

Sherwood Primary School

Mathematics Policy



January 2024

*We are Sherwood. Each of us unique.
As one family, we all thrive and excel together.*

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Mathematics Policy



Sherwood Curriculum Rationale

We aim to provide a creative and challenging curriculum that inspires our children and prepares them 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 pupils will have the opportunity to explore, ask questions, discover and become resilient, 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
- 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.

Purpose of study

Mathematics is a creative and highly inter-connected discipline that has been developed over centuries, providing the solution to some of history's most intriguing problems. It is essential to everyday life, critical to science, technology and engineering, and necessary for financial literacy and most forms of employment. A high-quality mathematics education therefore provides a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject.

Aims

The national curriculum for Mathematics aims to ensure that all pupils:

- become **fluent** in the fundamentals of Mathematics, including through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- **reason mathematically** by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can **solve problems** by applying their Mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

Early Years

The programme of study for the Foundation stage is set out in the EYFS Framework 2021. For the early learning goals, children at the expected level of development will:

- develop a deep understanding of number to 10, including the composition of each number;
- subitise (recognise quantities without counting) up to 5;
- automatically recall (without reference to rhymes, counting or other aids) number bonds up to 5 (including subtraction facts) and some number bonds to 10, including double facts.
- verbally count beyond 20, recognising the pattern of the counting system;
- compare quantities up to 10 in different contexts, recognising when one quantity is greater than, less than or the same as the other quantity;
- explore and represent patterns within numbers up to 10, including evens and odds, double facts and how quantities can be distributed equally.

The children will also explore shape to develop their spatial reasoning skills, explore patterns and compare length, weight and capacity.

The requirements of the National Curriculum

Key Stage 1 and 2: The Programmes of study for mathematics are set out year by year for Key Stages 1 and 2 in the new National Curriculum (2014). The programmes of study are organised in a distinct sequence and structured into separate domains. Pupils should make connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. 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.

Key Stage 1

The principal focus of mathematics teaching in key stage 1 is to ensure that pupils develop confidence and mental fluency with whole numbers, counting and place value. This should involve working with numerals, words and the four operations, including with practical resources [for example, concrete objects and measuring tools]. At this stage, pupils should develop their ability to recognise, describe, draw, compare and sort different shapes and use the related vocabulary. Teaching should also involve using a range of measures to describe and compare different quantities such as length, mass, capacity/volume, time and money. By the end of year 2, pupils should know the number bonds to 20 and be precise in using and understanding place value. An emphasis on practice at this early stage will aid fluency. Pupils should read and spell mathematical vocabulary, at a level consistent with their increasing word reading and spelling knowledge at key stage 1.

Lower Key Stage 2 (Years 3 and 4)

The principal focus of mathematics teaching in lower key stage 2 is to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value. This should ensure that pupils develop efficient written and mental methods and perform calculations accurately with increasingly large whole numbers. At this stage, pupils should develop their ability to solve a range of problems, including with simple fractions and decimal place value. Teaching should also ensure that pupils draw with increasing accuracy and develop mathematical reasoning so they can analyse shapes and their properties, and confidently describe the relationships between them. It should ensure that they can use measuring instruments with accuracy and make connections between measure and number. By the end of year 4, pupils should have memorised their multiplication tables up to and including the 12-multiplication table and show precision and fluency in their work. Pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

Upper Key Stage 2 (Year 5 and 6)

The principal focus of Mathematics teaching in upper key stage 2 is to ensure that pupils extend their understanding of the number system and place value to include larger integers. This should develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio. At this stage, pupils should develop their ability to solve a wider range of problems, including increasingly complex properties of numbers and arithmetic, and problems demanding efficient written and mental methods of calculation. With this foundation in arithmetic, pupils are introduced to the language of algebra as a means for solving a variety of problems. Teaching in geometry and measures should consolidate and extend knowledge developed in number. Teaching should also ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them. By the end of year 6, pupils should be fluent in written methods for all four operations, including long multiplication and division, and in working with fractions, decimals and percentages. Pupils should read, spell and pronounce mathematical vocabulary correctly.

Teaching for Mastery

We are using a teaching for mastery approach in all classes. Mastering maths means pupils acquiring a deep, long term, secure and adaptable understanding of the subject. The phrase 'Teaching for Mastery' describes the elements of classroom practice and organisation that combine to give pupils the best chances of mastering maths.

Underpinning principals

- Mathematics teaching for mastery assumes everyone can learn and enjoy Mathematics.
- Mathematical learning behaviours are developed such that pupils focus and engage fully as learners who reason and seek to make connections.
- Teachers continually develop their specialist knowledge for teaching Mathematics, working collaboratively to refine and improve their teaching.
- Curriculum design ensures a coherent and detailed sequence of essential content to support sustained progression over time.

