



Hamsey Green
Primary School



Hamsey Green Primary School

Maths Policy

Reviewed by: Becky Targett

Review date: July 2026

Next Review: July 2027

Our Vision

At Hamsey Green Primary school we value every pupil and the contribution they have to make. As a result we aim to ensure that every child achieves success and that all are enabled to develop their skills to be a success in the future. Mathematics is both a key skill within school, and a life skill to be utilised throughout every person's day to day experiences.

Rationale

Mathematics equips pupils with the uniquely powerful set of tools to understand and change the world. These tools include logical reasoning, problem solving skills and the ability to think in abstract ways. Mathematics is important in everyday life. The jobs our children will apply for have yet to be created – meaning they need to be equipped with the skills to solve any problem they could be faced with.

The National Curriculum for mathematics (2014) describes in detail what pupils must learn in each year group. Combined with our Calculation Policy, this ensures continuity, progression and high expectations for attainment in mathematics. It is vital that a positive attitude towards mathematics is encouraged amongst all of our pupils in order to foster confidence and achievement in a skill that is essential in our society. At Hamsey Green we use a Mastery approach, supported by teacher made resources and White Rose Education. We are committed to ensuring that all pupils achieve mastery in the key concepts of mathematics, appropriate for their age group, in order that they make genuine progress and avoid gaps in their understanding that provide barriers to learning as they move through education.

Aims

We aim to provide the pupils with a mathematics curriculum and high quality teaching to produce individuals who are numerate, creative, independent, inquisitive, enquiring and confident. We also aim to provide a stimulating environment and adequate resources so that pupils can develop their mathematical skills to the full.

Our pupils should:

- Foster a positive attitude to mathematics
- To develop a growth mindset through: independent thinking, perseverance, cooperation and self-confidence through a sense of achievement and success.
- To develop a deeper understanding of mathematics through a process of enquiry and investigation.
- To develop the ability to apply knowledge, skills and ideas in real life contexts outside the classroom, and become aware of the uses of mathematics in the wider world.
- To develop an ability and inclination to work both alone and cooperatively to solve mathematical problems.
- have a well-developed sense of the size of a number and where it fits into the number system
- know by heart number facts such as number bonds, multiplication tables, doubles and halves

- use what they know by heart to figure out numbers mentally
- calculate accurately and efficiently, both mentally and in writing and paper,
- drawing on a range of calculation strategies
- recognise when it is appropriate to use a calculator and be able to do so effectively
- make sense of number problems, including non-routine/'real' problems and identify the operations needed to solve them
- explain their methods and reasoning, using correct mathematical terms
- judge whether their answers are reasonable and have strategies for checking them where necessary
- suggest suitable units for measuring and make sensible estimates of measurements
- explain and make predictions from the numbers in graphs, diagrams, charts and tables
- develop spatial awareness and an understanding of the properties of 2d and 3d shapes

Provision

Pupils are provided with a variety of opportunities to develop and extend their Mathematical skills, including:

- Group work
- Paired work
- Whole class teaching

Pupils engage in:

- the development of mental strategies
- written methods
- practical work
- investigational work
- problem solving
- mathematical discussion
- consolidation of basic skills and number facts
- maths games

We recognise the importance of establishing a secure foundation in mental calculation and recall of number facts before standard written methods are introduced. We use accurate mathematical vocabulary in our teaching and children are expected to use it in their verbal and written explanations.

Mathematics contributes to many subjects and it is important the children are given opportunities to apply and use Mathematics in real contexts. It is important that time is found in other subjects for pupils to develop their Numeracy Skills, e.g. there should be regular, carefully planned opportunities for measuring in science, for the consideration of properties of shape and geometric patterns in art, and for the collection and presentation of data in science, history and geography.

We endeavour at all times to set work that is challenging, motivating and encourages the pupils to think about how they learn and to talk about what they have been learning.

Additional enrichment opportunities are provided for pupils to further develop mathematical thinking e.g. through cooking, music, and maths investigations and games.

Teachers plan problem solving and investigational activities every week to ensure that pupils develop the skills of mathematical thinking and enquiry.

To provide adequate time for developing mathematics, maths is taught daily and discretely. Maths lessons may vary in length but will usually last for about 45 minutes in Key Stage 1 and 60 minutes in Key Stage 2.

Early Years Foundation Stage (EYFS)

We follow EYFS curriculum guidance for Mathematics. However, we are committed to ensuring the confident development of number sense and put emphasis on mastery of key early concepts. Pupils initially explore numbers to 20 and the development of models and images for numbers as a solid foundation for further progress.

