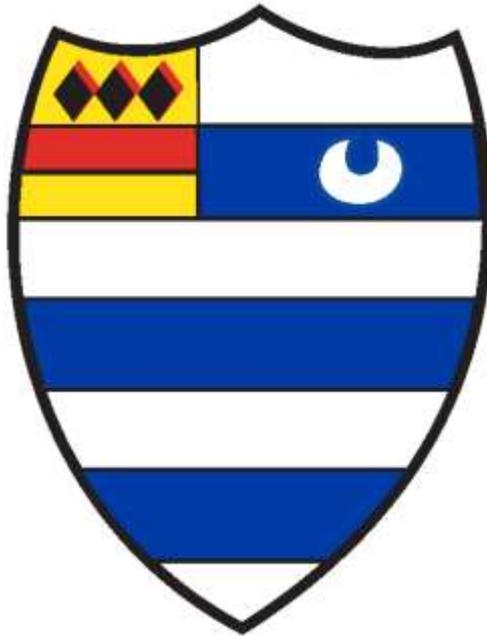


Stanford Junior and Infant School



SCIENCE POLICY

*“Living Together,
Learning Together”*

Approved by Policy committee:

January 2018

Last Review:

July 2021

Date of next Review:

January 2024

Stanford Infant and Junior School understands the need for all pupils to develop their Scientific ability as an essential component of all subjects and as a subject in its own right. A good understanding of scientific knowledge and conceptual understanding helps to support pupils work across the curriculum.

Intent

At Stanford Infant and Junior School we believe that a high quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes.

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, as well as using and applying process skills. The staffs at Stanford Infant and Junior School insure that all children are exposed to high quality teaching and learning experiences, which allow children to explore their outdoor environment and locality, thus developing their scientific enquiry and investigative skills. They are immersed in scientific vocabulary, which aids children's knowledge and understanding not only of the topic they are studying, but of the world around them. We intend to provide all children regardless of ethnic origin, gender, class, aptitude or disability, with a broad and balanced science curriculum.

Implementation

In ensuring high standards of teaching and learning in science, we implement a curriculum that is progressive throughout the whole school.

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of, 'The National Curriculum programmes of study for Science 2014' and, 'Understanding of the World' in the Early Years Foundation Stage. Science teaching at School Stanford Infant and Junior involves adapting and extending the curriculum to match all pupils' needs. Where possible, Science is linked to class themes. Science is taught as discrete units to ensure coverage. Due to one form year groups in our school, Science units are taught on a year rolling programme. This ensures progression between year groups and guarantees topics are covered. Teachers plan to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.

1 Aims

1.1 The aims of science are to enable children to:

- 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 answer scientific questions about the world around them
- be equipped with the scientific knowledge required to understand the uses and implications of science, today and for the future.

2 Teaching and learning style

2.1 At Stanford School 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, researching a local environmental problem or carrying out a practical experiment and analysing the results.

2.2 As we have one/two year groups in each class, we recognise that there are children of widely different scientific abilities. 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
- Utilising classroom assistants to support the work of individual children or groups of children.

3. Science curriculum planning

3.1 The school uses various different schemes of work for science as the basis of its curriculum planning. This has been adapted to the local circumstances of the school in that we make use of the local environment in our fieldwork.

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. In some cases we combine the scientific study with work in other subject areas, especially at Key Stage 1; at other times the children study science as a discrete subject.

3.3 Our medium-term plans, give details of each unit of work for each term. The Science Co-ordinator/Head Teacher reviews these plans.

- 3.4 The class teacher is responsible for writing the weekly plans for each lesson (short-term plans). These plans list the specific learning objectives of each lesson. The class teacher keeps these individual plans; they are shared with the Teaching Assistants as necessary. The Head Teacher also monitors them.
- 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 Foundation Stage

- 4.1 We teach science to our reception pupils as an integral part of the topic work covered during the year. As the reception class is part of the Foundation Stage of the National Curriculum, we relate the scientific aspects of the children's work to the objectives set out in the Understanding the World area of learning, which underpins the curriculum planning for children aged three to five. Science makes a significant contribution to this objective by developing the child's natural curiosity in the world around them for example; 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 Literacy are of a scientific nature. The children develop oral skills in science lessons through discussions (for example on 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 on the Internet. Children use ICT to record, present and interpret data and to review, modify and evaluate their work and improve its presentation. Digital microscopes, cameras, video recorders and data loggers are available for use in each class.

5.4 Personal, social and health education (PSHE) and citizenship

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. They organize campaigns on matters of concern to them, such as helping the poor or homeless (Christmas Box Appeal, Red Nose Day). 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. Pupils have an eco-group which examines how best pupils may make a difference within their school when considering recycling materials and conserving energy effectively.

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.

6 Teaching science to children with additional 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 Additional Educational Needs including those who are gifted and talented. Our work in science takes into account the targets set in the children's Education Support Plans. We follow whole school procedures for children with special needs and disabilities and follow the DSEN Code of Practise 2014 (see separate policy). Mrs. E. Hill, is the named Inclusion manager and all concerns are discussed with her.

7 Assessment and recording

7.1 We assess children's work in science by making informal judgements as we observe them during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary. 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 attainment descriptors. Each child carries out his/her own self-assessment linked to the National Curriculum attainment descriptors at the end of each unit. These also aid and inform future planning.

7.2 The Class Teachers make an assessment of each child's work in science at the end of each topic completed with mini tests. The attainment reported is a teacher assessment based upon the results of topic based tests, observations of individual children, response to tasks and questioning. This evidence is collected throughout the year enabling the teachers to make a sound judgement for each child. These are recorded on SPTO.

