Calculations Policy

developed, agreed and adopted by

We aim to teach calculation with understanding, and not just as a process that is to be remembered. This Calculation Policy clarifies progression in calculation with examples which illustrate how the calculation works and supports the development of mathematical concepts.

The expectation from the 2014 National Curriculum is that the majority of pupils will move through the programmes of study at broadly the same pace and this document broadly matches the yearly expectations. However, decisions about when to progress should always be based on the security of pupils' understanding and their readiness to progress to the next stage. Pupils who grasp concepts rapidly should be challenged through being offered rich and sophisticated problems before any acceleration through new content. Those who are not sufficiently fluent with earlier material should consolidate their understanding, including through additional practice, before moving on.

The Aims of the curriculum:

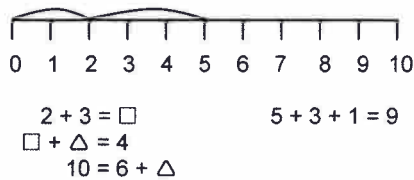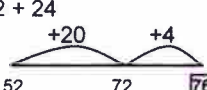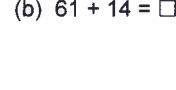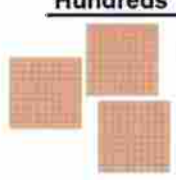The national curriculum for mathematics aims to ensure that all pupils:

- 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.
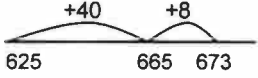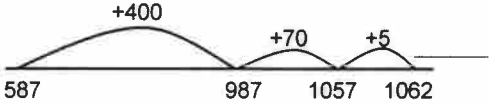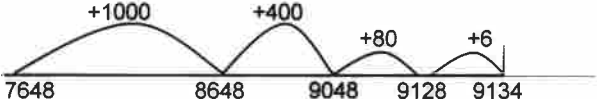
Mathematics is an interconnected subject in which pupils need to be able to move fluently between representations of mathematical ideas. The programmes of study are, by necessity, organised 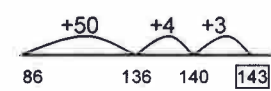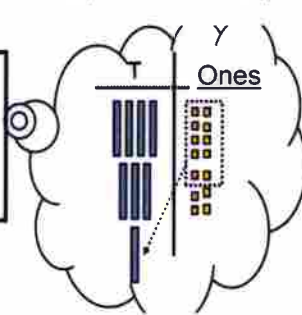into apparently distinct domains, but pupils should make rich connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge to science and other subjects.

The following pages illustrate:

- The development of addition, subtraction, multiplication and division calculations.

- The statutory requirements of the National Curriculum regarding the 4 rules of calculation.

- Mathematical Vocabulary checklist

- Additional guidance (specific to particular schools)

Progression in Addition

Year	What will addition look like?	Italics indicate **non-statutory** guidance from the 2014 National Curriculum
EY FS	Practical, counting objects and relating addition to combining two groups of objects	
Y1	Use of the number line - hopping and recording. (a) `0 1 2 3 4 5 6 7 8 9 10` 2 and 3 equals 5 $2 + 3 = \square$ $5 + 3 + 1 = 9$ $\square + \triangle = 4$ $10 = 6 + \triangle$ Continue to develop pupils' understanding of addition with practical activities using pictures and concrete apparatus, such as bundles of straws, Numicon, counters and Diennes.	*Pupils memorise and reason with number bonds to 10 and 20 in several forms (e.g. 9 + 7 = 16; 16 - 7 = 9; 7 = 16 - 9). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations. Pupils combine and increase numbers, counting forwards and backwards.* *They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, more than and less than, so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.*
Y2	Pupils continue to use the number line to calculate with bigger numbers, partitioning the smaller number and adding the most significant digit first (a) 52 + 24 (b) 61 + 14 = $\square$ +20 +4 52 72 76 (c) 12 + 7 + 4 = $\square$ When children have a good understanding of place value and partitioning, introduce the columnar methods with additions that do not cross the tens boundary using concrete apparatus laid out in a columnar form. **Hundreds | Tens | Ones** 5 2 + 2 6 = 50 + 20 2 + 6 70 8 = 7 8	*Pupils extend their understanding of the language of addition and subtraction to include sum and difference* *Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10, 10 - 7 = 3 and 7 = 10 - 3 to calculate 30 + 70 = 100, 100 - 70 = 30 and 70 = 100 - 30.* *They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (e.g. 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.* *Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers.* *Adding a series of 10s leading to adding multiples of 10 on the number line*
Y3	Pupils continue to use the number line to support mental calculation +50 +4 +3 86 + 57 86 136 140 143 Pupils build on their understanding of place value, partitioning and their concrete experiences to develop columnar methods of addition which bridge the tens, then hundreds, initially in the expanded form. Expanded method It is important that the children have a good understanding of place value and partitioning using concrete resources and visual images to support calculations. The expanded method enables children to see what happens to numbers in the standard written method. `48 + 36` Ones 67+ 83 + 24 42 11 5 80 120 91 125 and check answer	*Pupils practise solving varied addition and subtraction questions. For mental calculations with two-digit numbers, the answers could exceed 100.* *Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent* When the sum of the digits is more than 10 in a column use the term 'carry' to the next column.

