

Science Policy

September 2021



CARLTON J & I SCHOOL

SCIENCE POLICY September 2021

What is Science?

Science is developing knowledge and understanding of the world around us through investigation, involving: questioning, measuring, hypothesising, fair testing, communication and recording.

Aims

“Together, we encourage our children to be motivated to learn and to celebrate their achievements.”

- Prepare our children for life in an increasingly scientific and technological world.
- Foster concern about, and actively care for, our environment.
- Help develop and extend our children’s scientific concept of their world.
- 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 scientific enquiries that help our children answer scientific questions about the world around them.
- Equip children with the scientific knowledge required to understand the uses and implications of science, today and for the future
- To provide a curriculum to meet the needs of all pupils.
- . To contribute to the development of the pupils’ key skills in literacy, numeracy and in the use of information and communication technology.

Objectives

a) Understanding key concepts.

Pupils should:

- Develop their understanding of scientific concepts through biology, physics and chemistry.
- Apply their knowledge and understanding of key concepts to new situations with confidence and solve problems independently.

b) Using scientific methods of investigation.

Pupils should:

- Use a variety of approaches to answer relevant scientific questions.
- Work scientifically to understand the nature, processes and methods of science.
- Consider the evidence they have collected through observation over time, noticing patterns, identifying, classifying and grouping, drawing conclusions and offering explanations.

- Use fair and comparative testing;
- Draw conclusions and use scientific language to explain their findings.
- Display information using a range of methods.

c) Appreciating the contribution science makes to society.

Pupils should:

- Become increasingly aware of the technological, social, ethical, environmental and economic implications of science on the way we live.
- Develop informed opinions, drawing on an understanding of science, about social, moral and ethical issues as they arise.

d) Personal Development.

Pupils should:

- Develop an enjoyment of science;
- Develop their sense of curiosity;
- Develop a respect for living things and the environment;
- Show respect for other points of view;
- Work collaboratively and individually;
- Be aware of important aspects of health education which contribute to their well-being.
- Develop powers of reasoning.

e) Contributing to pupils key skills in literacy, numeracy and I.C.T.

Pupils should:

- Write for a range of purposes and audiences.
- Develop their scientific vocabulary and articulate scientific concepts clearly.
- Speak with confidence about their learning and also listen to others.
- Use secondary sources to extract important information to further inform their learning.
- Develop computational and graphical skills in a range of situations;
- Acquire skills of logic and reasoning, for example, in identifying patterns and in establishing relationships.
- Gather, process, store and retrieve information using computers and other hardware.

Skills

- Give our children an understanding of scientific processes.
- Help our children to acquire practical scientific skills.
- Develop the skills of investigation - including observing, measuring, predicting, hypothesising, experimenting, communicating, interpreting, explaining and evaluating.
- Develop the use of scientific language, recording and techniques.
- Develop the use of ICT in investigating and recording.

- Enable our children to become effective communicators of scientific ideas, facts and data.

Scheme

'Working Scientifically' through a constructivist approach to learning. At Carlton, we follow the Kent Scheme of work. Throughout each and every unit of study the emphasis is on the children learning by doing. In accordance with the constructivist theory of learning, the units encourage the teachers to provide activities that will enable the children to test their previously held ideas. In doing so, they will also be encouraged to develop a bank of skills and an understanding of the processes required to be able to do good science. In every unit of work the most suitable aspects of the statutory requirements for Working Scientifically have been selected. Each of these requirements will be thoroughly covered throughout both of the Key Stages

Assessment

Teachers are continually assessing the children's progress through their work outcomes, conversations and response to science stimuli and observations, with verbal responses being of particular importance in KS1. Children's progress is assessed at the end of a unit of work. Assessment in Science is based upon scientific knowledge and understanding, rather than achievement in English or Mathematics. In the Foundation Stage we assess children's knowledge and understanding according to the EYFS Learning and Development Stages.

In KS1 and KS2 we use a range of assessment materials to ensure that children are making appropriate progress, including assessment tasks. Pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study.

Assessment should:

- Be formative and summative
- Be used to inform the teacher for future planning
- Promote continuity and progression
- Form the basis for reporting to parents
- Be based on observation, participation and written outcomes

Links with other subjects

In our topic-based teaching approach, we use cross-curricular links to science wherever we can. Science relates especially well to curriculum subjects such as literacy, mathematics, ICT and design and technology.

Safety in Science

It is important that children are taught the rule of safety in science from a young age so that it becomes integral to their experiments and investigations. Materials and equipment need to be treated with respect and care and we endeavour to make sure all children do this. When carrying out scientific activities, children should treat their classroom as though it is a fully equipped science laboratory. All Science activities must be safe for the children. The Staff are aware of the Health and Safety Policy, and there is guidance in the National Curriculum.

