Stocks Lane Mathematics Policy

May 2025

To be reviewed May 2027

Stocks Lane Primary School

Mathematics Policy

Mathematics teaches children how to make sense of the world around them through developing their ability to calculate, reason and solve problems. It enables children to understand relationships and patterns in both number and space in their everyday lives. Through their growing knowledge and understanding, children learn to appreciate the contribution made by many cultures to the development and application of mathematics.

1 Aims and vision

At Stocks Lane we aim to develop motivated, creative and resilient mathematicians who can confidently apply what they learn. Most of all, we want children to enjoy Maths and to get excited about the challenges the subject can bring. Maths is about learning new skills and practising these to become fluent so as to be able to apply them in real life situations. It is important to us that children see the relevance of Maths and why it is needed in life. We set our children's learning in context by making the links to real life, and across the curriculum where possible.

At Stocks Lane, our objectives in the teaching of mathematics are to:

- promote enjoyment of learning through practical activity, exploration and discussion;
- promote confidence and competence with numbers and the number system;
- develop the ability to solve problems through decision-making and reasoning in a range of contexts;
- develop a practical understanding of the ways in which information is gathered and presented;
- explore features of Geometry, and develop measuring skills in a range of contexts;
- help children understand the importance of mathematics in everyday life;
- develop the cross-curricular use of mathematics in other subjects.

2 Teaching and learning

Stocks Lane Primary School uses a variety of teaching and learning styles in mathematics. Our principal aim is to develop children's knowledge, skills and understanding. During our daily lessons, we encourage children to ask as well as answer mathematical questions. They have the opportunity to use a wide range of resources, such as number lines, bead strings, numicon and concrete resources

alongside pictorial representations to support their work. ICT is used in mathematics lessons for modelling ideas and methods. Wherever possible, we encourage the children to apply their learning to everyday situations and also to link this to other areas of the curriculum.

In all classes, there will be children who grasp concepts rapidy and also children who take longer to grasp concepts. We recognise this fact and provide suitable learning opportunities for all children by matching the challenge of the task to the ability of the child. We achieve this through a range of strategies – in some lessons through differentiated group work and, in other lessons, by organising the children to work in pairs on open-ended problems or games. We use teaching assistants to support some children, and to ensure that work is matched to the needs of individuals.

3 Mathematics curriculum planning

Mathematics is a core subject. To ensure coverage of the curriculum, we refer to the statutory requirements in the National Curriculum for mathematics.

We carry out the curriculum planning in mathematics in three phases: Fluency, Reasoning and Problem Solving.

Fluency involves learning the facts, skills and strategies. Reasoning promotes the skills children need to apply and reasoning is often explored by taking part in games and investigations to notice rules and relationships. In the problem solving stage, with support of the teacher, the children begin to apply the knowledge and skills learnt in previous phases in a variety of contexts. This leads to the children being able to apply these skills independently.

The three phases support the aims of the National Curriculum to ensure children become fluent, learn to reason mathematically and are able to solve problems in a variety of contexts.

It is the class teacher who completes the yearly, half termly and weekly plans for the teaching of mathematics. These weekly plans list the specific requirements and expected outcomes for each lesson, and give details of how the lessons are to be taught. The class teacher keeps these individual plans, and these are often discussed with the subject leaders on an informal basis but also through planning scrutinies.

We plan the activities in mathematics so that they build on the children's prior learning. While we give children of all abilities the opportunity to develop their skills, knowledge and understanding, we also plan progression into the scheme of work, so that there is an increasing challenge for the children as they move up through the school. Chilli challenges are planned and available in every classroom for children to access throughout the day. These challenges range in difficulty to allow challenge for all.

4 The Early Years Foundation Stage

We teach mathematics in our reception class using the Mathematical Development aspects of the EYFS curriculum as the basis of our planning. As the class is part of the Early Years Foundation Stage, we relate the mathematical aspects of the children's work to the objectives set out in the Development Matters Early Learning Goals, which underpin the curriculum planning for children aged three to five. We give all the children ample opportunity to develop their understanding of number and numerical patterns through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics.

5. KS1

The principal focus of mathematics in Key Stage One 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 and pictorial represenations. 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 meaures 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 value of 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 One.

6. KS2

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 their corresponding division facts and show precision and fluency in their work.

In upper Key Stage 2 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.

All pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling.

7. Contribution of mathematics to teaching in other curriculum areas

English

The teaching of mathematics contributes significantly to children's understanding of English in our school by actively promoting the skills of reading, writing, speaking and listening. For example, in mathematics lessons, we expect children to read and interpret problems, in order to identify the mathematics involved. They are also improving their command of English when they explain and present their work to others during plenary sessions. In English lessons, too, maths can contribute: younger children enjoy stories and rhymes that rely on counting and sequencing, while older children encounter mathematical vocabulary, graphs and charts when reading non-fiction texts.