	Progressing to 3 digit numbers $$\begin{array}{r} 124 \\ \underline{137} + \\ 11 \\ 50 \\ \underline{200} \\ \underline{261} \end{array}$$	
Y4	Partition one number when adding mentally (a) $625 + 48 =$ +40 +8 625 665 673 Pupils use their understanding of the expanded columnar methods of addition to progress to use the compact method. $$\begin{array}{r} 625 \\ + \underline{48} \\ 673 \\ 1 \end{array} \qquad \begin{array}{r} 1294 \\ + \underline{2345} \\ 3639 \\ 1 \end{array} \qquad \begin{array}{r} 789 \\ + \underline{642} \\ 1431 \\ 11 \end{array}$$	*Pupils continue to practise both mental methods and columnar spacing addition and subtraction with increasingly large numbers to aid fluency.*
Y5	Adding larger numbers mentally, partitioning the smaller number $587 + 475 =$ +400 +70 +5 587 987 1057 1062 Pupils use the compact column method to calculate with decimal numbers, and with larger whole numbers. $$\begin{array}{r} £ 6.72 + \\ 8.56 \\ + \underline{2.30} \\ £\underline{17.58} \end{array}$$	*Pupils practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency* *They practise mental calculations with increasingly large numbers to aid fluency.*
Y6	Adding larger numbers mentally, supported by the number line, partitioning the smaller number (a) $7648+1486 =$ +1000 +400 +80 +6 7648 8648 9048 9128 9134 Pupils add larger whole numbers using the columnar method. They add decimals with differing numbers of decimal places using the columnar method. Pupils may fill empty columns with zeros initially, to preserve place value. (a) $7648 + 1486$ (b) $124.9 + 7.25$ $$\begin{array}{r} 7648 \\ + \underline{1486} \\ 9134 \\ 111 \end{array} \qquad \begin{array}{r} 124.90^* \\ + \underline{7.25} \\ 132.15 \\ 11 \end{array}$$	*Pupils practise addition and subtraction for larger numbers, using the formal written methods of columnar addition and subtraction.* *They undertake mental calculations with increasingly large numbers and more complex calculations.*

Progression in Subtraction

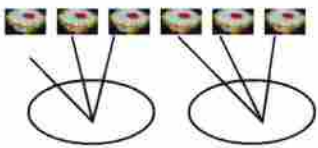| Year	What will subtraction look like?	Italics indicate **non-statutory guidance** from the 2014 National Curriculum
EY FS	Teacher modelling, practical using objects and pictorial representation Practical demonstrations of subtraction relating to 'take away'. e.g. 10 – 1? Use of number tracks Vocabulary of subtraction in practical activities	
Y1	Number tracks leading to number lines introduced for recording 'jumps' back. | 1	2	3	4	5	6	7	8	● | *Can you count back 5? Take away 5.* Difference introduced practically and then on number tracks and lines, e.g. 12 - 7 *Can you make a rod 12 blocks long? My block is 7 blocks long. What's the difference?* difference 0 1 2 3 4 5 6 7 0 1 2 3 4 5 6 7 8 9 10 11 12 Pupils use concrete apparatus to experience take away and difference in practical activities. *Count out 16 straws. If you give your friend 7, how many will you have left?*	*Pupils memorise and reason with number bonds to 10 and 20 in several forms (e.g. 9 + 7 = 16; 16 - 7 = 9; 7 = 16 - 9). They should realise the effect of adding or subtracting zero. This establishes addition and subtraction as related operations.* *Pupils combine and increase numbers, counting forwards and backwards.* *They discuss and solve problems in familiar practical contexts, including using quantities. Problems should include the terms put together, add, altogether, total, take away, distance between, more than and less than, so that pupils develop the concept of addition and subtraction and are enabled to use these operations flexibly.*
Y2	Adding and subtracting ones and tens along a number line and using a number square Pupils practice finding the difference by counting on using a number line. They are able to choose when to take away and when to find the difference when answering a subtraction problem. eg. 55 - 27 0 27 difference 55 +3 +20 +5 27 30 50 55 so 55 – 27 = 28 55 – 27 = 28 27 + ? = 55 55 - ? =27 ? + 26 = 55 -2 -3 -10 28 30 33 43 so 43 – 15 = 28 (Counting Backwards)	*Pupils extend their understanding of the language of addition and subtraction to include sum and difference* *Pupils practise addition and subtraction to 20 to become increasingly fluent in deriving facts such as using 3 + 7 = 10, 10 - 7 = 3 and 7 = 10 - 3 to calculate 30 + 70 = 100, 100 - 70 = 30 and 70 = 100 - 30.* *They check their calculations, including by adding to check subtraction and adding numbers in a different order to check addition (e.g. 5 + 2 + 1 = 1 + 5 + 2 = 1 + 2 + 5). This establishes commutativity and associativity of addition.* *Recording addition and subtraction in columns supports place value and prepares for formal written methods with larger numbers.*

