The Crescent Primary School Science Policy

Aims

Science teaches an understanding of and develops a sense of excitement and curiosity about natural phenomena. It aims to stimulate children to find out why things happen in the way they do and encourages them to understand how science can be used to explain what is occurring, predict how things behave and analyse causes. It teaches children to work scientifically to stimulate creative thought and understand the nature, processes and methods of science. Children learn to ask scientific questions and begin to appreciate the way in which science will affect the future on a personal, national, and global level. As a curriculum area it is designed to help give pupils the knowledge, skills and understanding they need to lead confident, healthy, independent lives and to become informed, active and responsible citizens.
(Articles 3, 6, 12, 14, 24, 28, 29 – from UNICEF's Childrens' Rights)

The twin objectives of teaching science are to enable children to:

- **Work scientifically** so as to develop an understanding of the nature, processes and methods of science, through different types of scientific enquiry that help them to ask and answer scientific questions about the world around them.
- **Develop scientific knowledge and conceptual understanding** in the following areas:

  -Biology: including plants, animals, habitats, evolution and inheritance.

  -Chemistry: including everyday materials and their uses, rocks, states of matter and the properties and changes of materials.

-Physics: including seasonal changes, light, forces, magnets, sound, electricity and earth and space.

Teaching Science

To provide adequate time for developing scientific knowledge, skills and understanding, each teacher will provide weekly Science lessons. Ideally these will be at least 1 hour long lessons in KS1 and 2 hours in KS2. At Foundation Stage: we teach science in reception classes as an integral part of the topic work covered during the year. 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.

It is important that the teacher identifies the most appropriate teaching strategy to suit the purpose of the particular learning situation and should use their flair, enthusiasm and professional judgement to identify the most sensible, enjoyable and safe methods for the work being conducted.

There are a variety of ways in which the teaching may be effective and our school aims to encourage learning through investigation, with an emphasis on first-hand experience. Science lessons have no imposed formal structure but should typically contain some of the following elements:

- *Discussion:* what they already know from experience, what they have learnt so far, what they will be finding out next. Where necessary, mind mapping and question boards are appropriate methods for recording these discussions if desired.

- *Teaching:* directly to the whole class or through group or individual work.

- *Practical tasks or investigative work:* working within groups or individually, practising scientific skills, finding out answers, being encouraged to think scientifically. Where groups are required, the teacher should consider which type of grouping will best suit the needs of the

children and which roles the children will take on in the investigation (this will be different every lesson).

- *Recording:* writing about what they have found out, drawing charts and tables and diagrams, using the computer and other media to record what they have done or found out about. Pyramid recording method used in investigations.

- *Communicating:* sharing ideas, predictions, knowledge, and what they have found out with each other, the teacher, other classes and adults as appropriate.

School Overview of Science

The progression of skills for Science has been formulated with the use of Hampshire's Key Ideas document and the National Curriculum. A copy of the progression of skills, which clearly sets out the Science curriculum taught at the Crescent, can be found on our school network under Subject Leader/Science.

As well as teaching the knowledge required for children to access different scientific concepts, children will also be taught how to work 'as a scientist' and learn the skills needed for any investigation or science work.

Our objectives for 'Working Scientifically' can also be found on our school system.

Marking, Feedback and Assessment

It is the responsibility of the class teacher to assess the children's ability using INSIGHT tracking.

All work is marked in line with the school's marking policy using green and pink highlighters to indicate good work, and ideas that children need to further think about. It is not expected for teachers to make written comments on each piece of children's work.

3L grid's are used to assist with memory retention and assess understanding. Concept cartoons are also used to ascertain children's understanding. A hot task at the end of every unit is completed.

Management of Science

The Science leader should be enthusiastic about Science and demonstrate good practice. The Science Leader is also responsible for providing an overview of the subject across the school to inform staff planning and to offer advice in which the curriculum can be delivered in an effective and engaging way. They should have an up-to-date knowledge of the subject requirements and ensure that these are met across the school, as well as having an overview of assessment. The Science Leader should also monitor planning, Science work and the delivery of lessons, and use monitoring to inform further areas for development.

