Sherwood Primary School

Science Policy

May 2025

Sherwood Primary School
Science Policy

Sherwood Curriculum Rationale

At Sherwood, we foster children's inquisitiveness and allow them to explore their thoughts and ideas through outdoor learning, observations, practical investigations and thorough research. Our belief is that **all** children are entitled to a broad, challenging and exciting science education which allows all children to leave Sherwood as confident and knowledge rich scientists. Science at Sherwood allows pupils to revisit knowledge from previous Science units helping them progressively to build on their developing Science knowledge and deepening their understanding of the world around them. Vocabulary is present in every lesson with children able to explain their findings using scientific language. Science starts at the heart of EYFS and is under the 'Understanding the World' strand.

Inspire • Explore • Achieve

Sherwood Values

Teaching and Learning at Sherwood Primary School is underpinned by six core values.

The 6 Sherwood Core-Values are:

- Honesty
- Perseverance
- Respect
- Adventure
- Aspiration
- Independence

Alongside our core values, we also promote the fundamental British values of democracy, the rule of law, individual liberty, mutual respect and tolerance of those with different faiths and beliefs across the curriculum.

Equality

At Sherwood, we believe that equality should permeate every aspect of School life and is the responsibility of every member of our School Community.

Every member of our School Community should feel safe, secure, valued and of equal worth. We are committed to ensuring equality of education and opportunity for all pupils; irrespective of race, gender, gender variance, disability, belief, religion socio-economic background or sexual orientation.

It is our aim to understand and tackle the different barriers which could lead to unequal outcomes for different groups of pupils in School. The Equality Act provides a framework to support our commitment to valuing diversity, tackling discrimination, promoting equality and fostering good relationships between people. It is our aim to celebrate and value the equal opportunity achievements and strengths of all members of our School Community.

Our rationale for teaching Science

Science at Sherwood is about developing understanding of the world around us. Science allows children to be inquisitive about the world around them. It allows them to explore and challenge their thoughts and ideas through practical work and research. We believe that a broad and balanced science education is the entitlement of all children, regardless of ethnic origin, gender, class, aptitude or disability.

Our aims in teaching science include the following:

- Preparing our children for life in a scientific and technological world.
- Fostering concern about, and caring for, our environment.
- Helping our children acquire an understanding of scientific ideas.
- Helping develop, extend and challenge our children's scientific concepts of the world through oracy opportunities.
- Developing our children's understanding of the international and collaborative nature of science.
- Recognise renowned scientists from different genders and race who have contributed to the work of Science.
- Ensuring that all children's needs are met regarding the science curriculum and children are provided with relevant support and appropriate tasks and experience, whether it be enrichment or consolidation.
- To follow a progressive curriculum where experience, skills and concepts are built on throughout each year group.
- To foster and promote positive attitudes such as curiosity, perseverance and a willingness to challenge and accept.
- To help all children to experience pleasure, success and enjoyment in their scientific experiences in order to develop a positive attitude towards science education.

Attitudes

- Develop positive attitudes towards science.
- Building on our children's natural curiosity and developing a scientific approach to problems.
- Encouraging aspiration, adventure, perseverance and responsibility during Science lessons.

- Encourage our children's self-confidence to enable them to work independently.
- Understanding that ideas and thoughts are accepted and also challenged.
- Developing our children's personal 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.

Oracy in Science

Oracy is an important part of Science teaching and learning. During Science lessons, children are actively encouraged to participate in discussion. This is through the use of sentences stems, grouping techniques and oracy scaffolds. Children are encouraged to accept, challenge and build on each other's ideas and thoughts. In terms of vocabulary, teachers identify Science specific vocabulary during the planning of a topic or unit of work and will include these on plans. During lessons, teachers will explain any polysemous words and model how to use these words in sentences. Children are then given opportunities to practise using the vocabulary taught, through carefully planned tasks and activities.

Scientific Enquiry

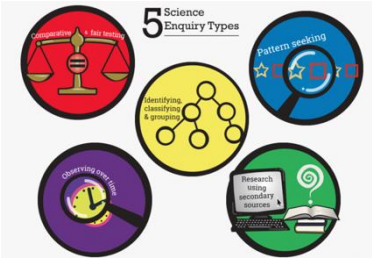
When planning and teaching science lessons it is important to ensure that children are using the five types of enquiry. The National Curriculum for Science for England clearly lists five different types of enquiry that children should be familiar with across primary school.