Y3	(a) 81-57 = difference
	
	+3 +20 +1 =24
	57 60 80 81
	
	(b) 81 – 57 = take away
	
	81 = 80 1 "1 take away 7 is not
	- 57 - 50 7 possible so exchange"
	
	       70 11
	      8̶0̶
	    - 50 7
	    20 4 = 24
	
	and check answers with inverse.
	
	Pupils progress to subtract numbers with up to 3 digits
	
	         30 10+
	341- 123 300 4̶0̶ 1
	        -100 20 3
	        200 10 8
	
	or
	         200 100+
	345- 183 3̶0̶0̶ 40 5
	        -100 80 3
	        100 60 2
		Pupils practise solving varied addition and subtraction questions.
		For mental calculations with two-digit numbers, the answers could exceed 100.
		Pupils use their understanding of place value and partitioning, and practise using columnar addition and subtraction with increasingly large numbers up to three digits to become fluent
		
		For the column subtraction method by decomposition use the term 'exchange' not borrow'

Y4	(a) Pupils continue to calculate difference mentally using a number line. (b) Pupils progress to using the compact columnar method for subtraction. $$\begin{array}{r} & 70 \quad 10+ \\ 784 = \quad 700 \quad 80 \quad 4 \\ -\ 56 \quad - \qquad\ \ 50 \quad 6 \\ \hline 700 \quad 20 \quad 8 = 728 \end{array}$$ exchange a ten for 10 ones $$\begin{array}{r} 7\ \ 1 \\ 784 \\ -\ 56 \\ \hline 728 \end{array}$$ Progressing to 4 digit numbers $$\begin{array}{r} & 600 \quad 100+ \\ 2754 \quad = 2000 \ 700 \ 50 \ 4 \\ -1562 \qquad 1000 \ 500 \ 60 \ 2 \\ \hline 1192 \qquad 1000 \ 100 \ 90 \ 2 \end{array}$$ $\longrightarrow$ $$\begin{array}{r} 6\ 1 \\ 2754 \\ \underline{1562} \\ 1192 \end{array}$$	*Pupils continue to practise both mental methods and columnar spacing for addition and subtraction with increasingly large numbers to aid fluency.*
Y5	(a) Pupils continue to calculate difference mentally, supported with a number line. (b) Pupils use the column method to solve increasingly more complex calculations involving many exchanges, and solve subtractions with more than 4 digits $$\begin{array}{r} 1 \\ 6\ 4\ 1\ \ 3\ 1 \\ 75841 \\ -\quad 26915 \\ \hline 48926 \end{array}$$ Pupils subtract decimals with more than one decimal place and with differing numbers of digits. $$\begin{array}{r} 0\ 11\ 12\ \ 1 \\ 123.04 \\ -\quad 85.6 \\ \hline 37.44 \end{array}$$	*Pupils practise using the formal written methods of columnar addition and subtraction with increasingly large numbers to aid fluency.* *They practise mental calculations with increasingly large numbers to aid fluency*
Y6	Pupils continue to find the difference using the number line with increasingly large numbers. (b) 6467 – 2684 $$\begin{array}{r} 5\ 13\ 1 \\ 6467 \\ -\quad 2684 \\ \hline 3783 \end{array}$$ and check answer $$\begin{array}{r} 3783 \\ +\ 2684 \\ \hline 6467 \\ 1\ 1 \end{array}$$ then 324.9 – 7.2 $$\begin{array}{r} 1\ 1\ 8\ 1 \\ 324.90 \\ -\quad 7.25 \\ \hline 317.65 \end{array}$$ and continue to use inverse to check	*Pupils practise addition and subtraction for larger numbers, using the formal written methods of columnar addition and subtraction.* *They undertake mental calculations with increasingly large numbers and more complex calculations.*