Personal, social and health education (PSHE) and citizenship

Mathematics contributes to the teaching of PSHE and citizenship. The work that children do outside their normal lessons encourages independent study and helps them to become increasingly responsible for their own learning. The planned activities that children do within the classroom encourage them to work together and respect each other's views. We present older children with real-life situations in their mathematics work on the spending of money.

Spiritual, moral, social and cultural development

The teaching of mathematics supports the social development of our children through the way we expect them to work with each other in lessons. We group children so that they work together, and we give them the chance to discuss their ideas and results. The children also self and peer assess during lessons.

Peer assessment enables children to give each other valuable feedback so they learn from and support each other. It adds a valuable dimension to learning: the opportunity to talk, discuss, explain and challenge each other enables children to achieve beyond what they can learn unaided.

Science

The teaching of mathematics supports various areas in science and this proves a strong link for cross curricular teaching. For example, the teaching of statistics in mathematics can be used within science for recording results from an experiment. It will become apparent that the children are confident and consistent in these areas of mathematics when they are implementing them into other subjects across the curriculum.

Computing

Information and communication technology enhances the teaching of mathematics significantly, because ICT is particularly useful for mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software to present information visually, dynamically and interactively, so that children understand concepts more quickly. All the children at Stocks Lane Primary School are encouraged to use ICT within mathematics lessons, whether they are answering questions, solving puzzles or taking part in an investigation. ICT is a stimulating and exciting resource for children to engage in mathematics.

8. Mathematics and inclusion

At Stocks Lane Primary School, we teach mathematics to all children, whatever their ability and individual needs. Mathematics forms part of the school curriculum policy to provide a broad and balanced education to all children. Through our mathematics 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, those with disabilities, those with special gifts and talents and those learning English as an additional language, and we take all reasonable steps to achieve this.

When progress falls significantly outside the expected range, the child may have special educational needs. Our assessment process looks at a range of factors – classroom organisation, teaching materials, teaching style, differentiation – so that we can take some additional or different action to enable the child to learn more effectively. Assessment against the National Curriculum allows us to consider each child's attainment and progress against age related expectations. This ensures that our teaching is matched to the child's needs.

Sometimes mathematical targets are set as part of a child's Individual Education Plan (IEP). Teachers will pay regard to such targets when designing lessons or setting individual tasks in mathematics.

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

9. Assessment

Teachers will assess children's work in mathematics from three aspects (long-term, medium-term and short-term). We use short-term assessments to help us adjust our daily plans. These short-term assessments are closely matched to the statutory requirements.

We make medium-term assessments to measure progress against the key objectives, and to help us plan the next unit of work.

We make long-term assessments towards the end of the school year, and we use these to assess progress against the end of year expectations. We can then set targets for the next school year and make a summary of each child's progress before discussing it with parents and carers. We pass this information on to the next teacher at the end of the year, so that the new school year can be planned. We make the long-term assessments informed by end-of-year tests and ongoing teacher assessments.

Work is marked using our whole school marking policy and verbal feedback is given immediately to the children. (Please see attached marking policy)

10 <u>The Maths Subject Leads</u>

The coordination and planning of the mathematics curriculum are the responsibility of the subject leaders (Miss Critchley KS2 and Mrs Hall EYFS and KS1) who also:

- support colleagues in their teaching, by keeping informed about current developments in mathematics, and by providing a strategic lead and direction for this subject;
- work alongside the headteacher to produce an annual summary report from which the strengths and weaknesses in mathematics can be evaluated, and areas for further improvement identified.
- The quality of teaching and learning in mathematics is monitored and evaluated by the subject leaders as well as the headteacher as part of the school's agreed cycle of monitoring and evaluation.
- A named member of the school's governing body is briefed to oversee the teaching of mathematics.
- Lead the evaluation and the review of the school's Maths policy.

This policy will be reviewed in May 2025.

Signed Chair of Governors:……

Signed Headteacher:……

Date:……

Our Maths Marking Code	
✓	Correct
X	Think again
and	Delete
?	Meaning is unclear
tryangle	Spelling mistake
I	Independent work
R	Additional resources used E.g 100 square, number line
S↑	Lots of adult support
S↓	Some adult support
SM	Self Marked

1. I am ready for a challenge!

2. I can check and correct before my challenge.

3. I can use 3B4ME to correct before I move on.

4. I need some help from an adult.