Sherwood Primary School

Science Policy

May 2022

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Sherwood Curriculum Rationale

We aim to provide a creative, vocabulary rich curriculum that inspires and challenges our children, in preparation for life in a culturally diverse and ever-changing world. High expectations, inclusive approaches and excellent teaching will form the basis of all our work. Our children will have the opportunity to read widely, explore, ask questions and become knowledgeable, independent learners. Our Curriculum will prepare our children for life-long learning.

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
- Adventurous
- 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 in the primary school is about developing understanding of the world around us. It is also a body of knowledge built up through experimental testing of ideas. Science is also methodology, a practical way of finding reliable answers to questions we may ask about the world around us. Science in our school is about developing children's ideas and ways of working that enable them to make sense of the world in which they live through investigation, as well as using and applying process skills. Science in our school is also concerned with the knowledge of our local environment and how this can impact on the children's daily lives.

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 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.
- To ensure that all children's needs are recognised regarding the science curriculum and children are provided with relevant support and appropriate tasks and experience, whether it be enrichment or consolidation.
- To provide a teaching programme that builds upon experience, skills and concepts as children progress throughout the school.
- To foster and promote positive attitudes such as curiosity, perseverance, willingness to use and appraise evidence, willingness to challenge and accept uncertainty, critical reflection and enthusiasm.
- 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

- 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.
- To ensure that all concepts and process skills of the National Curriculum are covered and revisited in a systematic and progressive way.
- Display a variety of scientific work to help to reinforce concepts.
- To give opportunities for children to apply and develop their ICT skills through using appropriate ICT to support their learning in science will be given.

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 the use of ICT, 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: Knowledge and Understanding of the World.

How science is structured through the school

Planning for science is a process in which all teachers are involved to ensure that the school gives full coverage of the National Curriculum in Science and science in the Foundation stage. Science teaching in the school is about excellence, enjoyment and investigation. We adapt and extend the curriculum to match the unique circumstances of our school.

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

In KS 1/Foundation stage, a minimum of 50% of science lessons overall should include practical scientific enquiry.

In KS2 where practicable, a minimum of 50% of science lessons overall should include practical scientific enquiry. Evidence of both practical and theoretical knowledge and skills will be present.

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. Scientific knowledge and understanding is enhanced and extended within and across year groups.

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 must ensure that any modification does not overlook any areas of the National curriculum.

Generally, one topic may be 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. Some units may be taught in collaboration with outside agencies, including neighbouring secondary schools.

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 ICT widely in science. Children are given the opportunity to practice science skills and enhance their presentation using carefully chosen software.
- We use ICT 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.
- The school combines these secondary sources with first-hand scientific enquiries, building children's science skills.
- We actively teach science skills and reinforce learning with selected enquiry simulations.
- We encourage children to ask and answer their own questions as far as practicable.
- Children complete as many full enquiries as practical each term, taking increasing responsibility for their planning, carrying them out and recording/interpreting the results.
- 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 recording in Science

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.
- We mark each piece of work positively, making it clear verbally, or on paper, where the work is good, and how it could be further improved.
- Children's work is compared with model answers to determine its level.
- We have a tracking system to follow and accelerate children's progress.

- The school science coordinator monitors progress through the school by sampling children's work at regular intervals. Children who are not succeeding, and children who demonstrate high ability in science, are identified and supported.
- Equally important is the continuous assessment of children's work, much of which is informal. Commercial means are used by teaching staff to look for gaps in learning with extra opportunities being provided to allow all children to access every opportunity to learn within the science curriculum.
- The teachers assess children's level of attainment at the end of each term. This assessment is based on teacher assessment, work samples and coverage of the curriculum.
- Reports to parents are made verbally each term, and written once a year, describing each child's attitude to science, his/her progress in scientific enquiry and understanding of the content of science.

Monitoring and Evaluation

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.

The Science Subject Leader will monitor teaching and learning of Science and evaluate the impact of teaching through scrutiny of pupils' work, lesson observations, monitoring of planning and tracking of standards through teacher assessment. The Science subject leader is then 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 differentiated 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.

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 2022

Review date: May 2025

Signed (Head teacher):

Signed (On behalf of the Governing Body):