

Wrockwardine Wood CE Junior School



Science Policy

March 2026

Date of review March 2027

Signed. R. Daily



“Love, Laugh Learn”

We will ignite the ability in all to ***‘Love, Laugh and Learn’***, recognising the extraordinary and wondrous in everything and in everyone. Our rich, varied and creative curriculum, together with our Christian values, will empower all to flourish following Jesus’s promise **‘I have come to give life and life in all its fullness.’** (John 10:10)

Our School Christian Values





Intent

At Wrockwardine Wood Junior School, we recognise the importance of science in everyday life. With this in mind, we give the teaching of Science the prominence it requires.

Our science curriculum aims to develop our children's natural curiosity to enhance their understanding of the world around them through the disciplines of biology, chemistry and physics. All pupils will be taught the essential knowledge, methods, process and uses of science through our broad, balanced and innovative curriculum. They will be encouraged to understand how science can be used to explain what is occurring, predict outcomes and analyse results.

Aims

A high-quality science education provides the foundations for understanding the world through the specific disciplines of biology, chemistry and physics. Science has changed our lives and is vital to the world's future prosperity, and all pupils should be taught essential aspects of the knowledge, methods, processes and uses of science. 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. They should be encouraged to understand how science can be used to explain what is occurring, predict how things will behave, and analyse causes. (National Curriculum 2014)

The aims of teaching science are to enable children to:

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

Curriculum Implementation

At Wrockwardine Wood, we aim to enthuse children in order to develop their thirst for scientific knowledge. We do this by using the Engaging Science scheme of work. This hands on, practical approach allows us to deliver the knowledge aspect of the curriculum through a broad range scientific investigation. Each lesson has a real-life implication and allows children to make the links between science and the real world.

Science is taught over a whole afternoon, once a week and covers a range of topics including earth and space, animals including humans and light and sound. The children will experience most topics twice during their time at our school which allows them to gain an in depth understanding of each area. Previous skills and knowledge are built upon, and scientific vocabulary is embedded and reinforced. Links between Science and other curriculum areas are always highlighted. English and maths have a prominent role to play in science as children record and present results and write predictions, conclusions, and reports.

Alongside our weekly Science lessons, children experience educational visits linked to their science topics, which enhance the subject. We regularly visit the forest school area and have visitors into school to conduct science related workshops.

Teaching and learning style

We use a variety of teaching and learning styles in science lessons. Our principal aim is to develop children's knowledge, skills, and understanding. We aim to do this through scientific enquiry where possible. We encourage the children to ask, as well as answer, scientific questions. They have the opportunity to use a variety of data, such as statistics, graphs, pictures, and photographs. They use ICT in science lessons because it enhances their learning. They take part in role-play and discussions, and they present reports to the rest of the class. They engage in a wide variety of problem-solving activities. Wherever possible, we involve the pupils in real scientific activities, for example carrying out practical experiments and analysing the results.

We recognise that in all classes children have a wide range of scientific abilities, and we ensure that we provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this in a variety of ways:

- setting tasks which are open-ended and can have a variety of responses;
- grouping children in mixed ability groups, and challenging tasks for all children. We offer scaffolded resources to those pupils where appropriate.
- using teaching assistants to support the work of individual children or groups of children.

Science curriculum planning

The school has a science curriculum which is based on the National Curriculum for science. This national scheme has been adapted to the local circumstances of the school in that we make use of the local environment in our fieldwork, although we choose a locality where the physical environment differs from that which predominates in our immediate surroundings.

We carry out our curriculum planning in science in two phases (long-term and short-term). The long-term plan maps the scientific topics studied in each term during the key stage. The science subject leader works this out in conjunction with teaching colleagues in each year group. Where possible, science is taught as part of the half termly topic

We follow 2 year planning cycle to ensure all children cover all objectives by the end of each key stage. This means children in UKS2 will all cover the same topic at the same time. The same occurs in LKS2.

Staff use the Engaging Science scheme of work to support each unit of work. They adapt each unit (short term plan) to ensure it matches the needs of their pupils. Staff are not

required to produce medium or short term plans. Instead individual lessons should be available in the year groups planning folder along with the unit's resources. Each subject area is revisited and extended every two years. In this way we ensure complete coverage of the National Curriculum. Staff also use the ASE PLAN documents, specifically the exemplification PowerPoints to ensure that their lessons are pitched at the expected requirement.

The class teacher is responsible planning daily lesson for each lesson. These plans list the specific learning objectives and expected outcomes of each lesson. The class teacher keeps these individual plans in their year group's planning folder on the one drive.

We have planned the topics in science so that they build on prior learning. 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.

