St Paul's Church of England Primary School Oswaldtwistle

'Don't let anyone look down on you because you are young but set an example for the believers in speech; in conduct; in love; in faith and in purity (1 Timothy 4:12).'

Science Policy

September 2023

Agreed by Governors:

This policy outlines the guiding principles by which this school will implement the Science in the National Curriculum (2014) in the context of the governors' curriculum policy statement and its staffing and health and safety and equal opportunities policies. It is reviewed periodically.

Our rationale for teaching science

Science teaches an understanding of natural phenomena. It aims to stimulate a child's curiosity in finding out why things happen in the way 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. Science in our school is about developing children's ideas and ways of working that enable themselves to make sense of the world in which they live through investigation, as well as using and applying process skills.

We believe a broad, balanced and personalised science curriculum is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability.

Our aim in teaching science includes the following:

- Preparing our children for life in an increasingly scientific and technological world.
- Fostering concern about, and active care for, our environment.
- Helping our children acquire a growing understanding of scientific ideas.
- Helping develop and extend our children's scientific concept of their world.
- Developing our children's understanding of the international and collaborative nature of science

Attitudes

- Encouraging the development of positive attitudes to science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging open-mindedness, self-assessment, perseverance and responsibility.
- Building our children's self-confidence to enable them to work independently.
- Developing our children's social skills to work cooperatively with others.
- Providing our children with an enjoyable experience of science, so that they will develop a deep and lasting interest and may be motivated to study science further.

Skills

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

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

Our teaching aims

- Teaching science in ways that are imaginative, purposeful, well managed and enjoyable.
- Giving clear and accurate teacher explanations and offering skilful questioning.
- Making links between science and other subjects.

Sometimes we do this through whole class teaching, while at other times we engage the children in an enquiry-based research activity. Wherever possible, we involve the pupils in 'real' scientific activities, for example, researching a local environmental problem or carrying out a practical experiment and analysing and presenting results.

How Science is structured through the school

Science is a core subject in the National Curriculum.
In England, it has four attainment targets and a statement of breadth of study.
These are:

1. Sc1 Scientific enquiry;
2. Sc 2 Life and living processes;
3. Sc 3 Materials and their properties;
4. Sc 4 Physical processes.

Our role is to teach scientific enquiry through the contexts of the three main content areas. The breadth of study statement in the National Curriculum is concerned with issues such as the use of ICT, scientific language and health and safety.

Children in the foundation stage – the reception class are taught the science elements of the foundation stage document through Understanding of the World.

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage. Science teaching in the school is about excellence and enjoyment. Working alongside colleagues, the science leader has adapted and extend the curriculum to match the unique circumstances of our school.

The school follows the programme of study outlined in the Curriculum 2014 which links science into a topic-based approach. Science may be a major part of the topic or may be a smaller part. Due to this, a specific time is not allocated to the teaching of science. The class teacher is responsible for writing the short-term plans. These plans list the specific learning objectives, activities and outcomes for each lesson. We ensure that there are opportunities for children of all abilities to develop their skills and knowledge in each unit and we also build progression into the science scheme of work, so that the children are increasingly challenged as they move up through the school.

As we acknowledge that science is a core subject and skills need to keep being developed, each half term all classes must include a science investigation linked to their topic.

Our approach to science

The essential elements describing how science is taught in our school are:

- Providing resources of different complexity, matched to the ability of the child.
- Ask and answer scientific questions.
- Plan and carry out scientific investigations, using equipment, including computers, correctly.
- To practice science skills and enhance their presentation.
- We use the internet to share science resources.
- We use homework to support school and class activities.
- A range of teaching groups are used in class as appropriate.
- Tasks are matched to challenge the ability of pupils to maximise learning and to develop a deeper understanding of a subject.

Equal Opportunities

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, and class, physical or intellectual ability.
- Our expectations do not limit pupil achievement and assessment does not involve cultural, social, and 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, maths and design technology.
- 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; we develop this by asking and encouraging challenging questions and encouraging original thinking.

Assessment and recording in science

We use assessment to inform and develop our teaching.

- Topics commonly begin with an assessment of what children already know – this is done during the first lesson of the new science topic through questioning, finding misconceptions and evaluating what the children already know.
- At the end of each unit, the children are assessed using a subject knowledge quiz which have been created by the subject leader based on our personalised curriculum.
- Children's work is marked according to the agreed school marking policy. Each piece of work is marked positively and clearly and indicates where the work is good and how it could be further improved. Time is given for pupils to

respond. Once a term we moderate work together to ensure that our teacher assessments are consistent.

- Assessment is undertaken during each topic and this is formally recorded and available for all staff. The coordinator tracks all pupils progress using the assessment data and undertakes children's work sampling at regular intervals across the year.
- Pupils who demonstrate high ability in science are identified and supported.
- The Y2 teacher assesses children's level of attainment at the end of the KS1 programme of study. This teacher assessment is based on assessment records and work samples.
- Reports to parents each term include an assessment of pupil's attainment in science against the national average. The end of year report also describes each child's attitude to science, their progress and understanding of the content of science.

Health and Safety

Safe practice must be promoted at all times. Teachers work in line with the school's health and safety policy.

- Particular attention must be given to avoiding the use of anything that aggravates individual pupils' allergies.
- Safety issues should be identified in planning and risk assessments must be completed, when activities are identified that are unusual and beyond the scope of normal safety practice.

The Learning Environment

Classrooms will have displays of current science topics. The profile of science should reflect its place as a core subject. Resources for the unit of work being covered should be appropriately accessible. Key vocabulary should be displayed and referred to during the half term. These words/phrases must also reflect the personalised curriculum for each year group.

Community Cohesion

Children have regular opportunities to participate in the community and are active in working with others from different ethnic, religious, and socio-economic backgrounds – linked to scientific enquiry.

The school regular holds science days and weeks – involving the local community and developing pupils' awareness. Learning that has taken place during these days/weeks is often displayed in scrapbooks displayed at the front of school for staff, children and visitors to see.

The life education bus visits the school on an annual basis.

September 2023
Review date: September 2024