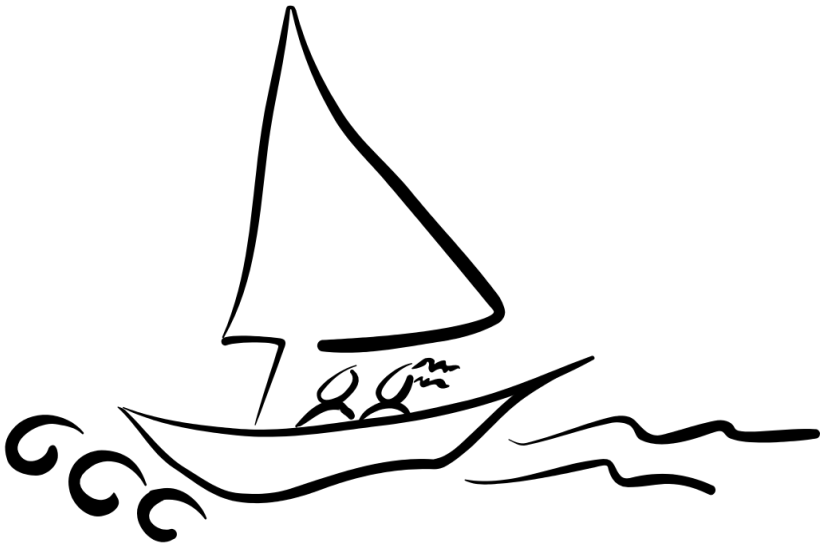
Sheringham Community Primary School and Nursery

Science Policy



" Be all that you can be...."

Policy written by: H West & J Perrem…Date:…September… 2018

Agreed by Governors on:……

Signed:……Governor

Signed:…… Head Teacher

Due for review:……September 2021……

Science Policy

Why Teach Science?
Aims and objectives

At Sheringham Primary School we want children to be able to look at the world through the eyes of a scientist. This means that we want to develop enquiring minds in children, who will, as a result, ask questions about the world in which they live and also to make simple predictions about what would happen if…

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 teaching 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.

1.3. Principles of good Science
Children's curiosity is encourages and valued; they are excited and enthusiastic when learning in science.
Science is practical and hands on and children enjoy learning through exploration and questioning; they have the opportunity to use good quality resources
Enrichment visits/school vists/workshops happen regularly
Progression of science skills is evident and taught throughout the school
Children confidently use accurate science vocabulary in context
Teachers use different assessment for learning strategies during science lessons, including co-operative learning
All pupils are actively engaged in science enquiry; using a variety of strategies, independently making decisions and answering their own questions.

2 Teaching and learning style

2.1 We use a variety of teaching and learning styles, including co-operative learning, 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 use ICT in science lessons where it enhances their learning. They take part in 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 such as the use of single-use plastics or 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 through the use of extension or high order thinking questions (linked to Blooms Taxonomy). (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 teaching assistants to support the work of individual children or groups of children.
By teaching children in mixed ability groups and by making links between across subjects

Through the science work completed in school, we want to encourage:

Enjoyment
Curiosity
Perseverance
Responsibility
Imagination
Co-operation with others, including adults
Respect for the world around them
Awareness of the need for health and safety in all situations

3 Science curriculum planning

The school uses the National Curriculum Programmes of Study, as the basis of its curriculum planning. Staff use a variety of resource materials which are available for each year group. We also take part in special annual events including Norwich Science Festival (October) and British Science Week (March).

We make use of the local environment in our fieldwork and we choose a locality where the physical environment differs from that which predominates in our immediate surroundings.

We carry out our curriculum planning in science in three phases (long-term, medium-term and short-term) as directed by the National Curriculum Programme of Study. 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. This is mostly at Key Stage 2.

Over the academic year, it is aimed for Key Stage 1 to carry out 1.5 hours of Science lessons per week. At Key Stage 2, this is increased to 2.5 hours.

3.3 Our medium-term plans are based on the national programmes of study in science. They give details of each unit of work for each term.

3.4 The staff in each year group responsible for developing their own specific lesson plans which fit their particular class of children. These plans will list the specific learning objectives of each lesson.

3.5 Topics in science are taught 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 in reception classes 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 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.
At this phase children are:
Developing the crucial knowledge, skills and understanding that help them to make sense of the world;
Involved in activities based on first-hand experiences that encourage exploration, observation, problem-solving, prediction, critical thinking, decision-making and discussion
Experiencing a wide range of activities, indoors and outdoors, including adult-focussed, child-initiated and independent play;
Stimulated, interested and curious;
Observed by adults and learning is recorded in a variety of ways.

Key Stage 1 & 2
At this phase children are:
Learning through a science process skill-based approach;
Undertaking practical enquiries;
Working collaboratively and independently;
Developing high quality, purposeful talk for science;
Recording findings in a variety of stimulating and purposeful ways;
Building upon prior science learning, both skill and knowledge based;
Beginning to think about the positive and negative effects of scientific and technological developments on the environment and in other contexts;
Evaluating their own science learning;
Using ICT to support and extend their learning in science;
Making links across subjects;
Experiencing a variety of teaching styles and strategies that promote positive science learning;
Learning that science promotes the concept of positive citizenship;
Learning through science, to raise social and moral questions, to understand differences between people and to have respect for others including those with disabilities.

5 How teaching of science benefits other curriculum areas and where possible links are made:

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 the Literacy Hour 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 and strengthen their data handing skills. 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 and on CD-ROMs. 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) 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. 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.

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 personalised to meet the needs of children

with additional learning needs. Our work in science takes into account the outcomes set in the children's MP3 (my provision, my plan, my progress).

Through personalisation, including giving additional time, adult support where necessary, alternative ways to access with amended equipment. Different levels of questioning/task to be completed, children of all abilities access the science taught.

PROMOTING SCIENCE
School visits for science are organised where possible in line with the current unit of work, to enhance and extend learning.
Local resources, such as scientists from industry are used to support units of work where possible.
Each year the school participates in National Science week.
Science displays in classrooms and around the school will celebrate children's work and evidence progression.

7 Assessment and recording

7.1 Assessment is carried out in line with the school policy.
We assess children's work in science by making informal judgements as we observe them during lessons and give feedback throughout. 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 standards. The teacher records this on Pupil Asset.

7.2 Children may take the national tests in science at the end of Key Stage 2 as part of the National Cohort Sample. Teachers make an assessment of the children's work in science at the end of Key Stage 1.

7.3 The science subject leaders keep samples of children's work in a portfolio and use these to demonstrate what the expected level of achievement is in science for each age group in the school.

8 Resources

8.1 We aim to provide sufficient resources for all science teaching units in the school. The library contains a good supply of science topic books and there is a list of relevant websites on the school website, as well as a range of computer software to support children's individual research. We are members of the Association of Science Education (ASE).

We have also established links with the local High School and run science workshops to aid the transition into Year 7.

9 Monitoring and review

It is the responsibility of the science subject leaders to monitor the standards of children's work and the quality of teaching in science in line with school policy. The science subject leader are 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. Annual monitoring of samples of work from every class in the school enables the progression in science teaching and learning to be seen. Feedback is given to the Year group with any action points indicated immediately following this.