

Cestria Primary School

Science Policy



To be reviewed annually.

Introduction

This policy outlines the teaching, organisation and management of science taught at Cestria Primary School. The school's policy for science is based on the new primary curriculum, which is statutory from September 2014. The implementation of this policy is the responsibility of all teaching staff.

Teaching Science

At Cestria we believe that the best science teaching fosters and develops pupils' curiosity in the subject whilst also helping them to fulfil their potential. For our pupils to achieve well in science, they need to acquire the necessary scientific knowledge and also be able to enjoy the experience of engaging and purposeful scientific enquiry in order to help them to answer scientific questions about the world around them. At Cestria, our Cestria curriculum is designed in line with National Curriculum guidelines and consequently incorporates the knowledge, skills and understanding required for this subject. Our primary goal is to teach 'new knowledge' which is built upon prior learning and taught through a particular subject specific skill.

The new National Curriculum 2014 states why we teach science in schools: *'A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics...Through building up a body of key foundational knowledge and concepts, pupils should be encouraged to recognise the power of rational explanation and develop a sense of excitement and curiosity about natural phenomena.'*

Coverage

Foundation Stage (Reception):

Children will explore Science through making predictions, using their senses and investigating materials and their properties. Science is taught through the strand of, 'Understanding the World'. Science teaching is also linked to other strands of the EYFS framework for learning 2014.

Teachers and Teaching assistants support children to develop a solid understanding of things occurring around them in their day-to-day lives.

Children are encouraged to be creative and inquisitive as they participate in activities. Children are encouraged to use their natural inquisitiveness, whilst taking part in exploratory play in specific scientific areas as well as areas which link across the EYFS framework.

Key Stage One (Years 1 and 2):

During Key Stage one, pupils observe, explore and ask questions about living things, materials and the world around them. They begin to work together to collect evidence to help them answer questions, find patterns, classify and group objects, research using a variety of sources and become familiar with the concept of a fair test. Children will use reference material to find out about scientific ideas. They will share their ideas and communicate them using scientific language, drawings, charts, and tables. Key areas of Science to be covered include: Everyday Materials, Plants, Animals, including humans, Seasonal Change and Living Things in Their Habitats.

Lower Key Stage Two (Years 3 and 4):

Children are encouraged to extend the scientific questions which they ask and answer about the world around them. They will explore everyday phenomena and the relationships between living things and familiar environments and begin to develop their ideas about functions, relationships and interactions. Children will make some decisions about which types of enquiry will be the best way of answering questions including observing changes over time, noticing patterns, grouping and classifying, carrying out simple comparative and fair tests, finding things out using secondary sources. They will make systematic and careful observations and, where appropriate, take accurate measurements using standard units, using a range of equipment, including new equipment including thermometers and data loggers. Children will begin to look for naturally occurring patterns and relationships and decide what data to collect to identify them and help to make decisions about what observations to make, how long to make them for and the type of simple equipment that might be used. Key areas of Science to be covered include: Plants, Animals, including humans, Living Things

in Their Habitat, Rocks, Light, Forces and Magnets, Electricity, Sound and States of Matter.

Upper Key Stage Two (Years 5 and 6):

The principal focus of Science teaching in Upper Key Stage 2 is to enable children to develop a deeper understanding of a wide range of scientific ideas. They should do this through exploring and talking about their ideas; asking their own questions about scientific phenomena; and analysing functions, relationships and interactions more systematically. In Upper Key Stage 2, children should encounter more abstract ideas and begin to recognise how these ideas help them to understand and predict how the world operates. They should also begin to recognise that scientific ideas change and develop over time. Children will take measurements, using a range of scientific equipment, with increasing accuracy and precision, taking repeat readings where appropriate, choosing the most appropriate equipment and explaining how to use it accurately. They will identify patterns that might be found in the natural environment. They will make their own decisions about what observations to make, what measurements to use and how long to make them for and whether to repeat them. Key areas of Science to be covered include: Plants, Living Things in Their Habitat, Animals, including humans, Earth and Space, Light, Forces, Electricity, Properties and Changes of Materials and Evolution and Inheritance.

Curriculum Rooms

At Cestria we have a dedicated Science investigation hub which is used to supplement the teaching of Science across Key Stage 2 and into Key Stage 1. The role of the Science hub is to focus small groups of children on specific lines of enquiry that link directly to the work being taught in individual year groups through a highly practical, hands-on approach. The Science hub is resourced and planned for by a dedicated HLTA specialist.

Aims

Through high-quality science teaching, we aim to help our pupils understand how major scientific ideas have played a vital role in society. Moreover, we aim to prepare our pupils for life in an increasingly scientific and technological world. We aim to do this by:

- Delivering high quality, interesting and engaging science lessons.
- Ensuring all children receive the required allocation of Science teaching across each term.
- Using resources such as our Science investigation hub to foster of love of practical Science in children.
- Teaching science in a global and historical context; including the contributions significant scientists from a range of cultures;
- Developing and extending pupils' scientific knowledge and understanding;
- Developing pupils' ability to work scientifically and involve pupils in planning, carrying out and evaluating investigations;
- Developing pupils' scientific vocabulary and ability to articulate scientific concepts clearly and precisely;
- Ensuring that all pupils are appropriately challenged to make good progress in science.

Teaching and Learning

At Cestria, teachers plan and deliver high-quality and engaging science lessons, following a set scheme, incorporating a range of teaching and learning styles. At Cestria, teachers will provide opportunities for pupils to:

- Learn about science, where possible, through first hand practical experiences;
- Develop their research skills through the appropriate use of secondary sources;
- Work collaboratively in pairs, groups and/or individually;
- Plan and carry out investigations with an increasing systematic approach as they progress through the school;
- Develop their questioning, predicting, observing, measuring and interpreting skills;

- Record their work in a variety of ways e.g. writing, diagrams, graphs, tables and pictures;
- Read and spell scientific vocabulary appropriate for their age.
- Be motivated and inspired by engaging and interactive science displays, which include key vocabulary and relevant questions.
- Learn about science using the outdoor learning environment.

Planning

- Science in the Early Years Foundation Stage is planned using the Early Years Curriculum.
- Key Stage 1 and 2 teachers plan science lessons using the Rising Stars scheme that is based on the new National Curriculum (2014).
- All science lessons have a clear and focused, knowledge based BEL and S2S, clear differentiation and success criteria to ensure that pupils make at least good progress.
- ‘Working scientifically’ is embedded throughout the areas of learning in key stage 1 and 2; this focuses on the key aspects of scientific enquiry which enable pupils to investigate and answer scientific questions.
- Areas of learning within key stage 1 and 2 ensure that statutory requirements are being covered through the specific disciplines of biology, chemistry and physics (teachers may also refer to the non-statutory guidance which provide additional support).
- Through the use of AFL sheets, teachers are able to assess the knowledge and prior learning of children before the start of each new topic. This is then revisited at the end of a topic to check for progression.

Monitoring

- Science is monitored by the Science coordinator as part of the whole school monitoring process.
- Planning and book scrutiny are also carried out regularly by the science subject leader and feedback is given at an appropriate time.

- Learning walks allow the subject leader to assess Scientific progression across the year groups.

Health and safety

- Teachers must plan safe activities for science and complete a risk assessment if necessary.
- Teachers and teaching assistants need to be aware of health and safety procedures when using equipment/food in science lessons.
- Pupils must be aware of the need for personal safety and the safety of others during science lessons.