

Hillstone Primary School Science Policy 2016-17

1. Our rationale for teaching science.

Children should have the opportunity to develop the understanding of the world in which they live in. Science at Hillstone School is about developing children's ideas and ways of working that enable them to make sense of the world in which they live in through investigating with independence, resilience and enjoyment.

We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability. Our aims in teaching science include the following.

- Preparing our children for life in an increasingly scientific and technological world.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's instinctive curiosity to learn, and drawing on such curiosity in order to plan meaningful and enjoyable science lessons.
- Use growing food as a unifying tool which brings together all aspects of school life, from the curriculum to the canteen.
- Fostering concern about, and active care for, our environment.

Attitudes

- Encouraging the development of positive and resilient attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- To promote an interest in discovery.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

- Giving our children an understanding of scientific processes.
- Helping our children to acquire practical scientific skills.
- Developing the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Developing the use of scientific language, recording and techniques.
- Developing the use of computing in investigating and recording.
- Enabling our children to become effective communicators of scientific ideas, facts and data.

- Enabling our children to develop their manipulative skills and use of tools available to them within the subject.
- Developing gardening skills where appropriate within the curriculum, then extended to opportunities within out of hours learning.

2. Our teaching aims

- Teaching science in ways that are imaginative, purposeful, well managed and enjoyable.
- Giving clear and accurate teacher explanations, offering skilful questioning and seeking opportunities for AFL.
- Offering ample opportunity for practical investigation and enquiry.
- Making links between science and other subjects, and using ICT in particular to enhance the teaching and learning of the subject.

3. How science is structured through the school

Children at Hillstone Primary School learn through a thematic curriculum, with the teaching and learning of science being based on investigation, observation and application.

Children in the foundation stage are taught the science elements of the foundation stage document through the Early-Learning Curriculum: Knowledge and Understanding of the World.

Children from years 1-6 are taught Science within the 'Science and Technology' based topics. Links to other areas of the curriculum that enhance their understanding of science are identified and incorporated into planning. Each topic is taught as a block of work each half term. As before, each topic is revisited as the children progress through the school, allowing the children to consolidate prior learning and aid progression. The curriculum overviews are available on the shared file, or can be found with the relevant year group teachers. Plans are monitored by the science co-ordinator on a termly basis, and support given where required.

In addition to the knowledge and understanding aspects of the National Curriculum, emphasis needs to be put on scientific investigation and enquiry, including the correct use and care of scientific apparatus. When planning the learning experiences, the pupils' previous experiences and present understanding should be taken into account.

We use computing widely in science. Children are given the opportunity to practise science skills and enhance their presentation using carefully-chosen software. ICT is promoted as a good tool for enquiry work, including use of microscopes, interactive white-boards, digital thermometers, digital cameras and video recorders, web cameras and data logging systems. The school's shared system has a science folder within which resources and planning is shared. The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.

Teachers are encouraged to actively teach science skills, and reinforce learning with selected enquiry stimulations. We encourage children to ask and answer their own questions as far as practical. Children should complete at least two full enquiries a term as far as a unit allows, taking increasing responsibility for their planning, carrying them out and recording/interpreting results as they move up the school.

We develop science informally through science out of hours – gardening club, science club (year 6) and an annual science fair.

Our Food For Life partnership underpins the our healthy eating ethos. Children in years 1 and 3 grow in our allotment and gardening club maintain (with support from a volunteer parent.) The food is harvested and used by the chef. A developing link is also growing with Southfields Farm.

4. Assessment and recording in science

We use assessment to inform and develop our teaching.

- Within the classroom, topics commonly begin with an assessment of what children already know. Objectives for the lesson may or may not be shared with the children depending upon the success criteria of the lesson. For instance, if a the children are conducting an enquiry, the success criteria may act as the stepping stones or instructions for an investigation gearing towards children successfully reaching an initially unknown objective
- Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve on a short term basis when assessing their understanding against the learning target of a lesson. Written feedback given after a science lesson always relates back to the science learning target. Any 'pink for thinks' set to consolidate or extend learning will always link back to the relevant science target of the lesson.
- In the foundation stage, science is recorded within knowledge and understanding of the world. Work is recorded in A4 'Learning Journals' in Key Stage 1 and Key Stage 2.
- The school science coordinator monitors progress through the school with the recently introduced science assessment procedure. Each child is assessed at the end of a unit against the skills ladders for the relevant unit on 'Learning Ladders.' Such assessment determines whether a child is working towards, at or beyond expected level for their age. The system allows every child in the school to be tracked for the subject, and also generates a trajectory. Using this system, children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.
- As well as assessing the children's understanding of a topic, children's enquiry skills are also monitored. Children are assessed against the investigative skills ladders in their ability to investigate, observe and apply science across the curriculum.

- Year 2 and year 6 teacher assess against the Interim Framework 2016-17, with pupil outcomes measured as working towards, working at expected or working at greater depth.
- Reports to parents are written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

5. Safety

Children should be taught the correct and safe use of equipment and the carrying out of simple safety procedures as an intrinsic part of their science lessons. A risk assessment should be carried out in line with school policy in regards to any school trips or experiments out of school grounds. Safety goggles are available in the KS2 stock cupboard. The Association for Science Education document 'Be Safe' is available for consultation in each Key Stage. These documents can also be found in the KS2 stock cupboard.

Review

This science policy will be reviewed by the science subject leader annually.

H.Sheehan November 2016