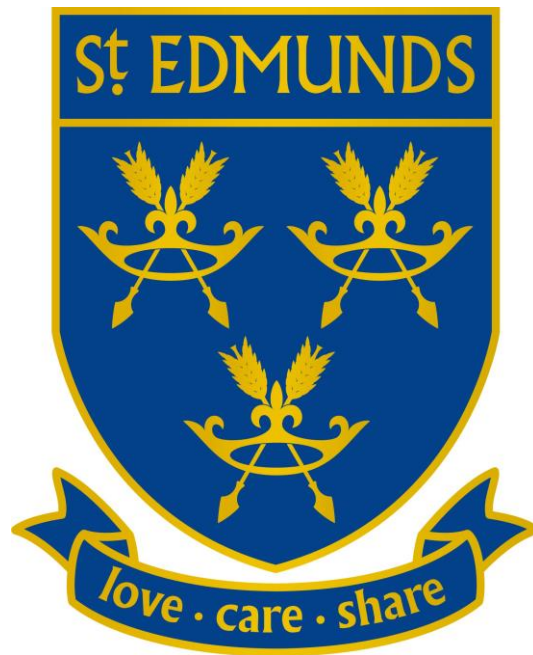


St Edmund's Catholic Primary School



Science Policy

September 2019

St Edmund's Science Policy

MISSION STATEMENT

LOVE - CARE - SHARE

Aims and objectives

These Guidelines have been developed by and for the Staff of St Edmund's Primary School based on the 2014 Curriculum for keys Stage 1 and 2. We believe that science aims to teach children an understanding of natural phenomena and promote curiosity of finding out why things happen in a particular way. Creative thought is stimulated through methods of enquiry and children begin to ask scientific questions, which promotes their investigative skills of how science can affect their day to day lives. It is about exploring and investigating the world about us. This policy reflects the values and philosophies of St. Edmund's Catholic Primary School in relation to the teaching and learning of science. It sets out a framework within which staff can operate, and gives guidance on planning, teaching and assessment.

We aim to engage pupil's interest and enthusiasm for science and where possible it will be taught from an enquiry point of view, maximizing first-hand experience, visual stimuli and hands on practical investigation.

Aims and Purposes

Science is a core curriculum subject. The teaching of science should offer the following opportunities to children:

Knowledge and Understanding

Children should:

- be curious about the things they observe, experiencing and exploring the world around them with all their senses
- use this experience to develop their understanding of key scientific ideas and make links between different phenomena and experiences
- begin to think about models to represent things they cannot directly experience
- try to make sense of phenomena, seeking explanations and thinking critically about claims and ideas

Processes and Skills

Children should:

- acquire and refine practical skills needed to investigate questions safely
- develop skills of predicting, asking questions, hypothesising, planning, fair testing, observing, measuring, recording, evaluating results based on evidence and understanding, drawing conclusions and using these skills in investigative work
- practise mathematical skills in real life contexts
- learn why numerical skills and mathematical skills are useful and helpful in understanding

Values and Attitudes

Children should:

- work with others, listening to their ideas and treating these with respect
- develop respect for evidence and evaluate critically ideas which may or may not fit evidence available
- develop the ability to work in an increasingly independent way
- develop a respect for the environment and living things and for their own health and safety

Teaching and learning style

A principle aim of science within St Edmund's is to develop children's knowledge, skills and understanding. We approach this through a variety of teaching and learning styles within the science lessons. Whole class teaching and enquiry based research allows the children not only to ask questions but also to find out the answers to scientific questions. Various resources are available for the children to explore and manipulate such as graphs, pictures, photographs, models and equipment. Children are encouraged to take part in discussions based around their topic and present their ideas and findings to the rest of the class. In most cases the children take part in 'real' scientific activities which are relevant to their learning and experiences.

Suitable learning opportunities are available to all children and we recognise in St Edmund's the different scientific abilities of all our pupils. We aim to be inclusive through matching the task to the child's ability:

- Tasks which are open ended and have many possible responses

- Setting tasks with increasing levels of difficulty (children can work through these at a level which is appropriate to them)
- Providing resources to support and extend the children
- Utilising teaching assistants to work with groups or individuals.

Some children will require closer supervision and more adult support to allow them to progress whilst more able children will be extended through differentiated activities. By being given enhancing and enriching activities, more able children will be able to progress to a higher level of knowledge and understanding appropriate to their abilities.

Equal Opportunities

It is the responsibility of all teachers to ensure that pupils irrespective of gender, ability, including able and talented children, ethnicity and social circumstance have access to the curriculum and make the greatest progress possible.

Science curriculum planning

The statutory requirements for science in the National Curriculum Programme of Study for science are followed. This provides a teaching framework for years 1 - 6, to provide both subject knowledge and opportunities for scientific inquiry. To this end, at St Edmunds we use the LCP and Collins Connect Snap Science schemes of work for science to support curriculum planning. Our planning is formulated into three phases (long-term, medium-term and short term). The long term plan maps and units studied in each term across both Key Stage 1 and Key Stage 2. The science leader liaises with teaching colleagues to adapt the long term plan where necessary if units need to be changed or combined. In many areas' science is combined with other subject areas including STEAM projects, but it should also be taught as a discrete subject. Planning is the responsibility of the class teacher, and reference should be made in the first instance to the National Curriculum for Key Stages 1 and 2.

