Together Everyone Achieves More

Wreningham School is committed to Safeguarding And promoting the Welfare of children





Wreningham V.C. Primary school Calculation Policy 2023

Review Spring 2025



This policy contains the key pencil and paper procedures that we will teach in school across Key Stages 1 and 2. It has been written to ensure consistency and progression throughout the school and to follow the statutory requirements from the National Curriculum 2014. As children progress at different rates, some may need to use the strategies from previous or future year groups.

Although the focus of this policy is on written recording, it is important to recognise that the ability to calculate mentally lies at the heart of written calculations. During Key Stage One, emphasis is placed upon developing the skills of mental calculation. However mental calculation is not at the exclusion of written recording; it is complementary to it. In every written method there is an element of mental processing. All pupils will be given regular opportunities to record and explain their mathematical thinking.

The policy concentrates on the introduction of standard symbols, the use of the empty number line as a jotting to aid mental calculation and on the introduction of more formal pencil and paper methods. It is important that children do not abandon jottings and mental methods once pencil and paper procedures are introduced. Children will always be encouraged to look at a calculation/problem and decide the best method to use; pictures, mental calculation with or without jottings or formal written procedures.

The long-term aim is for children to be able to select an **efficient** method of their choice whether this be mental or written. They will do this by always asking themselves:

'Can I do this in my head?' 'Can I do this in my head using drawings or jottings?' 'Do I need to use a pencil and paper procedure?'



## ADDITION



Concrete: Bead strings 27 + 30 +10 +10 +10 +100 +100 +100 +100 +100 +100 +100	63 + 16 10 + 6 73 79	
Add with numbers up to 3-di Expanded column method Concrete: Use of base 10, place and place value cards.	<b>gits</b> ce value counters	Key vocabulary: As before, & hundreds boundary, increase, 'carry', expanded. Key number skills needed: Read and write numbers to 1000 in numerals and words. Add 2-digit numbers mentally, incl. those exceeding 100. Add a three-digit number and ones mentally (175 + 8)
47+25 40 7 Progress onto: <u>+ 20 5</u> <u>60+12</u> = 72	$ \begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$	Add a three-digit number and tens mentally (249 + 50) Add a three-digit number and hundreds mentally (381 + 400) Estimate answers to calculations, using inverse to check answers. Recognise place value of digits in 3-digit numbers (hundreds, tens, units)

1	Add much and middle on the Addicities	Kau waabulamu Aa bafana 8 Abawaanda bunduada
	Add numbers with up to 4 digits	key vocabulary. As before a thousands, hundreds,
	Using the compact column	digits and inverse.
	method, adding units first,	Key number skills needed:
	and 'carrying' numbers + 396	Select most appropriate method: mental, jottings or
	underneath the calculation. 3913	written and explain why.
	Pupils should also add money	Recognise the place value of each digit in a four-digit
	and measures.	number. Round any number to the nearest 10, 100 or
	e.g. 3517 + 396 = 3913	1000.
		Estimate and use inverse operations to check
		answers.
		Find 1000 more or less than a given number.
	Add numbers with more than 4 digits including	Key vocabulary: As before & decimal places, decimal
4	money, measures and decimals with different	point, tenths, hundredths and thousandths.
7	numbers of decimal places.	Key number skills needed:
		Add numbers mentally with increasingly large
	$f = 23 \cdot 59 = 23481 = 3 \cdot 65$	numbers.
	$+ \pm 7 \cdot 55 + \frac{1362}{24842} \pm 0.7$	Use rounding to check answers and accuracy.
	€31.14 24843 23.36	Read write order and compare numbers to at least 1
		million and determine the value of each digit
		Pound any number up to 1 000 000 to the nearest 10
		100, 1000, 10,000 and 100,000
	Add several numbers of increasing complexity	Key vocabulary: As before
	······································	Key number skills needed:
	23.361	Perform mental calculations including with mixed
	Add 'zeros' 9 · 0 8 0 3 6 6 8	openations and lance numbers
	where needed $+$ $1 \cdot 3 \cdot 0$ $+ 2 \cdot 0 \cdot 5 \cdot 1$	Use estimation to shack enguers to coloulations and
	to show the 93.511 120579	determine in the context of a machine levels of
	place value	aetermine, in the context of a prodiem, levels of
		accuracy.
		Read, write, order and compare numbers up to 10
		million and determine the value of each digit.
		Round any whole number to a required degree of
		accuracy.