Resources

A bank of essential mathematics resources including Numicon and place value counters and more are kept in class cupboards. Further resources relating to key topics are kept in the maths unit.

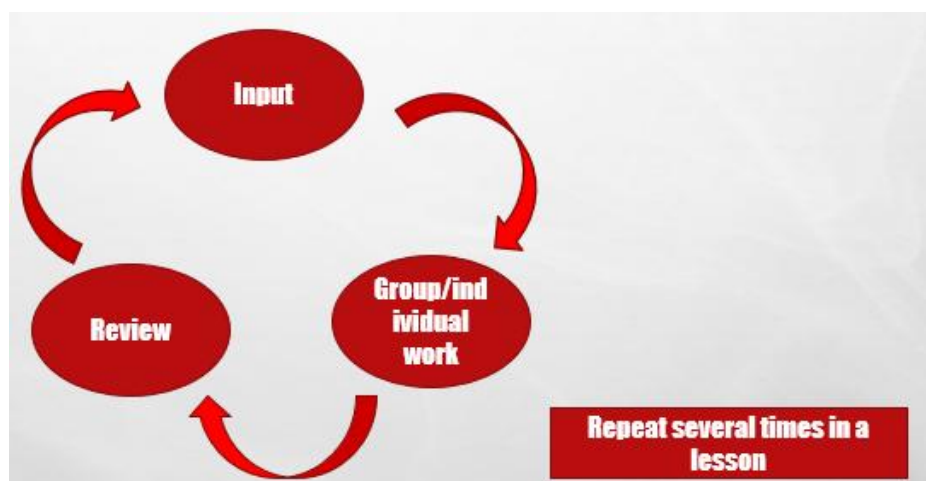
Mastering Number

This year we are continuing our work with the Maths Hub with 'mastering number' programme and we continue the 'refining teaching for mastery' programme. This is designed for EYFS to Year 2 and is a solely practical lesson, working in pairs. The sessions last 15 minutes and are done in support of daily maths lessons. In addition to this Year 3 and 4 are also taking part in the mastering number program.

Teaching Approaches

Teachers follow a 'Maths Mastery' lesson structure approach:

This means children work through the tasks together as a whole class. Interventions are in place prior to lessons or after to allow children to access the learning.



All children should complete a pre-teach activity based on their upcoming learning. This activity should include questions linked to the new concept, key vocabulary displayed at the top of the page, and sentence stems to support pupils in articulating their thinking.

Adults should explicitly model and read the key vocabulary and sentence stems aloud using the visualiser. Pupils should then repeat and read them aloud together to develop their confidence and fluency, supporting the school's oracy focus. This approach ensures that all children are familiar with the language of learning before the lesson begins and are better prepared to engage with new concepts.

Target Setting

Teachers set termly individualised targets for each child which allow children to focus on a key concept identified as posing a problem to the individual. In EYFS these targets are presented as whole class targets.

Assessment

Formative Assessment

Teachers integrate the use of formative assessment strategies such as effective questioning, clear learning objectives, the use of success criteria and effective feedback and response in their teaching.

Summative Assessment

Using termly tests, pupils are assessed every term. The school's progress tracking system is updated termly. The school uses Testbase from Year 2 to year 6 for these assessments. Year 1 continue to use end of Block and Rising Stars.

National Curriculum tests are used at the end of KS2; teachers use past and sample papers to inform their assessments as they prepare pupils for these assessments.

All assessments and teaching informs teachers understanding of a child's ability in maths and this is recorded on our school assessment system.

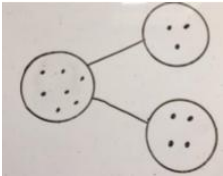
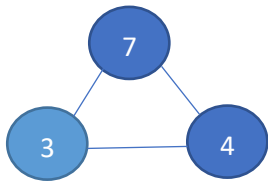
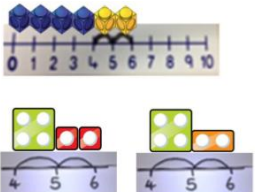
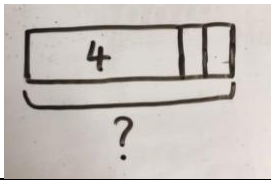
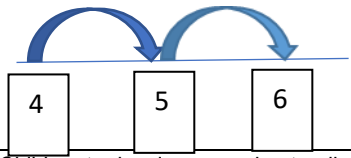
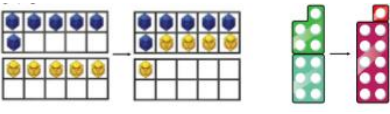
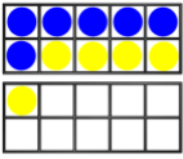
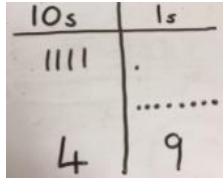
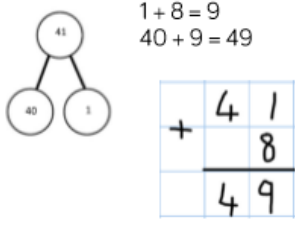
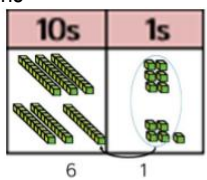
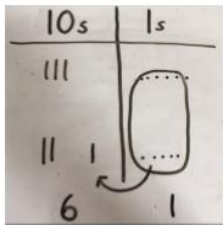
The school's Assessment and Marking Policies inform high quality feedback and pupils' response to it in Mathematics.

