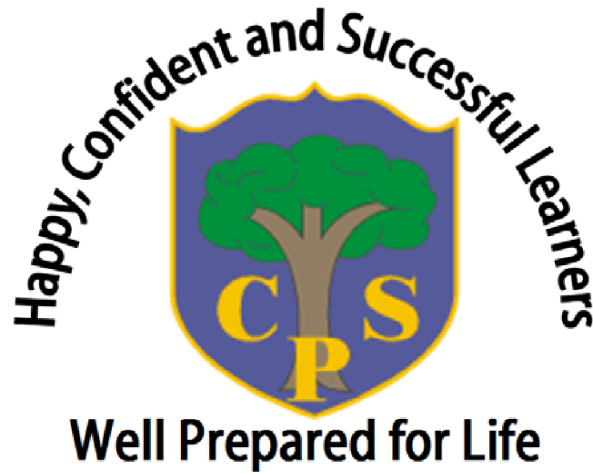




The Coppice Primary School

Mathematics Policy

Mathematics teaches us how to make sense of the world around us through developing an ability to calculate, to reason and to solve problems.

Written by	Lindsey Ashwell, Stephanie Gatfield and Ellie Thurston
Approved by Governors	March 2025
Date for Review	March 2027

Policy on Mathematics for The Coppice Primary School

1.School vision

“Happy, confident and successful learners that are well prepared for life”

2. Purpose of the policy:

2.1 This policy reflects the school values and philosophy in relation to the teaching and learning of ‘Mastery in Mathematics’ at The Coppice Primary School. It sets out a framework within which teaching and non-teaching staff can operate and sets out the school expectations of planning, teaching and assessment. The policy should be read in conjunction with each year group’s curriculum planning.

2.2 This document is intended for:

1. All teaching and school management staff
2. All Teaching Assistants and pupil support staff
3. School Trustees
4. Parents
5. Inspection teams

3 Introduction:

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. At The Coppice, we aim to foster an enjoyment and curiosity of mathematics and for children to develop their knowledge in order to be confident when faced with mathematical challenges in real-life contexts. The policy outlines the ways in which we strive to achieve this.

4. Aims and objectives

4.1

- To ensure a Mastery approach to approach to mathematics
- to promote enjoyment of learning through practical activity, exploration, discussion and problem solving
- to promote confidence and competence with numbers and the number system
- to develop the ability to use and apply mathematics into a situation to solve problems through decision-making, reasoning and problem-solving
- to recognise and use symbolic and graphical representations to express relationships
- to develop a practical understanding of the ways in which information is gathered, processed, presented and interpreted
- to explore features of shape and space, and develop measuring skills in a range of contexts
- to help children understand the importance of mathematics in everyday life
- to develop the cross-curricular use of mathematics in other subjects
- to integrate the use of ICT with mathematical work

4.2 Through this, we will fulfil the National Curriculum aims so children will be able to:

- 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.
- **solve problems** by applying their mathematics to a variety of routine and nonroutine problems with increasing sophistication, including breaking down problems into a series of simpler steps and persevering in seeking solutions.

4.3 Our aims for Mathematics at the Foundation Stage (Nursery and Reception) are for the children to:

- use practical resources and objects to explore number and mathematical concepts
- count reliably with numbers from one to twenty (and beyond)
- place numbers in order and say which number is one more/ one less than a given number
- add and subtract two single-digit numbers and count on or back to find the answer (with an emphasis on whole/part/part and tens frames)
- solve problems, including doubling, halving and sharing
- use everyday language to talk about size, weight, capacity, position, distance time and money to compare quantities and objects and to solve problems
- to recognise, create and describe patterns
- to explore characteristics of everyday objects and shape and use mathematical language to describe them

4.4 Our aims for Mathematics at Key Stage 1 (Y1 and Y2) are:

- to develop pupils' confidence and mental fluency with whole numbers, counting and place value
- to work confidently with numerals, words and the four operations
- to use practical resources (concrete objects and measuring tools)
- to develop their ability to recognise, describe, draw, compare and sort different shapes and use related vocabulary
- to describe and compare different quantities such as length, mass, capacity/volume, time and money
- to secure knowledge of number bonds to 20 and be precise in using and understanding place value
- to read and spell a range of mathematical vocabulary