Progression in Multiplication

| Year	What will multiplication look like?	Italics indicate non-statutory guidance from the 2014 National Curriculum
EY FS	Jumping along number lines in steps of…. 100 square to look at patterns of multiples. Grouping- counting in equal sized groups.	
Y1	Pupils solve one-step problems involving multiplication by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher.	*They make connections between arrays, number patterns, and counting in twos, fives and tens.*
Y2	Pupils calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs 2 x 5 = 10 12 = 4 x 3 Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts, e.g. 3 friends have 5 pencils each. How many pencils do they have altogether? 5 x 3 = '5 multiplied by 3' '5 times 3' Or '5, three times' 5 x 3	*Pupils use a variety of language to describe multiplication and division.* *Pupils are introduced to the multiplication tables. They practise to become fluent in the 2, 5 and 10 multiplication tables and connect them to each other. They connect the 10 multiplication table to place value, and the 5 multiplication table to the divisions on the clock face.* *They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.* *Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition.* *They begin to relate these to fractions and measures (for example, 40 ÷ 2 = 20, 20 is a half of 40).* *They use commutativity and inverse relations to develop multiplicative reasoning (for example, 4 × 5 = 20 and 20 ÷ 5 = 4).*
Y3	Build on their understanding of repeated addition and arrays to multiply two digits by one digit using tables they know, e.g. 13 x 3 10 x 3 3 x 3 0 30 39 Informal recording of partitioned numbers, 15 x 5 = 10 x 5 and 5 x 5 or 10 x 5 + 5 x 5 Link arrays to introduce grid multiplication to multiply TU by U , e.g. 13 x 6 10 -- 3 6 60 18 6 60 +18 = 78 13 x 6 = 78 Use grid method to multiply TU by U , progressing to formal written methods when appropriate (see year 4) 	x	20	3	 	4	80	12	 Scaling 3 times as tall Relate multiplication to scaling. My string is 12cm long. Cut a piece of string three times longer.	*Pupils continue to practise their mental recall of multiplication tables when they are calculating mathematical statements in order to improve fluency. Through doubling, they connect the 2, 4 and 8 multiplication tables.* *Pupils develop efficient mental methods, for example, using commutativity and associativity (for example, 4×12×5 = 4 × 5 × 12 = 20 × 12 = 240) and multiplication and division facts (for example, using 3×2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (for example, 30×2 = 60, 60÷3 = 20 and 20 = 60÷ 3).* *Pupils develop reliable written methods for multiplication and division, starting with calculations of two-digit numbers by one-digit numbers and progressing to the formal written methods of short multiplication and division.* *Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?*

|		
Y4	Pupils multiply two-digit and three-digit numbers by a one-digit number using formal written layout HTU x U using grid method, e.g. 136 x 5 | x	100	30	6
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5			|
			
			Progressing to the expanded short multiplication method (least significant digit first)
			
			``
			    136
			  X 5
			     30
			    150
			    500
			    680
			``
			
			Moving to the formal written method.
			
			``
			        136
			      x 5
			        680
			         13
			``
				Pupils continue to practise recalling and using multiplication tables (1 to 12) and related division facts to aid fluency.
				Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).
				
				Pupils practise to become fluent in the formal written method of short multiplication.
				
				Pupils write statements about the equality of expressions (for example, use the distributive law 39 × 7 = 30 × 7 + 9 × 7 and associative law (2 × 3) × 4 = 2 × (3 × 4)).
				
				They combine their knowledge of number facts and rules of arithmetic to solve mental and written calculations for example, 2 x 6 x 5 = 10 x 6 = 60.
				.