These are:

Pattern Seeking- Involves observing, measuring, and recording natural phenomena, or carrying out surveys. These may be biological investigations where it is not possible to control the variables. The children then look for patterns and relationships in the collected data.

Comparative and fair testing- Here children start thinking about variables and how they affect things. Children may compare two things, for example does icing sugar dissolve faster than caster sugar? Theymay start to think about developing a controlled test such as how the height of a drop affects the size of the crater made by a ball.

Observation over time- This type of enquiry occurs when children make careful observations of objects or events over a set time. This could be over any time period from short times such as minutes, hours etc up to over a whole year.



Identifying, classifying and grouping- This allows pupils to engage in activities to help them makesense of how the world is organised. They arrange a range of objects or events into manageable sets and then name them.

Research using secondary sources- This is an enquiry type that is useful when it is difficult to find out by testing for yourself. This could be finding out about different planets or what lives in a desert? It's also important to look at where they source the information and how accurate the sources may or may not be.

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.
- To ensure that children are taught and can use specific science vocabulary.
- To give the children the opportunities to build on and challenges others and their ideas,
- To ensure that all concepts and process skills of the National Curriculum are covered and revisited in a systematic and progressive way.
- To give opportunities for children to use IT to support their learning.

Organisation

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum for Science and Science in the Foundation stage. Science teaching in the school is about curiosity and enjoyment.

KS1 and Foundation stage teachers should be teaching science for a minimum of one hour each week.

KS2 teachers should be teaching science for a minimum of two hours per week.

We aim to include practical scientific enquiry which is backed up by the development of secure knowledge and understanding.

The school follows the programmes of study set out by the PLAN assessment team. This was produced with a wide variety of practitioners to meet the needs of today's current scientific climate. We use the overview and progression documents to plan carefully the units of work for our children. This ensures progression between year groups and guarantees topics are revisited. Teachers are expected to adapt and modify the model plans to suit their children's interests, current events, their own teaching style, the use of any support staff and the resources available. We ensure that any modification does not overlook any areas of the National curriculum.

Our role is to teach scientific enquiry through the contexts of the three main content areas (Biology, Chemistry and Physics). The breadth of study statement in

the National Curriculum is concerned with issues such as scientific language and health & safety.

Children in the foundation stage - the reception class - are taught the science elements of the foundation stage document through the Early-Learning Curriculum: Understanding of the World.

The school meets the National Curriculum standards in the subject and teachers plan to consolidate and extend learning opportunities across the curriculum. The units are taught in a way to ensure progression between year groups and guarantees topics are revisited through opportunities to revisit prior learning. Scientific knowledge and understanding is enhanced and extended within and across year groups.

Generally, one topic is taught in each half term. Some units may have been moved between years, or amalgamated, where appropriate. Units on Life and Living Processes are commonly taught in the spring and summer terms.

Foundation Stage

In the Foundation Stage, science goals focus on developing children's curiosity about the world around them and fostering their observational and problem-solving skills. Children are provided with experiences and support which will help them to develop a positive sense of the world around and of others; respect for nature; and a willingness to care for animals and plants in their local environment. The following Early Learning Goal is broken down into half termly topics. The topics are monitored by children's key workers through appropriate tasks and activities.

Our approach to Science

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

- We have adopted parts of a commercial primary science scheme, which are adapted to our circumstances.
- We use IT widely in science. Children are given the opportunity to practice science skills and enhance their presentation using carefully chosen software.
- We use IT for enquiry work, including microscopes with digital cameras, video capture of images and activities, and data logging.
- Other resources include selected video and wallchart resources; short video sequences and other teaching resources have been networked for interactive-whiteboard use.

- We encourage children to challenge and accept ideas and thoughts given by others through oracy opportunities.
- We embed enquiry skills and reinforce learning with selected enquiry simulations.
- We encourage children to ask and answer their own questions as far as practicable.
- We use homework to support school and class activities. This relates to the school's overall homework policy.
- We use cross-curricula links to science with, for example, design and technology units.

Assessment and Record Keeping Procedures in Science

Children are informally assessed by staff throughout their work. Recording of work will be in a form appropriate to the planned focus and will be shown in teacher's planning. Evidence of Science will be in a variety of forms e.g. photographs as well as written work or online tasks using SeeSaw. Written work may not always be appropriate and staff will use their professional judgment in this. Assessment allows the leadership team, parents, governors and school inspectors to see the impact that Science education is having for pupils and for whole school outcomes.