4.5 Our aims for Mathematics at Lower Key Stage 2 (Y3 and Y4) are:

- to ensure that pupils become increasingly fluent with whole numbers and the four operations, including number facts and the concept of place value (CPA approach)
- to ensure pupils develop efficient written and mental methods and perform calculation accurately with increasingly large whole numbers
- for pupils to develop their ability to solve a range of problems, including with simple fractions and decimal place value
- to 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
- to ensure that they can use measuring instruments with accuracy and make connections between measure and number
- that pupils should read and spell mathematical vocabulary correctly and confidently, using their growing word reading knowledge and their knowledge of spelling
- to ensure that 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

4.6 Our aims for Mathematics at Upper Key Stage 2 (Y5 and Y6) are:

- to ensure that pupils extend their understanding of the number system and place value to include larger integers
- to develop the connections that pupils make between multiplication and division with fractions, decimals, percentages and ratio
- for pupils to 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 (through the CPA approach)
- for pupils to be introduced to the language of algebra as a means for solving a variety of problems
- to teach geometry and measures to consolidate and extend knowledge developed in number
- to ensure that pupils classify shapes with increasingly complex geometric properties and that they learn the vocabulary they need to describe them
- that pupils should read, spell and pronounce mathematical vocabulary correctly

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.

5. Teaching and learning

5.1 The 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 in order to develop their reasoning skills and show understanding. Through using the CPA approach (concrete, pictorial and abstract), children are given the opportunities to use a wide range of practical resources to support their learning. They are also encouraged to use pictorial representations (drawings, number lines, diagrams, bar models) before moving on to using the more formal written methods. Examples of this can be seen in the School's Calculation Strategy Documents which are available on the school website.

5.2 In EYFS there is flexibility to the structure of the Mathematics sessions. Key objectives are taught through short focused daily class input sessions, guided group activities and structured play-based activities, which provide a wide range of rich mathematical experiences to foster mathematical development. The children are provided with opportunities to develop their understanding of number, measurement, pattern, shape and space, through varied activities that allow them to enjoy, explore, practise and talk confidently about mathematics. The school has invested in class sets of Rekenreks to help embed a secure knowledge of early number.

5.3 From Y1 to Y6, the children are taught in single-year group, mixed-ability classes. The specific year group objectives from the National Curriculum form the main teaching focus. In the lesson, all children are taught the same objective so that their learning potential is not capped. Lessons are adapted through support, scaffolded work and the use of manipulatives. A precheck sheet/ activity can be used to provide additional support for children who require further support in accessing the learning. Every lesson follows a lesson structure (*see Appendix 1*). The lesson is structured into three key parts, which are 'do it' (fluency), 'secure it' (further application using variation/reasoning) and 'deepen it' (problem-solving at a deeper level). Challenge questions are carefully planned, allowing those children with a greater depth of knowledge to explore deeper reasoning and application. Planned activities incorporate independent, paired and group work with a key focus on paired discussion and collaborative learning. Grouping may be ability or mixed-ability-based, depending on the activity and the intended outcomes.

5.4 Pupils' recording of their mathematical work will take different forms depending on the nature of the mathematical activity and the purpose of the recording. Children all have maths books with squared paper and pupils will be taught how to set their work out. In KS2, margins in maths books will be used with pages folded in half. Photographs of activities and copies of whiteboard work can also be used as evidence. All work should be completed in pencil.

5.5 In addition to Maths books, all children have a separate fluency book in which fluency and recap work is recorded. This work is a key source for AfL (Assessment for Learning) and can be used to check children's progress and understanding. Where possible, the work is marked together with instant feedback to spot where intervention support may be needed.

5.6 The school's calculation strategy documents outline the methods to be used for teaching addition, subtraction, multiplication, division and times tables, but can be adapted to suit the needs of specific children, depending on whether they have gaps in learning or need their learning extended.

