

OLA Statement of Impact:

Mathematics

Throughout each mathematics unit, teachers check that key knowledge, skills and concepts have been learned and remembered, including content from previous years, to prevent it from being forgotten. Retrieval practice is built into every lesson to interrupt the forgetting curve and secure mathematical knowledge—such as number facts, calculation strategies, mathematical vocabulary and key concepts—in long-term memory. Daily fluency sessions further develop automaticity in number and calculation, enabling pupils to apply their knowledge efficiently and confidently.

At the end of each unit, teachers assess pupils' understanding through classwork, reasoning tasks, problem-solving activities and end-of-unit assessments. Pupils' attainment is measured against the relevant Mastery Keys to determine whether they are working at Age-Related Expectations by the end of the academic year. This is supported by ongoing formative assessment, mathematical discussion and opportunities for pupils to explain and justify their thinking.

By the time pupils leave Key Stage 2, they will:

- ✓ Have developed secure number sense and fluency in key mathematical facts and procedures
- ✓ Have a deep and connected understanding of mathematical concepts and relationships
- ✓ Reason mathematically, making conjectures, justifying ideas and explaining their thinking using appropriate mathematical vocabulary
- ✓ Apply their mathematical knowledge to solve problems in a range of contexts and across the wider curriculum
- ✓ Select efficient strategies and methods when calculating and solving problems
- ✓ Demonstrate resilience, independence and confidence when faced with unfamiliar mathematical challenges
- ✓ Recognise patterns, make connections and use known facts to derive new understanding
- ✓ Understand how mathematics helps us interpret, understand and make informed decisions about the world around us

Our goal is to inspire confident, curious and resilient mathematicians who are fluent in number, secure in their understanding and able to apply their mathematical knowledge with confidence, accuracy and purpose throughout their education and beyond.

Mastery Keys

Reception	Y1	Y2	Y3	Y4	Y5	Y6
-Count reliably to 20 and beyond, recognising the pattern of the counting system. -Recognise, represent and order numbers to 10. -Understand the composition of numbers to 10. -Compare numbers and quantities within 10. -Find one more and one less than a given number. -Recall number bonds within 5. -Recall some number bonds to 10. -Add by combining groups and counting on. -Subtract by taking away and counting back. - Recall doubles within 10. - Find half of a quantity by sharing equally.	- Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs -Represent and use number bonds and related subtraction facts within 20 -Add and subtract 1-digit and 2-digit numbers to 20, including zero	-Count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward -Recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100 -Solve problems with addition and subtraction: using concrete objects and pictorial representations, including those involving numbers, quantities and measures -Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts -Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers -Recognise, find, name and write fractions $\frac{1}{2}$, $\frac{1}{4}$, $\frac{2}{4}$, and $\frac{3}{4}$ of a length, shape, set of objects or quantity	-Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction -Solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction -Write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods -Solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects -Recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators -Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	-Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate -Multiply two-digit and three-digit numbers by a one-digit number using formal written layout - Recognise and use factor pairs and commutativity in mental calculations -Recognise and show, using diagrams, families of common equivalent fractions -Add and subtract fractions with the same denominator -Solve problems involving increasingly harder fractions to calculate quantities, and fractions to divide quantities, including non-unit fractions where the answer is a whole number - Solve problems involving multiplying and adding, including using the distributive law to multiply two digit numbers by one digit: integer scaling problems and harder correspondence problems such as n objects are	-Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction) -Recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) -Identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers -Multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers -Multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000 -Divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context -Recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements	-Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why -Multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication -Divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context -Identify common factors, common multiples and prime numbers -Use their knowledge of the order of operations to carry out calculations involving the four operations -Compare and order fractions, including fractions > 1 -Add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions

			-Compare and order unit fractions, and fractions with the same denominators -Add and subtract fractions with the same denominator within one whole (for example, $5/7 + 1/7 = 6/7$)	connected to m objects.	> 1 as a mixed number [for example, $2/5 + 4/5 = 6/5 = 1\frac{1}{5}$] -Add and subtract fractions with the same denominator and denominators that are multiples of the same number -Multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams -Read, write, order and compare numbers with up to three decimal places - Read and write decimal numbers as fractions [for example $0.71 = 71/100$] -Recognise the per cent symbol (%) and understand that per cent relates to 'number of parts per hundred', and write percentages as a fraction with denominator 100, and as a decimal -Solve problems involving number up to three decimal places - Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	-Multiply simple pairs of proper fractions, writing the answer in its simplest form (for example, $1/4 \times 1/2 = 1/8$) -Divide proper fractions by whole numbers (for example, $1/3 \div 2 = 1/6$) -Multiply one-digit numbers with up to two decimal places by whole numbers -Use written division methods in cases where the answer has up to two decimal places -Recall and use equivalences between simple fractions, decimals and percentages, including in different contexts -Solve problems involving the calculation of percentages [for example, of measures, and such as 15% of 360] and the use of percentages for comparison
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Mathematics Overview

Automaticity

	EYFS	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
	• Subitise quantities within 5 • Count reliably beyond 20 • Understand the composition of numbers to 10 • Compare quantities and sets • Recall number bonds within 5 • Recognise doubles and patterns within number	• Secure number bonds within 10 • Understand composition of numbers to 20 • Recall doubles and corresponding halves within 10 • Identify odd and even numbers • Add and subtract within 10 fluently • Use part-part-whole relationships to solve problems	• Recall addition and subtraction facts within 20 • Use number bonds within and across 10 fluently • Apply doubles and near doubles • Add and subtract mentally using efficient strategies • Count in 2s, 5s and 10s • Develop understanding of multiplication as repeated addition and equal groups	• Recall $2\times$, $3\times$, $4\times$, $5\times$, $8\times$ and $10\times$ multiplication facts • Recall corresponding division facts • Count fluently in multiples of 2, 3, 4, 5, 8 and 10 • Recall number bonds to 100 • Use doubles, halves and near doubles • Apply multiplication and division fact families	• Recall all multiplication facts to 12×12 • Recall all corresponding division facts • Recognise and use square numbers to 12^2 • Use commutativity and inverse relationships • Derive unknown facts from known facts • Apply multiplication and division facts efficiently in calculations	• Identify factors and multiples • Apply divisibility rules for 3, 4, 6, 8, 9 and 12 • Multiply and divide by 10, 100 and 1000 • Scale multiplication and division facts • Find fractions of quantities • Use ratio tables and multiplicative relationships • Apply the distributive law and derive new facts from known facts	• Recall multiplication and division facts automatically • Recall common fraction, decimal and percentage equivalents • Multiply and divide by powers of 10 • Use efficient mental calculation strategies • Apply factors, multiples and prime number knowledge • Use ratio and proportional reasoning • Apply fluency efficiently in arithmetic and problem solving