Our medium-term plans give details of each unit of work for each half term. This shows an outline of what will be covered each week.

The lesson plans for each science lesson are written by the teacher weekly (short-term plans), specifying the learning objective for each lesson and the activities to be completed.

The science topics have been planned in a way which aims to build upon the child's previous learning. This allows them to progress through the topics developing their depth of understanding and allowing them to become increasingly challenged as they move up through the school.

The contribution of science teaching in other curriculum areas

The new national curriculum allows many of the skills which are taught within a particular area, to be utilised within science and vice versa and we aim to do this wherever possible.

Language and Communication:

Children should:

- Develop language skills through talking about their work and presenting their own ideas using sustained and systematic writing of different kinds
- Use scientific and mathematical language including technical vocabulary and conventions, and draw diagrams and charts to communicate scientific ideas
- Read non-fiction and extract information from sources such as reference information on the internet
- Key words from the topic should be explained, displayed and frequently used. There should also be strong evidence of this vocabulary in planning

Writing skills

At the beginning of every science topic the children discuss together what they already know using their speaking and listening skills. The children are encouraged to communicate what they already know or what they have found out by using key vocabulary or pictures. Their writing skills are also developed by writing down what they have found out and what they would like to find out in the future. They record their observations and investigations.

1. **Mathematics:** Children use their mathematical knowledge to further their understanding of science including collecting, presenting and analysing data
2. **Computing:** Science is integrated to ICT lessons where appropriate. The children use the internet and tablets are often used to allow the pupils to research information and record presentations

3. **PE:** During PE lessons, the pupils learn how and why their bodies change as they exercise. They also learn about the importance of a healthy diet, why we need to exercise regularly and the names of the different bones and muscles in the body

Foundation stage

Science is taught in Reception by incorporating it in various topics. The scientific aspects of the curriculum are related to the Early Learning Goals and Development Matters document. By linking these together the children begin to gain an Understanding of the World around them through investigations and hands on experience.

Time Allocation

Subject teaching is planned so that each year group allocates a percentage teaching time per week for science, in line with national requirements. Each year group has the freedom to allocate blocks of time for science within the half-term, if this suits the context of a particular unit being covered.

Often this time will be on two separate days, but time should be planned flexibly to allow for longer or shorter sessions as appropriate.

We will aim for:

- KS1 Borough suggests 1½ hours
- KS2 Borough suggests 2 hours

Assessment and recording

Assessment is used to:

- provide diagnostic information about pupils
- plan future teaching and learning
- provide summative information to teachers
- provide information for parents

We assess children's work in science by making informal judgements as we observe them during lessons. These individual assessments of children are based on a combination of knowledge and skills. Once a piece of work is completed the teacher marks work and writes a comment where necessary. At the end of each unit the children complete the Rising Stars Test for that particular topic. This test will highlight what progress the child has obtained for this particular topic and is recorded, as part of the teacher assessment, in Scholar Pack and in the science assessment folder. This allows the teacher to monitor the child's progress in science.

Teachers make a judgement of the children's work in science at the end of Key Stage 1 and 2 according to the Government guidelines. The progress of the pupils in science is reported to the parents in the parent's consultations and also in the end of year report. Photographs are a useful way of recording some of the practical investigations.

Monitoring and review

Monitoring of the standards of children's work and of the quality of teaching in science is the responsibility of the class teachers and science subject leader, in order to ensure that the pupils make the best progress possible. Monitoring and evaluation by the science leader may take various forms:

- the assessment of pupils' work and their achievements
- the analysis of teachers planning as seen in short term plans
- discussion amongst groups of staff or the whole staff
- classroom observation
- analysis of SAT results
- analysis of summative assessments

The work of the science 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.

Resources

Resources are stored centrally, according to topic name, in the mezzanine and are renewed and extended every year within the confines of budget allowances.

Teachers are responsible for the care of equipment and this must be returned correctly after use. Any loss or breakage should be reported promptly to the science leader.

All equipment is a shared resource between the year group and it is the responsibility of each teacher that proper care and attention is given to the use and storage of all materials whilst at their disposal.

SAFETY AND CARE OF APPARATUS

CLEAPSS

Health and Safety

Further guidance can be obtained from the school Health and Safety policy and from the Be Safe booklet (fourth edition). This booklet is located in the Conference Room. Class teachers who require further information can ring CLEAPSS directly on 01895-251496 or go on to their website: <http://www.cleapss.org.uk/>. The science leader has the user name and password for St Edmunds.

Space

Children should be allocated adequate space to carry out tasks, either as individuals or as part of a group.

Ventilation

Teachers should ensure adequate ventilation of the working environment.

Hygiene

Children should be encouraged to follow strict hygiene rules.

Updated by Mr Kenny, 2019

To be reviewed by Science Leader - September 2020