The contribution of science to teaching in other curriculum areas

English

- Science contributes significantly to the teaching of English in our school by actively promoting the skills of reading, writing, speaking and listening. Some of the texts that the children study in their English lessons are of a scientific nature. The children develop oral skills in science lessons through discussions and through recounting their observations of scientific experiments. They develop their writing skills through writing reports and projects and by recording information. Oracy is embedded at the heart of teaching and learning and is developed consistently across the curriculum through both structured and incidental opportunities. Building on our shared belief that oracy is the ability to articulate ideas, deepen understanding and engage with others through spoken language, teachers explicitly teach and model new vocabulary in every subject, ensuring pupils are exposed to ambitious, topic-specific language. This vocabulary is revisited through talk prompts and discussion tasks enabling pupils to practice and apply it in meaningful contexts. Staff carefully model high-quality spoken language through sentence stems and structured responses, which are then scaffolded to support all learners to speak with increasing confidence and clarity. Opportunities for paired talk, group discussions, debate and reasoning are planned into lessons, allowing pupils to refine their listening and speaking skills progressively. Beyond the classroom, oracy is further developed through assemblies, playtimes, lunchtimes and extra-curricular activities, reflecting our whole-school ethos that every child has a valued voice. Through this consistent and inclusive approach, we nurture confident, articulate speakers with rich vocabulary who are well equipped to succeed across the curriculum and beyond.

Mathematics

Science contributes to the teaching of mathematics in a number of ways. When the children use weights and measures, they are learning to use and apply number. Through carrying out investigations they learn to estimate and predict. They develop accuracy in their observation and recording of events. Many of their answers and conclusions include numbers. Scientific data is often graphed and interpreted, enabling children to develop their data handling skills.

Spiritual, moral, social and cultural development

Science teaching offers children many opportunities to examine some of the fundamental questions in life; for example, the evolution of living things and how the world was created. Through many of the amazing processes that affect living things, children develop a sense of awe and wonder regarding the nature of our world. Science raises many social and moral questions. Through the teaching of science, children have the opportunity to discuss, for example, the effects of smoking, and the moral questions involved in this issue. We give them the chance to reflect on the way people care for the planet, and how science can contribute to the way we manage the earth's resources. Science teaches children about the reasons why people are different and, by developing the children's knowledge and understanding of physical and environmental factors, it promotes respect for other people.

Science and Computing

ICT enhances the teaching of science in our school significantly. It also offers ways of impacting on learning which are not possible with conventional methods. Children use ICT to record, present and interpret data, to review, modify and evaluate their work, and to improve its presentation. Children learn how to find, select, and analyse information on the Internet and on other media.

Science and inclusion

At **our school** we teach science to all children, whatever their ability and individual needs. Science forms part of the school curriculum to provide a broad and balanced education to all children. Through our science teaching we provide learning opportunities that enable all pupils to make good progress. We strive hard to meet the needs of those pupils with special educational needs and disability, those who have been identified as Gifted and Talented, and those learning English as an additional language, and we take all reasonable steps to achieve this. For further details see individual whole-school policies: Special Educational Needs and Disabilities (SEND); Gifted and Talented; English as an Additional Language (EAL)

We enable all pupils to have access to the full range of activities involved in learning science. Where children are to participate in activities outside the classroom (a trip to a science museum, for example) we carry out a risk assessment prior to the activity, to ensure that the activity is safe and appropriate for all pupils.

Assessment for learning

Staff carry out pre-topic recaps called prior learning at the start of each unit. This enables children to recap prior knowledge and will highlight any gaps or misconception in understanding. These can then be addressed by the teacher before new learning is delivered.

Staff make continual judgements about the children's abilities in each topic visited. This enables them to adapt each lesson as it is taught. Both knowledge and understanding and scientific enquiry skills are monitored. Teachers will assess children's work in science by making informal judgements during lessons. On completion of a piece of work, the teacher assesses it, and uses this assessment to plan for future learning. Written or verbal feedback is given to the child to help guide his/her progress during the lesson. Children are encouraged to make judgements about how they can improve their own work.

Knowledge and Understanding: Cold tasks enable the teacher to establish prior understanding and knowledge before an objective is taught. This quick activity will be an image or diagram linked to one objective from that topic. A hot task is then used to assess their understanding of the new learning once delivered. There should be a cold and hot task for each objective of the science topic. This then enables staff to make track attainment on DcPro. This data is then analysed by the subject lead.

The children will also assess how well they think they have done during the topic. In the front of each child's book is a science tracker. Using a tick, dot or cross they indicate their level of confidence for each national curriculum objective.

Scientific Enquiry Skills: During each topic, the teacher will identify a couple of NC objectives that the topic lends its self to particularly well. These will then be the main (although not sole) focus of the scientific enquiry skills taught in the topic. We are currently trailing the use of a TAPS task which enables staff to assess one particular and relevant scientific enquiry skill two thirds of the way through each unit. This enables staff to plug any gaps and address any misconceptions it identifies. By the end of the year, all working scientifically objectives will have been covered.

Resources

We have sufficient resources for all science teaching units in the school. We keep these in a central store, where there is a box of equipment for each unit of work. The library contains a good supply of science topic to support children's individual research. Individual classes also have developed their own science topic boxes which enables them to store resources effectively.

Monitoring and review

It is the responsibility of the subject leader to monitor the standards of children's work and the quality of teaching in science. The subject leader is also responsible for supporting 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. The subject leader gives the headteacher an annual summary report in which s/he evaluates strengths and weaknesses in science, and indicates areas for further improvement. The subject leader has specially-allocated time for fulfilling the vital task of reviewing samples of children's work, and visiting classes to observe science teaching.

This policy will be reviewed at least every two years.

Next review March 2027