ST PETER'S
CHURCH of ENGLAND
PRIMARY SCHOOL

Science Policy

Date of policy – April 2014

Science Policy

Mission Statement

In this distinctive, inclusive, Christian school, where everyone matters, we nurture and develop opportunities for life long learning. We come together in a vibrant, creative community that also develops our spiritual and cultural lives through:

- Love
- Trust
- Care
- Respect
- Joy

ensuring that everyone successfully achieves their full potential.

Aims and objectives

Science teaches the understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way that 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.

At St Peter's CE Primary School science is taught where possible through our Creative Curriculum or taught as a separate subject to ensure all the relevant skills are covered. We aim to:

- Ask and answer scientific questions;
- Plan and carry out scientific investigations (fair tests), 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 conclusions clearly and accurately.

Teaching and learning style

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills and understanding and we do this through a mixture of whole-class teaching and engage children in enquiry based research activities. We encourage children to ask, as well as answer, scientific questions. They are provided with the opportunity to use a variety of data including statistics, graphs, pictures and photography. Children are also encouraging to use ICT in science lessons where it enhances their learning. They engage in a wide variety of practical enquiries that involve the children making predictions followed by fair testing a variety of scientific questions and reporting on their findings after analysing the results.

We recognise that there are children of widely different scientific abilities in all classes and we ensure that they are provided with suitable learning opportunities matching the challenge of the task to the ability of the child. We achieve this through a range of strategies:

- setting common tasks that 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)
- for the most part children are sat in mixed ability groupings, providing a range of challenge through the provision of different resources, e.g. more or less variables to consider in a fair test.
- Providing resources of different complexity, matched to the ability of the child;
- Using classroom assistants to support the work of individual children or groups of children.

Science Curriculum Planning

Science is a core subject in the National Curriculum *(for England, Wales and Northern Ireland).*
In England there are 4 areas of study incorporated into the skills to be covered. These are:
Scientific enquiry;
Biology: Life and living processes;
Chemistry: Materials and their properties;
Physics: Physical processes.

Our role is to teach scientific enquiry through the contexts of the three main content areas.

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

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of *(National Curriculum Science and science in the Foundation stage)*. Science teaching in our school is about excellence and enjoyment. We adapt and extend the curriculum to match the unique circumstances of our school.

The school has developed its own Creative Curriculum with topics planned either each term or each half term. Where possible science is taught through the creative curriculum or taught discretely with the science skills to be taught do not link with the topic being covered. We follow the National Curriculum for Science with the skills being covered, after whole-staff discussions, over a two year cycle. This ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify the plans to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available.

We have modified the areas of study to suit our Creative Curriculum:
Generally, one unit may be taught in each half term or two units in a full term.
Some units may have been moved between years, or amalgamated, where appropriate.
Biology strand on Life and Living Processes are commonly taught in the spring and summer terms.
Because of mixed-age classes in the school, some areas of study may be taught out of their year group.
Some areas of study may be taught in collaboration with outside agencies such as the Life Education Caravan.

Our Creative Curriculum medium term plans incorporate the relevant science topics and provide details of the skills to be taught for each half term for each Key Stage and plans are modified and adapted to suit the age and abilities of each child. The science Subject Leader reviews these plans in accordance with the school's monitoring and evaluation policy.

Equal opportunities in science

- Science is taught within the guidelines of the school's equal-opportunities policy.
- We ensure that all our children have the opportunity to gain science knowledge and understanding regardless of gender, race, class, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve
- Cultural, social, linguistic or gender bias.
- We aim to teach science in a broad global and historical context, using the widest
- possible perspective and including the contributions of people of many different backgrounds.
- We draw examples from other cultures, recognising that simple technology may be superior to complex solutions.
- We value science as a vehicle for the development of language skills, and we encourage our children to talk constructively about their science experiences.
- In our teaching, science is closely linked with literacy and mathematics.
- We recognise the particular importance of first-hand experience for motivating children with learning difficulties.
- We recognise that science may strongly engage our gifted and talented children, and we aim to challenge and extend them.
- We exploit science's special contribution to children's developing creativity and develop this by asking and encouraging challenging questions and encouraging original thinking.

How does Science link 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. Some of the texts that the children study during Literacy 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 fair testing. They develop their writing skills through writing reports and projects and by recording information.

Maths

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. Data handling is also a major part of recording data in science on graphs, tables and charts.

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.

PSHE

Science makes a significant contribution to the teaching of personal, social and health education. This is mainly in two areas. Firstly, the subject 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 the better or the 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 in science

We assess children's work in science using the assessment procedures as identified in our assessment and monitoring policies. Informal judgments are made as we observe children during lessons. On completion of a piece of work, the teacher marks the work and comments as necessary. At the end of the each area of study taught teachers make a summary judgment about the work of each pupil in relation to the National Curriculum level of attainment. These are then recorded on appropriate assessment sheet and passed to the Subject Leader as part of the monitoring process. These levels are used as the basis for assessing the progress of each child throughout the school.

Children do not take the national tests in science unless we are selected as one of the sample 20%. Teachers make an assessment of the children's science work at the end of each year which is passed to the Subject Leader. We sporadically use practice science tests in Upper Key Stage 2 to assess children's progress.

The science Subject Leader scrutinizes samples of children's work and uses these to demonstrate what the expected level of achievement is in science for each group in the school as part of the monitoring process.

Resources

There are a wide range of resources to support the teaching of all of the science units across the school. We keep most of our equipment in a central store where there is a box of equipment for each area of study. The library contains a good supply of science topic books and a bank of laptops that are shared between two classes to support children's individual research via the internet.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in Science is the responsibility of the science Subject Leader. The work of the Subject Leader also involves supporting colleagues in the teaching of science, being informed about current developments in the subject, and providing a strategic lead and direction for the subject in the school. The science Subject Leader gives the Headteacher an annual summary report in which s/he evaluates the strengths and weaknesses in the subject and indicates areas for further improvement.

Signed –

Date – April 2014

Policy review date – April 2017