Take away using real objects. Subtract from numbers up to 20. Concrete: Sam had 4 chocolates. He ate 2. How many has he go left? 4-2 = Count back in ones on a numbered number line to take away: 7-4=3 Find the 'difference between' -including 'how many more' and $1 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + 4 + $	Key vocabulary: equal to, take, take away, less, minus, subtract, leaves, difference between, how many more, how many fewer / less than, most, least, count back, how many left and how much less is_? Note: children will begin by taking away from a group of pictures or apparatus, e.g. bead string, objects, cubes. Key number skills needed: Given any number, say one more or one less. Count to and over 100, forward and back, from any number. Represent and use subtraction facts to 20 and within 20. Subtract with one-digit and two-digit numbers to 20 including 0
Begin to write number sentences with - and = sians.	20, including 0.
Subtract with 2-digit numbers Subtract by counting back on a number bead string, blank number line, gradually using more efficient jumps. 47 - 23 -3 $-10$ $-1024$ $27$ $37$ $47Use counting on as a mentalstrategy for subtraction wherenumbers are close togethere.g. 42-38:$	Key vocabulary: As before, & difference, count on, strategy, partition, ten and units. Key number skills needed: Recognise the place value of each digit in a two- digit number. Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100. Subtract using concrete objects, pictorial representations, 100 squares and mentally, including: a two-digit number and ones (37 -6), a two-digit number and tens (78 - 20), and two two- digit numbers (89 - 38) Show that subtraction cannot be done in any order. Recognise and use inverse relationship between addition and subtraction, to check calculations and missing number problems.
Subtract with 2 and 3 digit numbers Use expanded column subtraction method (using base 10 and place value cards initially): 75 - 42 = 72 - 47 = 70 + 5 -40 + 2 30 + 3 $146 = 1$ 72-47 = 100 + 40 + 7 20 + 5 = 100 + 40 + 7 100 + 40 + 7 20 + 5 = 100 + 40 + 6 100 + 40 + 7 20 + 5 = 100 + 40 + 6 100 + 40 + 7 20 + 5 = 100 + 40 + 6 100 + 40 + 6 100 + 40 + 6 100 + 40 + 6 100 + 40 + 6 Money: partition as £1 + 30p + 4p	Key vocabulary: As before, & exchange, decrease, hundreds, value and digit. Key number skills needed: Subtract mentally: a 3-digit number and ones (467 - 8) a 3-digit number and tens (472 - 50) a 3-digit number and hundreds (789 - 400) Estimate answers and use inverse operations to check. Solve problems, including missing number problems