Teachers should use Times Tables Rock Stars (TTRS) to support the development of pupils' multiplication fluency and to monitor their progress. In Year 4, pupils will complete a mock Multiplication Check each term. This will help track individual progress over time, identify strengths and areas for development, and highlight pupils who may require additional support or intervention before the statutory Multiplication Tables Check.

Role of the Subject Leader

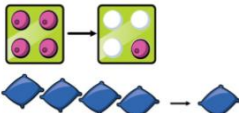
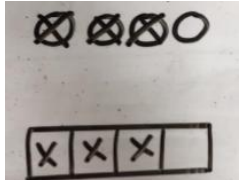
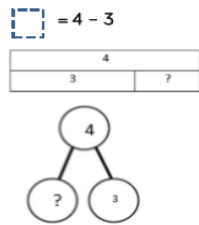
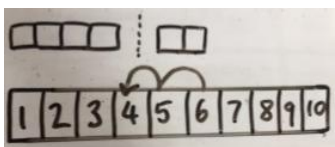
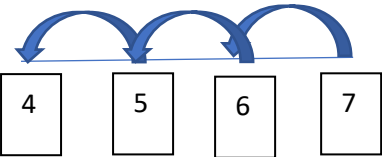
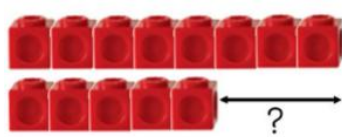
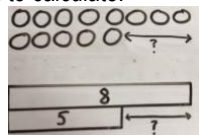
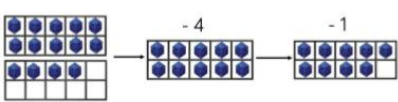
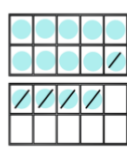
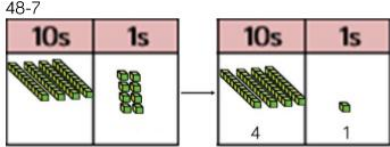
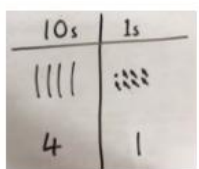
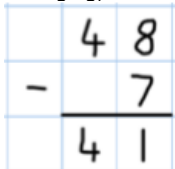
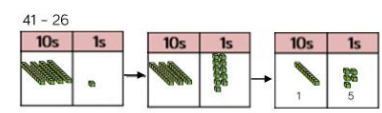
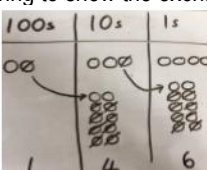
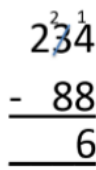
- Ensures teachers understand the requirements of the National Curriculum and helps them to plan lessons.
- Leads by example by setting high standards in their own teaching.
- Prepares, organises and leads CPD and joint professional development.
- Works with the SENDCO and Intervention Co-coordinator.
- Observes colleagues from time to time with a view to identifying the support they need.
- Attends CPD provided by Tewkesbury District Partnership and other providers.
- Keeps parents informed about Mathematics issues
- Discusses regularly with the Headteacher and the mathematics governor the progress of implementing National Curriculum for Mathematics in school
- Deploys support staff to address mathematics related needs within the school.
- Monitors and evaluates mathematics provision in the school by conducting regular work scrutiny, learning walks and assessment data analysis

