**Science Policy**

School Vision: ‘We care, we share, we learn and achieve.’

Aims and Objectives:

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. Science changes as human understanding and experience changes. It is an ongoing process as our ideas about the world around us are constantly developed and revised. Children learn to ask scientific questions and begin to appreciate the way science will affect their future on a personal, national, and global level while developing a respect for the environment in which they live.

Our Science Policy follows The National Curriculum 2014 for Science Guidelines and aims to ensure that all pupils:

* develop **scientific knowledge and conceptual understanding** through the specific disciplines of biology, chemistry and physics;
* develop understanding of the **nature, processes and methods of science** through different types of science enquiries that help them to ask and answer scientific questions about the world around them;
* are engaged as learners through linking ideas with practical experiences;
* have the opportunity, where possible, to explore science in forms which are relevant and meaningful to them;
* have an ability to reason, predict, think logically and to work systematically and accurately;
* can work scientifically by; observing over time, pattern seeking, identifying, classifying and grouping, carrying out fair tests and collecting, analysing and presenting data.
* are able to work both independently and in co-operation with others;
* are equipped with the scientific knowledge required to understand the **uses and implications** of science, today and for the future;

Philosophy and Ethos

We believe that Science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Through the programmes of study in the National Curriculum for Science, children will acquire and develop these skills throughout their time at Finstall First School.

We believe that Science promotes communication in a specific and precise language involving logical thinking. It allows children to develop ways of finding out for themselves and gives them practice in problem solving.

As their knowledge and understanding increases and they become more proficient in selecting and using scientific equipment, and collating and interpreting results they will become increasingly confident in their growing ability to come to conclusions based on real evidence. Science fosters a healthy curiosity in children about their universe and promotes respect for the living and non-living. It allows children to develop original ideas and a questioning attitude.

In Science, pupils are encouraged to be open-minded and to try and make sense of what they see and find out. The main focus of our approach will be through open-ended activities where we encourage children to become increasingly independent when working scientifically.

Teaching and Learning

We use a variety of teaching and learning styles in Science. Our principal aim is to develop children’s knowledge, skills, and understanding, as well as a sense of enjoyment in Science. This may be achieved through whole-class activities, group activities, paired activities or individual tasks. No matter what form the lesson may take, the objective of the lesson is shared and reviewed with the children.

Activities are challenging, motivating and extend pupils’ learning. 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. Pupils use computing skills in Science lessons where it enhances their learning, they may take part in role-play and discussions and 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 practical activities and tasks that have a ‘real’ purpose to them as these increase enthusiasm and motivation and provide first-hand experience.

Equal Opportunities and Inclusion

At Finstall First School, all children have equal access to the Science curriculum and its associated practical activities. All children, irrespective of gender, learning ability, physical disability, ethnicity and social circumstances, will be supported so that we can maximise the achievement of each individual. Where appropriate, work will be adapted to meet pupils’ needs and, if appropriate, extra support given. More able pupils will be given suitably challenging activities.

Planning, Continuity and Progression

The school uses the National Curriculum Science Programmes of Study as the basis of its planning.

Long-term planning, maps the scientific topics studied by each year group during the key stage. In some cases we combine the scientific study with work in other subject areas, at other times the children study science as a discrete subject.

Year 1 - Plants, Animals Including Humans, Everyday Materials, Seasonal

 Changes

Year 2 - Animals Including Humans, Living Things and their Habitats, Everyday Materials, Plants

Year 3 - Plants, Animals Including Humans, Rocks, Light, Forces and Magnets

Year 4 - Living Things and their Habitats, Animals Including Humans, States of Matter, Sound, Electricity

Medium-term plans in Science, give details of each unit of work for each term. This identifies; learning objectives, science activities, assessment opportunities, the vocabulary to be taught and used, safety issues, how computing skills and technology, or resources should be used etc.

Teachers evaluate each unit of work after completion.

By following these plans in Science we ensure that the children are able to build upon prior learning and that progression is made.

Within each key stage, the school has the flexibility to introduce content earlier or later than set out in the programme of study and may introduce key stage content during an earlier key stage if appropriate to the focus of the topic work. Where this does happen, close liaison with relevant year groups takes place to ensure that there is no overlap of material that is taught.

Meetings within the pyramid take place to ensure that there is continuity and progression between the first schools and middle school.

Cross Curricular Links:

**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 English can be of a scientific nature. The children develop oral skills in Science lessons through discussions and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects, and by recording information or note taking.

**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. They also produce diagrams, charts and graphs using the data from real investigations.

**Computing:**

Children use Computing skills in Science lessons where appropriate. They use it to support their work in Science by learning how to find, select, and analyse information on the Internet and on CD-ROMs. Children use a variety of media, such as data loggers and ipads, to record, collect, present and interpret data and to review, modify and evaluate their work and improve its presentation.

**Personal, Social and Health Education (PSHE) and Citizenship**

Science makes a significant contribution to the teaching of Personal, Social and Health Education. 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.

**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.

Assessment and Recording:

Children’s work in Science is assessed continuously by making informal judgements during lessons, using a variety of methods:

* Observing children at work; individually, in pairs, in a group or as a class.
* Questioning, talking and listening to children.
* Through written work, materials, investigations produced by the children.

As and when appropriate, relevant comments, and suggestions for the next steps in learning will be recorded in children’s books.

More formal assessments may be carried out at the end of each half term’s topic if deemed appropriate by the class teachers.

Children’s attainment within the topic area is then recorded on the school’s assessment system, Target Tracker, at the end of each unit of work.

Throughout the year, teachers will assess the children on their ability when ‘working scientifically’ and update the Target Tracker system accordingly.

At the end of the school year, the children’s progress will be reviewed on the system and an overall attainment for each individual child will be judged.

Children’s progress is continually monitored and tracked through their time at Finstall First School.

Health and Safety

Where appropriate, risk assessments are completed and reminders are given to children about potential hazards and care of the equipment they are using.

Any trips will be planned with due regard to the school policy on taking children on outings. Risk assessments are always completed and LA guidance adhered to concerning more hazardous visits such as residentials and those trips involving farms etc.

Role of the Science Co-ordinator

The role of the Science Co-ordinator is:

* To co-ordinate the teaching of Science within the school.
* To monitor the use of the policy and schemes of work.
* To ensure continuity and progression of the teaching and learning of Science across Key Stage 1 and 2.
* To order and maintain resources.
* To manage the Science budget.
* To monitor Science through classroom observations, interviewing pupils, the scrutiny of work in books and the analysis of planning and performance data.
* To monitor the school’s tracking system ensuring that levels are of the expected standards.

Reviewed September 2018

L Davis