5.7 Where possible, links in other subject areas will be made to maths and opportunities to apply mathematical skills. eg, Timelines (history), data handling (science), observations and

measurements (science), spatial awareness (art), map work and coordinates (geography). Through a creative curriculum, opportunities for cross-curricular work will be built in.

5.9 Oracy skills should be used in all maths lessons where children are given the opportunity to express their thoughts and ideas fluently through speech. In the maths classroom, it means pupils articulating their mathematical thinking and reasoning. Through discussion, pupils develop a deeper understanding of the maths they are learning. Oracy is important in the maths classroom, as it gives pupils the chance to explore and verbalise their ideas and to develop their thinking. It also gives teachers the chance to assess what pupils know and understand and to identify children who may need more support.

6. Fluency skills in mathematics

6.1 EYFS Mastering number programme

EYFS use the Mastering Number programme as their 10-minute fluency starter activity. These whole-class activities use concepts such as subitising, part-whole and composition to help the children's confidence in their number sense.

6.2 KS1 Mastering number, fluency and TTRS

Mastering Number is used in KS1, following on from the sessions completed in Reception. This aims to secure firm foundations in the development of good number sense for all children from Reception through to Year 1 and Year 2. The aim, over time, is that children will leave KS1 with fluency in calculation and confidence with the flexibility of numbers. Teachers should do 4 sessions a week. Children in the summer term are also given individual accounts to 'Times Table Rockstars', enabling them to practice their 2, 5 and 10 times tables.

6.3 KS2 Mastering number and fluency

The teaching and learning of times tables continues in Year 3 with 'Times Table Rockstars', where they learn the 3, 4 and 8 times tables. The remainder of the timetables are taught in Year 4 and then reinforced using TTRS. This is used several times a week to reinforce quick recall of the times tables up to x12. As well as TTRS, children in years 4 and 5 will also use the Mastering Number Programme as part of their fluency sessions. This programme helps pupils in Years 4 and 5 to develop fluency in multiplication and division facts and a confidence and flexibility with numbers which exemplify good number sense. The children also have fluency sessions, which are used to revisit and revise prior learning.

7. Mathematics and Computing

7.1 Information and communication technology enhances the teaching of mathematics significantly with ICT being particularly useful for many mathematical tasks. It also offers ways of impacting on learning which are not possible with conventional methods. Teachers can use software or Internet programs to present information visually, dynamically and interactively, so that children understand and access concepts in different ways.

7.2 A computing room with 30 computers is also available to use (one slot timetabled weekly), along with year group sets of Chromebooks. These may be used to support individual mathematical concepts or as a general revision tool.

7.3 The school subscribes to TTRS (an online learning resource for times tables). All children (from Y2) have a username and password allowing them access to the resource at school and at home. We are aware that for some children, accessing a computer at home is not always possible, so we do allow some children to borrow a Chromebook from the school.

7.4 We subscribe to the Third Space Learning support programme for Year 4, 5 and 6 children. Groups of children can use this programme to support their mathematics learning. This is AI-led, but the individual objectives are selected and set by the class teacher. Individual Chromebooks and a pair of headphones are required for each pupil for each session. This programme will also be used as additional support for our disadvantaged children to help with their progress and attainment in Mathematics.

8. Mathematics and inclusion

8.1 At the Coppice, 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 pupils to make good progress. We strive to meet the needs of those pupils who are disadvantaged, those with special educational needs, those with disabilities, those with special gifts and talents and those learning English as an additional language.

8.2 The needs of individual children are met through the support given to them in the lesson, through adapted and scaffolded work and through adult support. Adaptive teaching enables all children to have access to the teaching and learning. Where there are gaps in learning, these are met through carefully planned interventions – which could be recapping an objective from a previous year, repeating a concept taught in the lesson or pre-teaching a new concept before they meet it in the lesson. ('On Track Maths' resources or White Rose support materials can be used to support TAs with this planning.)

8.3 The most able mathematicians are given opportunities to broaden their understanding through challenges provided within the lessons. Additional investigations and problem-solving activities can also be used. Opportunities are also planned for these children to participate in inter-school competitions held at the local Grammar school (Year Four and Five).

