



## Science Policy

### Vision statement

*At Christ the Sower Ecumenical Primary School we provide the 'good earth' for all our children to flourish; where every child can learn and explore who they are created to be, with the high expectation that we, individually and collectively, will enable every child to be and do the best they can.*

*A loving place where we all care, learn and grow together.*

### Members of staff responsible:

- Deputy Head
- Headteacher
- Class Teachers
- Support Staff

**Date of policy: September 2022**

### Policy Intent

This policy outlines the teaching, organisation and management of the Science taught and learnt at Christ the Sower. The school's policy for Science follows The National Curriculum 2014 for Science Guidelines and the Early Years Foundation Stage Framework and aims to ensure that all pupils:

- 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 a variety of different science enquiries that help them to answer scientific questions about the world around them
- are equipped with the **scientific skills** required to understand the **uses and implications** of Science, today and for the future.

We understand that it is important for lessons to have a skills-based focus, and that the knowledge can be taught through this. Where suitable, adaptations have been made to suit our school's environment and ethos.

At Christ the Sower, we have high aspirations for all of our children and we encourage children to be inquisitive throughout their time at the school and beyond. The Science curriculum fosters a healthy curiosity in children about our universe and promotes respect for the living and non-living. We believe science encompasses the acquisition of knowledge, concepts, skills and positive attitudes. Throughout the programmes of study, the children will acquire and develop the key knowledge that has been identified within each unit and across each year group, as well as the application of scientific skills. We ensure that the Working Scientifically skills are built-on

and developed throughout children's time at the school so that they can apply their knowledge of science when using equipment, conducting experiments, building arguments and explaining concepts confidently and continue to ask questions and be curious about their surroundings.

## **Policy Implementation**

Our new curriculum has been designed to reflect the standing and interests of the Christ the Sower community, to draw on strengths and to develop areas of learning that build individual cultural and scientific capital so preparing children for life in the 21<sup>st</sup> century.

The approach at Christ the Sower will result in a fun, engaging, high-quality science education, which will provide children with the foundations and knowledge for understanding the world. Our engagement with the local environment will ensure that children learn through varied and first hand experiences of the world around them.

Frequent, continuous and progressive learning outside the classroom will be embedded throughout science and our cultural curriculum- through various workshops, trips and interactions with experts and local charities. We aim to ensure that children have access to positive role models and initiatives within the field of science, technology, engineering and mathematics from the immediate and wider local community. From this exposure, our children will leave us as motivated learners with sound scientific understanding.

## **Teaching and Learning**

Teachers create a positive attitude to science learning within their classrooms and reinforce an expectation that all pupils are capable of achieving high standards in science. Our whole school approach to the teaching and learning of science involves the following;

- Science is taught in planned and arranged topic blocks by the class teacher, using a variety of hands-on-approach, questions, investigations and quizzes to enable the achievement of a greater depth of knowledge.
- Through our planning, we involve problem solving opportunities that allow children to apply their knowledge, and find out answers for themselves. Children are encouraged to ask their own questions and be given opportunities to use their scientific skills and research to discover the answers. This curiosity is celebrated within the classroom. Planning involves teachers creating engaging lessons, often involving high-quality resources to aid understanding of conceptual knowledge. Teachers use precise questioning in class to test conceptual knowledge and skills, and assess pupils regularly to identify those children with gaps in learning, so that all pupils keep up.
- We build upon the knowledge and skill development of the previous years. As the children's knowledge and understanding increases, and they become more proficient in selecting, using scientific equipment, collating and interpreting results, they become increasingly confident in their growing ability to come to conclusions based on real evidence.
- Working Scientifically skills are embedded into lessons to ensure these skills are being developed throughout the children's school career and new vocabulary and challenging concepts are introduced through direct teaching. This is developed through the years, in-keeping with the topics.
- Teachers demonstrate how to use scientific equipment, and the various Working Scientifically skills in order to embed scientific understanding. Teachers find opportunities to develop children's understanding of their surroundings by accessing outdoor learning and workshops with experts.

- Children are offered a wide range of extra-curricular activities, visits, trips and visitors to complement and broaden the curriculum. These are purposeful and link with the knowledge being taught in class.
- Regular events, such as Science Week and workshops with our partner secondary schools, allow all pupils to come off-timetable, to provide broader provision and the acquisition and application of knowledge and skills. We aim for these events to involve families and the wider community.

## **Assessing Impact**

Children's progress is continually monitored throughout their time at Christ the Sower and is used to inform future teaching and learning. By the end of each key stage, pupils are expected to know, apply and understand the matters, skills and processes specified in the relevant programme of study as set out in the National Curriculum.

Children receive effective feedback through teacher assessment, both orally and through written feedback in line with the success criteria. Assessment for learning is continuous throughout the planning, teaching and learning cycle through a variety of methods:-

- Observing children at work, individually, in pairs, in a group, and in classes.
- Questioning, talking and listening to children
- Considering work/materials / investigations produced by children together with discussion about this with them.

In line with the KWL strategy, children identify what they know already about each topic, as well as what they would like to know. The programme of study is responsive to the children's starting points, as well as their specific interests. It also ensures a focus on the key identified knowledge of each topic, which is mapped within and across year groups to ensure progression. At the end of each blocked science topic, this key knowledge is checked. Outcomes of work also evidence its acquisition.

In EYFS, we assess the children's Understanding of the World according to the Development Matters statements and some aspects of Expressive Arts Design are also science based.

## **The nature, processes and methods of science**

'Working scientifically' specifies the understanding of the nature, processes and methods of science for each year group and this is embedded within lessons and focuses on the key features of scientific enquiry, so that pupils learn to use a variety of approaches to answer relevant scientific questions. These types of scientific enquiry include: observing over time; pattern seeking; identifying, classifying and grouping; comparative and fair testing (controlled investigations); and researching using secondary sources. Pupils are given opportunity to seek answers to questions through collecting, analysing and presenting data.

## **Planning and Resources**

We have sufficient, high-quality science resources to aid and support the teaching of all units and topics taught, from EYFS to Y6. We keep these in a central store, where they will be labelled and easily accessible to all staff. EYFS have a range of resources kept in classes, for simple access for children during exploration. The library contains a good supply of science topic books to support children's individual research.

## **Organisation**

Science will be taught in planned and arranged into topic blocks by the class teacher, with cross-curricular links to DT and Art throughout the year.

Year 1	Me and my body (Healthy Eating)	Everyday materials	Weather	Animals including humans	Plants	Planets
Year 2	Materials		Healthy Humans	Living things and their habitats	Animals including humans	Plants
Year 3	Rocks and soils		Forces and magnets	Animals including humans	Light and dark	Plants
Year 4	Animals including humans	Electricity	State of matter		Living things and their habitats	Sound
Year 5	Forces	Animals including humans	Properties and changes of materials	Earth and Space	Living things and their habitats	
Year 6	Light	Living things and their habitats	Evolution and inheritance	Animals including humans	Electricity	

## **Role of the Subject Leader:**

- To monitor the standards of children's work.
- To support colleagues in their teaching, for being informed about current developments in the subject, and for providing a strategic lead and direction for science in the school.
- To monitor the budget, resources, science books, trips and workshops to support learning.
- To review samples of children's work, training, liaising with other subject leaders from other schools and organising science week.