Addition

Concrete	Pictorial	Abstract
Combining two parts to make a whole (use other resources too e.g. eggs, shells, teddy bears, cars). 	Children to represent the cubes using dots or crosses. They could put each part on a part whole model too 	$4 + 3 = 7$ Four is a part, 3 is a part and the whole is seven 
Counting on using number lines using cubes or Numicon. 	A bar model which encourages the children to count on, rather than count all. 	The abstract number line: What is 2 more than 4? What is the sum of 2 and 4? What is the total of 4 and 2? $4 + 2$ 
Regrouping to make 10; using ten frames and counters/cubes or using Numicon. $6 + 5$ 	Children to draw the ten frame and counters/cubes. 	Children to develop an understanding of equality e.g. $6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$
Partitioning. Continue to develop understanding of partitioning and place value. $41 + 8$ 	Children to represent the base 10 e.g. lines for tens and dot/crosses for ones 	$41 + 8$ 
Continue to develop understanding of partitioning and place value. $36 + 25$ Use columns 	Children to represent the base 10 in a place value chart. (Carrying) 	Expanded $36 + 25 = 30 + 20 = 50$ $5 + 5 = 10$ $50 + 10 + 1 = 61$ Formal method: $\begin{array}{r} 36 \\ +25 \\ \hline 61 \\ 1 \end{array}$
Continue as above moving into 100s	Continue as above moving into 100s	Column: Carrying is done at the bottom $\begin{array}{r} 243 \\ +368 \\ \hline 611 \\ 1 \end{array}$

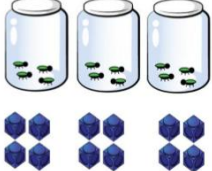
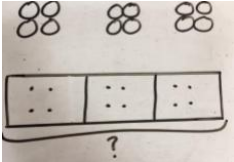
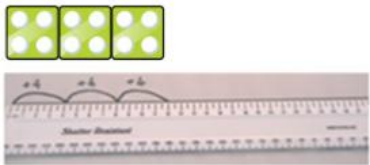
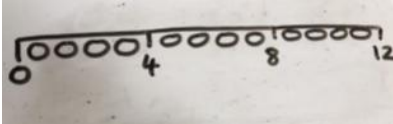
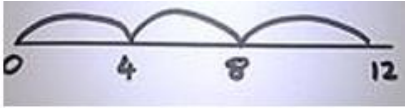
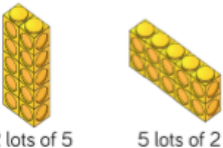
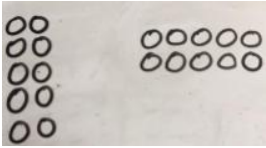
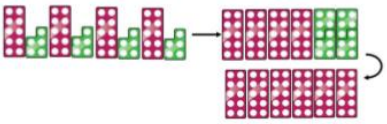
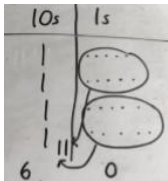
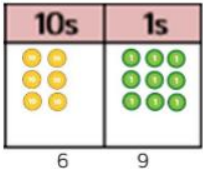
Addition	sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.
Subtraction	take away, less than, the difference, subtract, minus, fewer, decrease.
Multiplication	double, times, multiplied by, the product of, groups of, lots of, equal groups.
Division	share, group, divide, divided by, half.

Subtraction

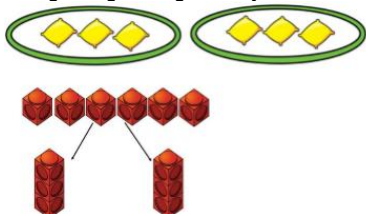
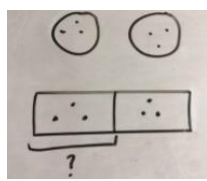
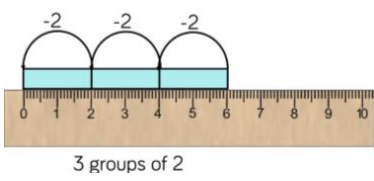
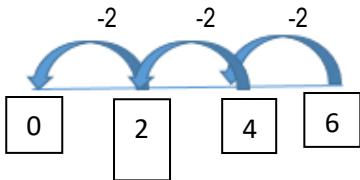
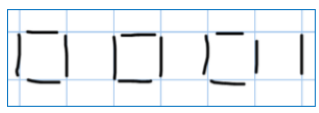
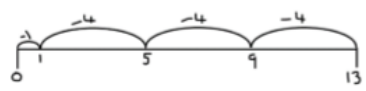
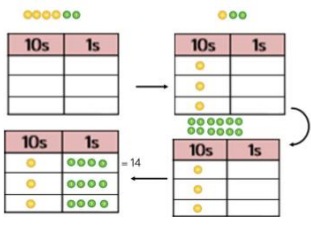
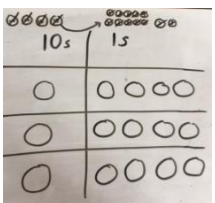
Concrete	Pictorial	Abstract
Physically taking away and removing objects from a whole (ten frames, Numicon, cubes and other items such as beanbags could be used). $4 - 3 = 1$ 	Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used. 	$4 - 3 =$ $\square = 4 - 3$ 
Counting back (using number lines or number tracks) children start with 6 and count back 2. $6 - 2 = 4$ 	Children to represent what they see pictorially e.g. 	Children to represent the calculation on a number line or number track and show their jumps. Encourage children to use an empty number line 
Finding the difference (using cubes, Numicon or Cuisenaire rods, other objects can also be used). 	Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate. 	Find the difference between 8 and 5 $8 - 5$, the difference is $\square$ Children to explore why $9 - 6 = 8 - 5 = 7 - 4$ have the same difference.
Making 10 using ten frames. $14 - 5$ 	Children to present the ten frame pictorially and discuss what they did to make 10. 	Children to show how they can make 10 by partitioning then subtract each part. $14 - 5 = 9$ 4 1 $14 - 4 = 10$ $10 - 1 = 9$
Column method using base 10. $48 - 7$ 	Children to represent the base 10 pictorially. 	Column method or children could count back (No Exchanging) 
Column method using base 10 and having to exchange. $41 - 26$ 	Writing out the columns and remembering to show the exchanging 	Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because $41 = 30 + 11$. 