We use assessment to inform and develop our teaching. Topics commonly begin with an assessment of what children already know. Children are involved in the process of self-improvement, recognising their achievements and acknowledging where they could improve. Activities during, and at the end of, each topic record achievement and celebrate success.

Teachers assess children's level of attainment at the end of each half term. This assessment is based on teacher assessment, work samples and coverage of the curriculum. Children are monitored through these assessment to ensure progress is being made. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.

Role of the Subject Leader

The Science subject leader is responsible for supporting colleagues in the teaching of Science, for being informed of current developments and for providing a strategic lead and direction for Science in school. Monitoring and evaluation may take place by means of a number of methods including:

• Looking at children's work;
• The analysis of teachers' planning as seen on plans and with resources;
• Discussion among groups of staff or the whole staff;
• Classroom observation;
• Talking to pupils;
• External inspection and advice

Displays of work and discussions with children and staff assist the subject lead when monitoring.

The Science subject leader is responsible for producing reports, whether annually or at specific points when monitoring is agreed of the strengths and areas for further development to be shared with the Head teacher, Governing body and staff. Opportunities to implement these developments through staff training (CPD), one to one mentoring and similar opportunities will be actively sought.

Inclusion (SEND)

All children are encouraged and supported to develop their full potential in Science. Some children may require extra support in the classroom and opportunities for consolidation and reinforcement. We teach the Science curriculum to all children, whatever their ability. Science forms an important part of the school's curriculum policy to provide a broad and balanced education to all children. Activities are adapted to meet the needs of all pupils.

Resources in School

A wide variety of Science resources are available in school. These include children's reference books, teachers' resource books and notes, Science materials and equipment, videos and access to online resources. A range of pictorial resources such as posters, pictures and photographs are also available. Resources are shared and all staff, including visiting students, has equal access to all resources.

The Science Subject Leader is responsible for maintaining science resources, monitoring their use and organising the resource area. Staff are requested to submit to the Science Subject Leader lists of any resources which they require to be added to the existing stock.

Health & Safety

When working with tools, equipment and materials, in practical activities and in different environments, including those that are unfamiliar, pupils should be taught:

- About hazards, risks and risk control.
- To recognise hazards, assess consequent risks and take steps to control the risks to themselves and others.
- To use information to assess the immediate and cumulative risks.
- To manage their environment to ensure the health & safety of themselves and others.
- To explain the steps they take to control risks.
- When teaching Science, Health & Safety issues must be taken into consideration.
- The children must be fully supervised, especially when using tools and apparatus.

- All equipment will be stored safely and returned to the correct place at the end of each lesson.
- The children and staff should wear protective clothing for example; safety goggles should be used when working with potentially dangerous substances.
- If using newspapers or magazines to protect tables care must be taken that in-appropriate articles, or photographs cannot be seen by the children.
- Materials for science should be bought from an educational supplier.
- The correct procedures and techniques must be shown to children before using any tools e.g. scissors, knives, chisels etc.
- All liquids or objects spilt or dropped onto the floor must be cleared away immediately so as not to cause accidents.
- Glass should always be handled carefully and when possible plastic should be used instead.
- Thermometers should always be used carefully.
- With naked flames e.g. lighted candles, children should be warned about long hair, ties and other bits of clothing not coming near the flame. Candles should be firmly fixed in a suitable holder.
- Hot water should be used with care, and should not be put in glass containers, which may crack.
- Lenses (e.g. Magnifying glasses) can focus light and heat, therefore special care should be taken that children do not look at a source of light through these lenses.
- Care should be given when holding any object close to the eye.
- Tasting of things is not allowed, unless otherwise instructed by the teacher in charge. This may be the case when investigating teeth and dental care.
- Care needs to be taken when carrying out electrical work. Mains electricity should not be used, only low voltage batteries.

Please refer to the school Health and Safety Policy and CLEAPSS "Model Health and Safety Policy for Science in Primary Schools."

Role of the Governing Body

At Sherwood, there is a named Science Governor. Their role is to meet termly with the science subject leader to discuss the latest developments within the subject at Sherwood is invited to attend relevant school INSET. They may be involved in book and planning monitoring exercises and take part in learning walks through the school. The governor's role is to be a 'critical friend' asking questions that encourage clear thinking and positive support throughout the school.

Review

Approval date: May 2025
Review date: May 2028

Signed (Headteacher):

Signed (On behalf of the Governing Body):