Y5	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 ThHTU x U using the formal written method,,e.g. 1345 x 6
	
	``
	      1345
	     x 6
	      8070
	       223
	``
	
	Multiply TU x TU using the grid method, e.g. 38 x 72
	
		x	30	8

70	2100	560

2	60	16	
			
			(Add either the columns or rows)
			
			= 2600
			+
			= 76
			——————
			2736
			
			Progressing to the expanded written form for TU x TU
			
			``
			     72
			   x 38
			     16 (2 X 8)
			    560 (70 X 8)
			     60 (2 X 30)
			   2100 (70 X 30)
			   2736
			      1
			``
			
			and then onto the formal written method of long multiplication.
			
			``
			      7 2
			  X 3 8
			    5 7 6 (72 x 8)
			   2 1 6 0 (72 x 30)
			    2 7 3 6
			``
				Pupils practise and extend their use of the formal written methods of short multiplication. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.
				
				They use and understand the terms factor, multiple and prime, square and cube numbers.
				
				Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres.

Y6	Pupils multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication
	
	``
	     2 6 3 5
	  X 2 7
	   1 8 4 4 5 (2635 x 7)
	   5 2 7 0 0 (2635 x 20)
	   7 1 1 4 5
	``
		Pupils practise addition, subtraction, multiplication and division for larger numbers, using the formal written methods of columnar addition and subtraction, short and long multiplication.
		
		They undertake mental calculations with increasingly large numbers and more complex calculations.
		
		Pupils continue to use all the multiplication tables to calculate mathematical statements in order to maintain their fluency.

Progression in Division

| Year	What will division look like?	*Italics* indicate non-statutory guidance from the 2014 National Curriculum
EY FS	Pupils use concrete objects and practical situations to explore sharing to answer questions such as: Share the biscuits out so that everyone has the same number. Cut the sandwich in half. How many pieces are there?	
Y1	Pupils solve one-step problems involving division, by calculating the answer using concrete objects, pictorial representations and arrays with the support of the teacher. Pupils use sharing and grouping to solve division problems. Sharing e.g. 6 cakes are shared equally between 2 people. How many cakes does each person get? Grouping How many pairs of socks can we make from this pile of socks? Count the pairs. 	*Through grouping and sharing small quantities, pupils begin to understand: multiplication and division; doubling numbers and quantities; and finding simple fractions of objects, numbers and quantities.* *They make connections between arrays, number patterns, and counting in twos, fives and tens.*
Y2	Pupils calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication (×), division (÷) and equals (=) signs $$4 \times 3 = 12$$ $$3 \times 4 = 12$$ $$12 \div 4 = 3$$ $$12 \div 3 = 4$$ Pupils solve problems involving multiplication and division, using practical materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts, e.g. 15 pencils are put into boxes of 5. How many boxes of pencils will there be? There will be 3 boxes of 5 pencils Arrays Use arrays to model division. $15 \div 5 = 3$ and $15 \div 3 = 5$	*Pupils use a variety of language to describe multiplication and division.* *Pupils are introduced to the multiplication tables. They practise to become fluent in the 2, 5 and 10 multiplication tables and connect the 5 multiplication table to the divisions on the clock face. They begin to use other multiplication tables and recall multiplication facts, including using related division facts to perform written and mental calculations.* *Pupils work with a range of materials and contexts in which multiplication and division relate to grouping and sharing discrete and continuous quantities, to arrays and to repeated addition.* *They begin to relate these to fractions and measures (for example, 40 ÷ 2 = 20, 20 is a half of 40). They use commutativity and inverse relations to develop multiplicative reasoning (eg, 4 × 5 = 20 and 20 ÷ 5 = 4).*
Y3	Pupils write and calculate mathematical statements for division using the multiplication tables that they know, using mental and progressing to formal written methods. Use knowledge of multiplication facts and repeated addition to answer division questions, e.g. How many 3s are there in 39? Extending to use all tables that pupils know and to explore the idea of the remainder	*Pupils develop efficient mental methods, for multiplication and division facts (for example, using 3 × 2 = 6, 6 ÷ 3 = 2 and 2 = 6 ÷ 3) to derive related facts (for example, 30 × 2 = 60, 60 ÷ 3 = 20 and 20 = 60 ÷ 3).* *Pupils develop reliable written methods for division, starting with calculations of two-digit numbers by one-digit numbers.* *Pupils solve simple problems in contexts, deciding which of the four operations to use and why. These include measuring and scaling contexts, (for example, four times as high, eight times as long etc.) and correspondence problems in which m objects are connected to n objects (for example, 3 hats and 4 coats, how many different outfits?; 12 sweets shared equally between 4 children; 4 cakes shared equally between 8 children).*

Pupils explore the use of scaling as a model for division, e.g.
My ribbon is 24 cm long. Can you cut a ribbon 3 times shorter?