8 Resources

- 8.1** We have sufficient resources for all science teaching units in the school. We keep these in the resource room grouped under chemistry, Physics and Biology.
- 8.2** The school has a nature area, including a pond area and various outdoor learning areas to aid Science lessons. These can be used to set up more long-term experiments, which can be left undisturbed. The whole school environment is used to maximum potential in order to support the delivery of the science curriculum.

9 Monitoring and review

- 9.1** It is the responsibility of the Science Co-ordinator to monitor the standards of children's work and the Head Teacher's role to monitor and evaluate the quality of teaching in science. The Co-ordinator is also responsible for supporting colleagues in the teaching of science, for being informed about current developments in the subject and for providing a strategic lead and direction for the subject in the school. The co-ordinator also reviews samples of children's work.

10 Health and Safety

- 10.1** All off site activities will require the class teacher to perform a risk assessment
The School Policy for Health and Safety will be integrated into science teaching Pupils will be taught to use scientific equipment safely when using it during practical activities. Class Teachers and Teaching Assistants will check equipment regularly and report any damage, taking defective equipment out of action. A simple risk assessment will be carried out for all practical activities any perceived hazards will be reported to the Head who will determine the appropriateness of said activity.
- 10.2** All staff are aware of pupils with allergies. Any activity which would potential bring a child into contact with an allergen is risk assessed and measures are put in place to ensure no child is put at any risk.
- 10.3** Covid-19 - Home-Learning
Any children, who are forced to learn from home during the Covid19 pandemic, be it because of personal isolation or any form of lockdown, will receive a catered plan of home learning. Each remote science lesson will be planned and well-sequenced to the curriculum so that knowledge and skills are built incrementally. Each programme of science will be of equivalent length to the core teaching pupils would receive in school and will ideally include daily contact with teachers. At Laceby Stanford, we know what effective teaching practice looks like in a classroom setting, while these same practices will often be more difficult to maintain when teaching remotely we will endeavour to constantly provide pupils with different ways of explaining concepts or identifying any likely misconceptions in advance.
To support this, we will deploy a variety of learning approaches and activities to support children during their remote learning, using approaches such as;

Use of Teams, to communicate and deliver learning. Tasks deployed that revisit prior learning and consolidate new knowledge, supported by using the assigned knowledge organisers which all children will have access to. Voiceovers of teacher explanations and/or modelling (delivered by videos or Oak Academy) delivered at least once a week to guide through a sequence of learning. Further online links and resources will be delivered directly as

communication with pupils allows for assessing any gaps which require scaffolding. Pupil practice examples will be collected and learning checks (through teams) will allow for further deployment of any workbook support packs required.

11. Equal Opportunities

11.1 At Stanford School the curriculum for Science will develop enjoyment of and commitment to stimulating the best possible progress and the highest attainment for all our pupils irrespective of social background, culture, race, gender, differences in ability and disabilities. All of our pupils have a secured entitlement to participate in the Science Curriculum and our teaching approaches ensure the avoidance of stereotyping when planning work or organising groups. All the teaching staff agree that when using reference materials, they should reflect social and cultural diversity and provide positive images of race, gender and disability.

12 Prevent Duty Statement

12.1 On 1 July 2015 the Prevent duty (section 26) of The Counter-Terrorism and Security Act 2015 came into force. This duty places the responsibility on local authorities and schools to have due regard to the need to prevent people from being drawn into terrorism.

12.2 Stanford Junior and Infants School is fully committed to safeguarding and promoting the welfare of all its pupils. As a school we recognise that safeguarding against radicalisation is as important as safeguarding against any other vulnerability.

12.3 All staff are expected to uphold and promote the fundamental principles of British values, including democracy, the rule of law, individual liberty and mutual respect, and tolerance of those with different faiths and beliefs. We believe that children should be given the opportunity to explore diversity and understand Britain as a multi-cultural society; everyone should be treated with respect whatever their race, gender, sexuality, religious belief, special need, or disability.

12.4 As part of our commitment to safeguarding and child protection we fully support the government's Prevent Strategy and endeavour to uphold its principles through the teaching in Foundation Stage

13 FGM

FEMAL CIRCUMCISION & CUTTING

13.1 It has been estimated that over 20,000 girls under the age of 15 are at risk of FGM in the UK each year, and that 66,000 women in the UK are living with the consequences of FGM. Female genital mutilation (FGM) is a growing cause of concern in schools.

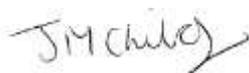
13.2 FGM is child abuse and a form of violence against women and girls, and therefore it is dealt with as part of existing child and adult safeguarding/protection structures, policies and procedures. It is illegal in the UK to subject a child to female genital mutilation (FGM) or to take a child abroad to undergo the procedure - Female Genital Mutilation Act 2003. Despite the harm it causes, FGM practising communities consider it normal to protect their cultural identity. The age at which girls are subject to FGM varies greatly from shortly after birth to any time up to adulthood. The average age is 10 to 12 years.

13.3 Any female child born to a woman or has a sister who has been subjected to FGM will be considered to be at risk, as much as other female children in the extended family. Any information or concern that a child is at risk of FGM will result in a child protection referral to Multi Agency Support Hub.

The Science Co-ordinator is Mrs Tracy Amos

Signed By

Chair of Governors:



Date: July 2021 by email

Headteacher:



Date: July 2021 by email

Review Date	Amendments	Approved Date
March 2016	Updated Policy	March 2016
January 2018	Updated Policy Format and added FGM Section	January 2018
July 2021	Policy Review	July 2021 by email