their answers and conclusions.

- **5.3 Information and communication technology (ICT)**
- Children use ICT in science lessons where appropriate. They use it to support their work in science by learning how to find, select, and analyse information. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation.

- **5.4 Personal, social and health education (PSHE)**
- Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject matter lends itself to raising matters of citizenship and social welfare. For example, children study the way people recycle material and how environments are changed for better or worse. Secondly, children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. Science promotes the concept of positive citizenship.

- **5.5 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. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet and how science can contribute to the way 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.

- **5.6 Design Technology**
  Within the curriculum STEM activities explore the interdisciplinary connections between the contributing school subjects science, design & technology and mathematics. Children are encouraged to use and develop the knowledge required to conceive, design, make, build and operate objects.

6 Teaching science to children with special needs

- 6.1 We teach science to all children, whatever their ability. Science forms part of the school curriculum policy to provide a broad and balanced education for all children. We provide learning opportunities that are matched to the needs of children with learning difficulties. Our work in science takes into account the targets set in the children's Individual Education Plans (IEPs).

7 Assessment and recording

- 7.1 We assess children's work in science by making informal judgements as we observe them during lessons and by discussing work with children before, during and after working. On completion of a piece of work, the teacher marks the work and comments as necessary. Specific assessment tasks may be planned by the teacher. At the end of a unit of work s/he makes a summary judgement about the work of each pupil in relation to the National Curriculum expectation of attainment. The teacher records the attainment grades in the children's individual Assertive Mentoring Folders. 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 Health & safety

It is important that all teachers are aware of the responsibility they have regarding health and safety both inside and outside the classroom. Teachers need to take account of both the children's and their own health and safety when involved in Science activities. Simple risk assessment will be carried out for all practical activities.
For further information on health and safety issues and safety points specific to individual science investigations, teachers should refer to the CLEAPSS website or contact them on the School Science Service Helpline 01895 251496 for further advice.

C Eaton
December 2014

This policy is due for review in December 2017