3 times
shorter
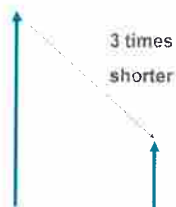
Pupils are introduced to the formal written method of short division with whole number answers, using the image of the array and place value apparatus initially.
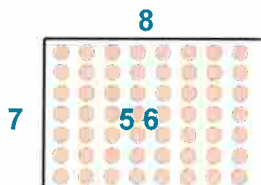
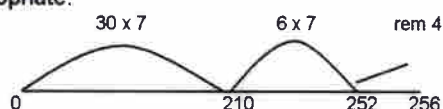Pupils progress to use the written method of short division using chunking on a number line.
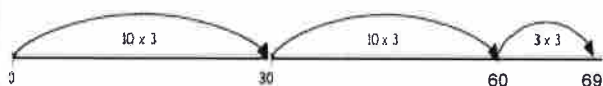
69 divided by 3 or how many groups of 3 make 69

$$96 \div 3$$

10 groups of 3 make 30
10 groups of 3 make 30
3 groups of 3 make 9   answer 23

Y4	Pupils continue to use the number line to support mental division.	Pupils continue to practise recalling and using multiplication tables and related division facts to aid fluency.
	Extend to 3 –digit divided by a 1- digit number 257 ÷ 7 Estimate first, use a number line to count on, if appropriate.	Pupils practise mental methods and extend this to three-digit numbers to derive facts, (for example 600 ÷ 3 = 200 can be derived from 2 x 3 = 6).
	Pupils continue to become fluent with the formal written method of short division with exact answers, e.g.	

	192 ÷ 6 10 x 6 = 60 leading to 30 x 6 = 180
	                 10 x 6 = 60 2 x 6 = _12_
	                 10 x 6 = 60 32 192
	                  2 x 6 = 12	

Y5	The formal concise method for short division is introduced.	Pupils practise and extend their use of the formal written methods of short division. They apply all the multiplication tables and related division facts frequently, commit them to memory and use them confidently to make larger calculations.
		Pupils interpret non-integer answers to division by expressing results in different ways according to the context, including with remainders, as fractions, as decimals or by rounding (for example, 98 ÷ 4 = = 24 r 2 = 24 = 24.5 ≈ 25). Pupils use multiplication and division as inverses to support the introduction of ratio in year 6, for example, by multiplying and dividing by powers of 10 in scale drawings or by multiplying and dividing by powers of a 1000 in converting between units such as kilometres and metres.

Pupils 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,
e.g.
432 school children go on a camping trip. Each tent sleeps five. How many tents will they need to take?

432 ÷ 5 becomes

```
        8   6  r2
              3
  5 | 4   3   2
```

Answer: 86 remainder 2

Answer: They will need to take 87 tents

Y6

Pupils divide numbers up to 4 digits by a two-digit whole number using the formal written method of short division where appropriate, interpreting remainders according to the context, e.g. *496 pupils attend a football tournament. When they are put into teams of 11, how many full teams will there be? Will everyone be in a team?*

496 ÷ 11 becomes

```
          4   5  r1
                5
  1   1 | 4   9   6
```

Answer: there will be 45 full teams of 11 players and one pupil will not have a team.

Pupils progress to expressing their remainders as a fraction,

e.g. *432 litres of water are stored in 15 litre drums. How many full drums of water will there be and what fraction of the final drum will be filled?*
     Answer: there will be 28 full drums and the 29th drum will be 4/5 full.

Progressing to expressing the remainder as a decimal,
 e.g. *£432 was raised at the school fair and is to be shared equally between 15 classes. How much will each class receive?*
     Answer: Each class will receive £28.80

If needed, because a child is struggling to understand the short division method, pupils divide numbers up to 4 digits by a 2 digit number using long division
e.g. *Chocolates are packed in trays of 15. If I have 432 chocolates, how many full trays will I have and how many chocolates will be left over?*

432 ÷ 15 becomes

```
            2   8  r 12
    1   5 | 4   3   2
            3   0   0
            1   3   2
            1   2   0
                1   2
```

Answer: there will be 28 trays of chocolates and 12 chocolates left.

Pupils 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,

Pupils practise division for larger numbers, using the formal written methods of short and long division.