Find 10 or 100 more or less than a given number. Recognise the place value of each digit in a 3-digit number.Subtract with up to 4 -digit numbersCompact column subtraction with exchanging. $874 - 523$ becomes $932 - 457$ becomes $8  7  4  5  7  -4  -4  5  7  -4  -4  -4  -4  -4  -4  -4 $		
Subtract with up to 4 -digit numbersKey vocabulary: As before, & inverse and column. Key number skills needed: Subtract by counting on where numbers are close together or are near to multiples of 10, 100 etc. ( $87-79$ , 202-197) Estimate and use inverse operations to check answer: $35$ 1 Answer: $45$ 7 Answer: $45$ 7 Answer: $351$ Subtract by counting on where numbers are close together or are near to multiples of 10, 100 etc. ( $87-79$ , 202-197) Estimate and use inverse operations to check answers. Solve addition and subtraction 2-step problems in contexts, choosing which operations and methods to use and why. Recognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000. Key vocabulary: As before, & tenths, hundredths, decimal point and decimal. Key numbers skills needed: Subtract numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards on backwards in steps of 10, 100, 1000. Interpret negative numbers in context, counting forwards and backwards with positive and neagative integers through 0.		Find 10 or 100 more or less than a given number. Recognise the place value of each digit in a 3-digit number.
Subtract with up to 4 -digit numbersKey vocabulary: As before, & inverse and column. Key number skills needed: Subtract by counting on where numbers are close Subtract by counting on where numbers are close 		
Compact column subtraction with exchanging. $874 - 523$ becomes $932 - 457$ becomes $351 - 4 - 57$ $-4 - 57$ Answer: 351Answer: 475Subtract with at least 4-digit numbersand money, measures, decimals $777 + 670 - 52 - 52 - 52 - 52 - 52 - 52 - 52 - 5$	Subtract with up to 4 -digit numbers	Key vocabulary: As before, & inverse and column. Key number skills needed:
874 - 523 becomes       932 - 457 becomes         8       7       4         -       5       2         -       5       2         3       5       1         4       7       5         Answer: 351       Answer: 475         Subtract with at least 4-digit numbers and money, measures, decimals       7         3       7       4         7       7       7         3       5       1         4       7       5         Answer: 351       Answer: 475         Subtract with at least 4-digit numbers and money, measures, decimals       8         7       7       7         3       7       7         3       7       7         3       7       7         4       7       5         5       0       2         6       100 or 1000         7       10       5         6       7       6         7       2       7         7       2       7         7       2       7         7       2       8         7	Compact column subtraction with exchanging.	Subtract by counting on where numbers are close together or are near to multiples of 10, 100 etc.
874 $3$ $2$ $-4$ $5$ $7$ $3$ $5$ $1$ $4$ $7$ $5$ $5$ $5$ $6$ $7$ $6$ $6$ $7$ $3$ $5$ $1$ $4$ $7$ $5$ $5$ $7$ $7$ $5$ $7$	874 – 523 becomes 932 – 457 becomes	(87-79, 202-197) Estimate and use inverse operations to check
-5 $2$ $3$ $-4$ $5$ $7$ $3$ $5$ $1$ $4$ $7$ $5$ Answer: 351Answer: 475Answer: 475Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000.Subtract with at least 4-digit numbers and money, measures, decimalsKey vocabulary: As before, & tenths, 	8 7 4 <b>9</b> 3 2	answers.
351475Answer: 351Answer: 475Answer: 475Find 1000 more or less than a given number. Count backwards through zero to include negative numbers. Recognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000.Subtract with at least 4-digit numbers and money, measures, decimalsKey vocabulary: As before, & tenths, hundredths, decimal point and decimal. Key numbers switch increasingly large numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.Subtract with increasingly large and more Count forwards and backwards with positive and negative integers through 0.	- 5 2 3 - 4 5 7	contexts, choosing which operations and methods
S 3 14 7 3Answer: 351Answer: 475Answer: 351Answer: 475Subtract with at least 4-digit numbers and money, measures, decimalsRecognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000.Subtract with at least 4-digit numbers and money, measures, decimalsKey vocabulary: As before, & tenths, hundredths, decimal point and decimal. Key numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards with positive and negative integers through 0.Subtract with increasingly large and moreThe problems in context, counting forwards and backwards with positive and negative integers through 0.		to use and why.
Answer: 351Answer: 475Count build a strikt of the include negative numbers. Recognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000.Subtract with at least 4-digit numbers and money, measures, decimalsKey vocabulary: As before, & tenths, hundredths, decimal point and decimal. Key numbers with increasingly large numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.Subtract with increasingly large and moreKey versition and best methods to use and with positive and negative integers through 0.		Find 1000 more or less than a given number.
Answer: 351 Answer: 475 Recognise the place value of each digit in a four- digit number. Round any number to the nearest 10, 100 or 1000. Subtract with at least 4-digit numbers and money, measures, decimals $Key$ vocabulary: As before, & tenths, hundredths, decimal point and decimal. Key number skills needed: Subtract numbers mentally with increasingly large numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.		numbers
Subtract with at least 4-digit numbers and money, measures, decimals       Round any number to the nearest 10, 100 or 1000.         Subtract with at least 4-digit numbers and money, measures, decimals       Rey vocabulary: As before, & tenths, hundredths, decimal point and decimal.         77769       72.5       72.5         6796.5       728928         800 any number subtraction multi-step problems in context, deciding which operations and best methods to use and why.         Read, write, order and compare numbers to at least 1 million and determine the value of each digit.         Count forwards or backwards in steps of 10, 100, 1000, 10,000         Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.	Answer: 351   Answer: 475	Recognise the place value of each digit in a four-