Lesson design

- Lesson design links to prior learning to ensure all can access the new learning and identifies carefully sequenced steps in progression to build secure understanding.
- Examples, representations and models are carefully selected to expose the structure of mathematical concepts and emphasise connections, enabling pupils to develop a deep knowledge of mathematics.
- Procedural fluency and conceptual understanding are developed in tandem because each supports the development of the other.
- Practice is a vital part of learning, but the practice is designed to both reinforce pupils' procedural fluency and develop their conceptual understanding.

In the classroom

- Pupils are taught through whole-class interactive teaching, enabling all to master the concepts necessary for the next part of the curriculum sequence.
- Use of precise mathematical language enables all pupils to communicate their reasoning and thinking effectively.
- If a pupil fails to grasp a concept or procedure, this is identified quickly, and gaps in understanding are addressed systematically to prevent them falling behind.
- Significant time is spent developing deep understanding of the key ideas that are needed to underpin future learning.
- Key number facts are learnt to automaticity, and other key mathematical facts are learned deeply and practised regularly, to avoid cognitive overload in working memory and enable pupils to focus on new learning.

Use of Technology

Our ongoing commitment to the development of technology in school ensures that our 1:1 devices from Year 2 upwards are used effectively to support the delivery of the maths curriculum. The use of devices enables our children to maximise learning opportunities. Our use of Apple technology ensures access to a wealth of tools,

visuals and models to support our delivery of the maths curriculum. The use of technology allows the personalisation and adaptation of materials and provision.

Assessment

Assessment is regarded as an integral part of teaching and learning and is a continuous process. Accurate, timely use of formative or summative assessment supports children's progress and helps them meet aspirational targets. All assessment at Sherwood is used to inform planning, teaching, feedback and reporting.

At regular stages throughout their Primary Education, children complete statutory assessments. Nationally standardised summative assessment provides information on how pupils are performing in comparison to pupils nationally.

Year 4 Multiplication Check

The MTC is an online assessment, designed to determine whether pupils are able to fluently recall their multiplication tables up to 12, through a set of 25 timed questions. It will identify pupils who have not yet mastered this mathematical skill so additional support can be provided. This assessment is completed during a 3-week window in June by all children in Year 4.

End of KS2 Sats

During the May of Year 6, pupils complete SATs tests in Mathematics. Pupils are given a scaled score and a 'performance descriptor' against the expected standard. We use these results to benchmark our school's performance against other schools locally and nationally. Analysis of data is used to inform the School Improvement Plan.

Role of Subject Leader

The Subject Leader for mathematics has a clear and ambitious vision for providing high-quality subject education for all pupils. This is communicated to staff through regular sessions of formal and informal CPD. It is also communicated through feedback from the monitoring and review of the mathematics curriculum. They provide support to improve teachers' subject, pedagogical and content knowledge in order to enhance the teaching of mathematics. They are responsible, alongside the SLT, for monitoring and evaluating the provision for mathematics in the school as well as the impact and outcomes of provision.

Role of Nominated Governor

At Sherwood, there is a named Governor for mathematics. Governors are invited to meet with their Subject Leader on a termly basis to discuss the latest developments within the subject. They report back to the Governing Body after each meeting. 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.

Special Educational Needs and Disability

Sherwood School provides a broad, balanced and ambitious Mathematics curriculum for all children. The National Curriculum is our starting point for planning, that meets the specific needs of individuals and groups of children. Teachers set suitable learning challenges and respond to children's diverse learning needs. Additional support is given to children where required, enabling them to take a full and active role. Tasks are adapted where necessary so that children can succeed.

Health and Safety

Staff should always be vigilant about health and safety matters within Mathematics lessons. Resources and manipulatives are used in line with school expectations and behaviour policy.

Links with other areas of the curriculum

As well as making its own contribution to the school curriculum, Mathematics underpins the wider aims of primary education.

Science

Scientific investigations often require skills of classifying, counting, measuring, calculating, estimating and recording in tables and graphs.

Geography

Reading maps uses skills of coordinates and compass points, angles and direction.

History

History requires the understanding of a timeline and calendar in the passage of time.

Art & Design and Technology

Art and Design Technology both require understanding of measurement and pattern, including symmetry and shape. When food is prepared, ratio and proportion and measuring skills are used.

In addition, wherever possible, links are made within other subjects to reinforce mathematical learning.

Monitoring

Monitoring and evaluation is conducted in line with the School Monitoring and Evaluation Schedule.

Evaluation and review of the Policy for Mathematics takes place in line with the School Improvement Plan.

Links with other Policies


These may be read in conjunction with the Mathematics Policy for further information.

- Health and Safety
- Equal Opportunities
- SEND
- Assessment and Feedback
- Homework

Approval

Approval date: May 2024

Review date: May 2027

Signed (Headteacher): 

Signed (On behalf of the Governing Body): 