Addition	sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.
Subtraction	take away, less than, the difference, subtract, minus, fewer, decrease.
Multiplication	double, times, multiplied by, the product of, groups of, lots of, equal groups.
Division	share, group, divide, divided by, half.

Multiplication

Concrete	Pictorial	Abstract						
Repeated grouping/repeated addition 3×4 $4 + 4 + 4$ There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. 	Mental strategies $3 \times 4 = 12$ $3 + 3 + 3 = 12$						
Number lines to show repeated groups- 3×4 	Represent this pictorially alongside a number line e.g.: 	Number line showing repeated addition 						
Use arrays: counters and other objects can also be used. $2 \times 5 = 5 \times 2$ 	Children to represent the arrays pictorially. 	Children to be able to write a range of calculations e.g. $10 = 2 \times 5$ $5 \times 2 = 10$ $2 + 2 + 2 + 2 + 2 = 10$ $10 = 5 + 5$						
Partition to multiply using Numicon, base 10 or Cuisenaire rods. 4×15 	Children to draw out the number they are multiplying moving numbers into the new columns E.g. $15 \times 4 =$ 	Grid method $34 \times 3 =$ <table border="1" data-bbox="1046 1339 1417 1485"> <tr> <td>x</td><td>30</td><td>4</td></tr> <tr> <td>3</td><td>90</td><td>12</td></tr> </table> $90 + 12 = 102$	x	30	4	3	90	12
x	30	4						
3	90	12						
Formal column method with place value counters 3×23 	Same as above	Children to record what it is they are doing to show understanding. $6 \times 23 =$ $\begin{array}{r} 23 \\ \times 6 \\ \hline 138 \\ \hline 11 \end{array}$						

Division

Concrete	Pictorial	Abstract
Sharing using a range of objects. $6 \div 2$ 	Represent the sharing pictorially. 	Mental strategies Children should be encouraged to use their multiplication facts
Repeated subtraction using Cuisenaire rods above a ruler. $6 \div 2$ 	Children to represent repeated subtraction pictorially. 	
$2d \div 1d$ with remainders using lollipop sticks. Cuisenaire rods, above a ruler can also be used. $13 \div 4$ Use of lollipop sticks to form wholes-squares are made because we are dividing by 4. 	Children to represent the lollipop sticks pictorially. There are 3 whole squares, with 1 left over. 	$13 \div 4 = 3$ remainder 1 Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line. '3 groups of 4, with 1 left over' 
Sharing using place value counters. $42 \div 3 = 14$ 	Children to represent the place value counters pictorially. 	Be able to write a variety of calculations. $42 \div 3$ $42 = 30 + 12$ $30 \div 3 = 10$ $12 \div 3 = 4$ $10 + 4 = 14$
Same as above	Same as above	Short division method $\begin{array}{r} 123 \\ 5 \overline{) 615} \end{array}$

Long Division

$$\begin{array}{r} 02 \\ 12 \overline{) 2544} \\ \underline{24} \\ 1 \end{array}$$

Key Language

Addition	sum, total, parts and wholes, plus, add, altogether, more, 'is equal to' 'is the same as'.
Subtraction	take away, less than, the difference, subtract, minus, fewer, decrease.
Multiplication	double, times, multiplied by, the product of, groups of, lots of, equal groups.
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