Round any number to the nearest 10, 100 or 1000.Subtract with at least 4-digit numbers and money, measures, decimalsImage: Subtract with at least 4-digit numbers and money, measures, decimalsImage: Subtract with at least 4-digit numbers and money, measures, decimalsImage: Subtract with increasingly large numbers.Image: Subtract numbers mentally million and subtraction multi-step problems in context, deciding which operations and best methods to use and why.Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000Image: Subtract with increasingly large and moreImage: Subtract wi		digit number.
Subtract with at least 4-digit numbers and money, measures, decimals       Key vocabulary: As before, & tenths, hundredths, decimal point and decimal.         7/16900       7/16900       10000         -372.5       -2128       28928         6796.5       28928       Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why.         Read, write, order and compare numbers to at least 1 million and determine the value of each digit.       Count forwards or backwards in steps of 10, 100, 1000, 10,000         Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.       Note the positive and negative integers through 0.		Round any number to the nearest 10, 100 or 1000.
and money, measures, decimals	Subtract with at least 4-digit numbers	Key vocabulary: As before, & tenths,
7       6       7       7       6       7       7       7       6       7       7       7       6       7	and money, measures, decimals	hundredths, decimal point and decimal.
Subtract with increasingly large and more Subtract numbers mentally with increasingly large numbers. Use rounding and estimation to check answers to calculations. Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Kay vecebulary: As before		Key number skills needed:
<ul> <li>Numbers.</li> <li>Numbers.</li> <li>Use rounding and estimation to check answers to calculations.</li> <li>Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why.</li> <li>Read, write, order and compare numbers to at least 1 million and determine the value of each digit.</li> <li>Count forwards or backwards in steps of 10, 100, 1000, 10,000</li> <li>Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.</li> </ul>		Subtract numbers mentally with increasingly large
- 372.5       - 2128         6796.5       - 28928         Ose rounding and estimation to check answers to calculations.         Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why.         Read, write, order and compare numbers to at least 1 million and determine the value of each digit.         Count forwards or backwards in steps of 10, 100, 1000, 10,000         Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.	'7'X'69.0 3X'05'6	numbers.
6796.5       28928         Solve addition and subtraction multi-step problems in context, deciding which operations and best methods to use and why.         Read, write, order and compare numbers to at least 1 million and determine the value of each digit.         Count forwards or backwards in steps of 10, 100, 1000, 10,000         Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.	-372.5 - 2128	calculations
problems in context, deciding which operations and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.	6796.5 78978	Solve addition and subtraction multi-step
and best methods to use and why. Read, write, order and compare numbers to at least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Subtract with increasingly lange and more		problems in context, deciding which operations
Read, write, order and compare numbers to at least 1 million and determine the value of each digit.         Count forwards or backwards in steps of 10, 100, 1000, 10,000         Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0.         Subtract with increasingly large and more		and best methods to use and why.
least 1 million and determine the value of each digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Subtract with increasingly lange and more		Read, write, order and compare numbers to at
digit. Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Subtract with increasingly large and more		least 1 million and determine the value of each
Count forwards or backwards in steps of 10, 100, 1000, 10,000 Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Subtract with increasingly lange and more		digit.
Interpret negative numbers in context, counting forwards and backwards with positive and negative integers through 0. Subtract with increasingly lange and more Key vocabulary: As before		Count forwards or backwards in steps of 10, 100, 1000, 10,000
Torwards and backwards with positive and negative integers through 0.		Interpret negative numbers in context, counting
Subtract with increasingly large and more Key vocabulary: As before		Torwards and backwards with positive and
	Subtract with increasingly large and more	Key vocabulary: As before
complex numbers and decimal values Key number skills needed:	complex numbers and decimal values	Key number skills needed:
Solve addition and subtraction multi-step	, 9 <b>9</b>	Solve addition and subtraction multi-step
32004 problems in context, deciding which operations	32004	problems in context, deciding which operations
and methods to use and why.		and methods to use and why.
Y 10     5     3/4     1     9     1 <th1< th="">     1     1     1     <th1< th=""><th>1719 - 1719 - 1719</th><th>Read, write, order and compare numbers up to 10</th></th1<></th1<>	1719 - 1719 - 1719	Read, write, order and compare numbers up to 10
- 36 · 08 kg 30285 million and determine the value of each digit.	- 36 · 08 kg 30285	million and determine the value of each digit.
69·339kg VVLVV Round any whole number to a required degree of	$69 \cdot 339 k_{0}$	Pound any whole number to a required degree of
accuracy.	J	Round any whole humber to a required degree of
Use negative numbers in context, calculating		accuracy.