9. Assessment for learning

9.1 Teachers will assess children's work in mathematics from three aspects (long-term, medium-term and short-term). We use short-term assessments to make judgements on the children's understanding and to help us adjust our daily plans. These short-term assessments are matched to the teaching objectives for the three parts (Do it, secure it and deepen it), which are individually colour coded at the end of the lesson with 'Green' (fully achieved), 'Orange' (partly achieved) and 'Pink' (not achieved). This assessment enables 'Wobble' (short-term intervention) work to take place. (*See marking and feedback expectations.*)

9.2 A school tracking system (INSIGHT) is used to track children's achievements and monitor progress. Staff are encouraged to regularly update the tracker using the results from the daily observations, fluency evidence and more formal end-of-unit assessments. NFER and White Rose end-of-unit assessments are used to monitor progress. NFER tests are used in the summer term once all mathematics content has been taught to help give an overall judgement.

9.1 End of KS1 and KS2 tests are carried out in line with National Curriculum guidance. Year Four Multiplication tests are also carried out during the summer term.

10 Resources

10.1 The working space in the classroom should be well organised with a range of resources readily available so that children can easily select the necessary equipment. Maths resources and manipulatives are used to transform abstract mathematical concepts into concrete, hands-on experiences, building deeper conceptual understanding and mathematical fluency. They aid in unlocking thinking, promoting mathematical discussion, and helping learners bridge the gap between physical action and abstract reasoning. Resources can be used to scaffold and provide adaptations to learning. They may be withdrawn as concepts become embedded. Resources should be readily available so a child can access them if they require them to support their learning.

A wide range of ICT software is available to support teaching and learning in Mathematics.

10.2 The Coppice has a long-term maths overview (based on the White Rose overview) which staff use when planning the maths curriculum content. 'Maths No Problem' teacher books are used to help teachers plan their maths lessons using the CPA approach and also help provide ideas for including reasoning and problem solving within the lessons. Some White Rose resources are also used to support teachers with their planning.

11. Homework

11.1 From Y1 -Y6, the school uses WhiteRose homework books, which are aligned to what has been taught in class. Children are given several pages to complete, which will follow on from learning in class (see homework policy). Additionally, in the Spring term, Year Six CGP booklets are used for revision. EYFS provide more practical activities that can parents can complete with their child.

11.2 The Calculation Strategy Documents are available through the school website for parents to refer to if they are unclear on the methods the children are using. (*See homework policy for further information*)

12. Monitoring and review

12.1 Mathematics is led by our Maths Team. As leaders, they support colleagues in their teaching, keep them informed about current developments in mathematics and provide a strategic lead and direction for this subject.

12.2 The Head teacher, Deputy and Maths leaders monitor the teaching of Mathematics through regular drop-ins, to ensure the teaching of Maths follows the policy guidance.

12.3 Maths leaders will fulfil the duties and targets as set out in the Mathematics Action Plan.

12.4 A named member of the school's board of trustees is briefed to oversee the teaching of mathematics. The named trustee meets with the subject leader to discuss the action plan, review progress and partake in learning walks at least three times a year.

12.5 This policy will be reviewed every two years.

Data Protection Statement

The procedures and practices created by this policy have been reviewed in the light of our GDPR Data Protection Policy.

All data will be handled in accordance with the school's GDPR Data Protection Policy.

Policy on Mathematics

Name of policy	Content	Reason for policy	Who does it relate to?	Where is it stored?
Maths	Key information concerning the teaching and learning of Mathematics	To inform all stakeholders on how Mathematics is taught at The Coppice.	Children, Teachers, Parents, Trustees and Ofsted.	School G'Drive

As such, our assessment is that this policy:

Has Few / No Data Compliance Requirements	Has A Moderate Level of Data Compliance Requirements	Has a High Level Of Data Compliance Requirements
	YES	

Signed: **L. Ashwell and S Gatfield**

Reviewed March 2025 To be reviewed March 2027