Individual teachers are responsible for the day to day planning, delivery and assessment of the Science curriculum.

The contribution of science to teaching in other curriculum areas

English

Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. The children develop oral skills in science lessons through discussions, learning to justify their own views and clarifying their ideas. They develop their writing and reading skills through research and writing reports and projects and by recording information.

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 and to represent results in different ways including graphs. They also develop the skills of accurate observation and recording of events.

Computing

Children use technology in science lessons where appropriate to support their learning. They find, select, and analyse information on the internet. Children use technology to collect, record, present and interpret data and to review, modify and evaluate their work and improve its presentation. The use of Interactive White Boards support learning and teaching, providing simulations, assessments and additional stimuli in the form of games, video clips and access to expert knowledge on the Internet.

Personal, social and health education (PSHE) and citizenship

Science makes a significant contribution to the teaching of personal, social and health education. The children through science learn about health issues and the importance of diet and exercise. They will also develop a sense of responsibility in following safety procedures and in caring for animals and the environment. Finally science promotes the concept of positive citizenship. Children benefit from the nature of the subject in that it gives them opportunities to take part in debates and discussions. They can organise campaigns on matters of concern to them, such as helping the poor or homeless or collecting for animal welfare projects.

Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life. 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 and debate social issues and to develop a sense of self and a respect for others opinions. 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 these differences they learn to appreciate and value individuals' contributions to the world of science.

Promoting British Values

The children will be aware of the significant personalities, events and turning points in British scientific history. They will be conversant with examples of British creativity and culture through science and the influences surrounding scientific breakthroughs. Children will also be taught to respect the beliefs and views of others.

The children will be given opportunities to practise the skills and attitudes required for them to participate fully in a democractic society through looking at local, national and world events and debating global issues, for example pollution, environmental issues and endangered species and habitats. They will be encouraged to become active citizens and use their voice to change the world around them.

Teaching science to children with special needs

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 Personalised Learning Plans (PLPs).

Greater Depth in Science

Those children who have the capability to achieve a greater depth in Science will be provided with the opportunity to develop their understanding and apply their skills in a variety of situations in order to challenge and extend their learning.

Health and Safety

Safe practice must be promoted at all times. The Hampshire county council "Safety in Science" has been adopted as part of the school's safety policy in Science. This and the hazard cards for science activities are held centrally to be referred to by teachers. The children are also made aware of any health and safety aspects during lessons as this is a vital part of their learning.

Equality

As a staff, we endeavour to maintain an awareness of and to provide for equal opportunities for all our pupils in science. We aim to take into account cultural background, gender and Special Needs, both in our teaching attitudes and in the materials we use with our pupils. Attainment is monitored to ensure that no groups are under achieving. We teach science to all children, whatever their ability. It is part of the school curriculum policy to provide a broad and balanced education to all children. Appropriate provision will be made for the S.E.N.D and the more able pupils and there will be equal access for all children regardless of gender, race and ability. Positive attitudes towards science are encouraged, so that all pupils, regardless of race, gender, ability or special needs, including those for whom English is a second language, develop an enjoyment and confidence with science. The aim is to ensure that everyone makes progress and gains positively from lessons and to plan inclusive lessons. Lessons involving lots of visual, aural and kinaesthetic elements will benefit all pupils including those for whom English is an additional language (EAL). Each year group have the opportunity to learn about influential scientists from different genres, ethnicities and disabilities.

Written by	J Todd, March 2017
Review	September 2017
Review	October 2017 (P Dulay – New Science Leader)
Review	January 2019 (N Silcox, L Waite, B Spencer)
Review	December 2020 N Silcox
Review	December 2021 N Silcox
Review	December 2022 N Silcox
Review	December 2023