## MULTIPLICATION

Multiply with real objects, arrays and pictorial	Key vocabulary: groups of, lots of, times,
representations.	array, altogether, multiply, total and count up
How many legs will 3 teddies have?	in
	Key skills for multiplication:
2 + 2 + 2 = 6	Count in 25, 55 and 105.
	Solve 1-step problems involving multiplication, by
There are 3 sweets in one bag.	calculating the diswer using concrete objects,
How many sweets are in 5 bags	pictorial representations and arrays with the
3+3+3+3	support of the teacher.
$\begin{pmatrix} \bullet \\ \bullet \end{pmatrix} \begin{pmatrix} \bullet \\ \bullet \end{pmatrix} = 15$	Make connections between arrays, number
	parterns, and counting in twos, fives and tens.
	Begin to understand doubling using concrete
	objects and pictorial representations.
Multiply using arrays and repeated addition.	Key vocabulary: As before, a multiplied by,
	column, row, repeated addition, commutative,
<b>Repeated</b> 0 6 12 18 24	sets of, equal groups, _ times as Dig as, once,
	twice, three times etc.
multiply:	Key skills for multiplication:
	Count in steps of 2, 3 and 5 from 0, and in 10s
Use both concrete and pictorial representations	from any number.
ot arrays.	Recall and use multiplication facts from the 2, 5
	and 10 multiplication tables, incl. recognising odds
🗰 🗰 🚧 💏 Multiplication Array	and evens.
4 Rows of 5 equals 20 symbols in total	Write and calculate number statements using the
	x and = signs.
Multiplication Sentence	Show that multiplication can be done in any order
₩ ₩ ₩ ₩ ₩ 4 X 5 = 20	(commutative).
Think of the Multiplication sign as meaning "Rows of"	Solve a range of problems involving multiplication,
	using materials, arrays, repeated addition, mental
	methods, and multiplication facts.

Multiply 2-digits by a single digit number using the proportional grid method.Children will approximate first and use visual images of the grid with arrays and Numicon or base 10 to deepen understanding.10106				ing Key vocabulary: As before, & partition, grid method, multiple, product, tens, units and value. Key skills for multiplication: Recall and use multiplication facts for the 2, 3,
				5, 8 and 10 multiplication tables, and multiply multiples of ten.
3	********* ********* ******	********* ********* ****	***** ****** ***	Write and calculate number statements using th multiplication tables they know, incl. 2-digit x single-digit, drawing upon mental methods, and
<u>х</u> З	10         10           30         30	<b>6</b> 18 30	0+30+18=78	progressing to reliable written methods. Solve multiplication problems, including missing number problems. Develop mental strategies using commutative law (e.g. 4 × 12 × 5 = 4 × 5 × 12 = 20 × 12 = 240)

the grid method.	t by a single dig	it using	Key vocabulary: As before, & square, factor, integer, decimal. Key skills for multiplication:
If children are confident with the short method for addition they can add directly under the grid (digits must be in lined up correct columns.) If not, produce a separate addition calculation. $\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$			Count in multiples of 6, 7, 9, 25 and 1000 Recall multiplication facts for multiplication tables up to 12x12. Recognise place value of digits in up to 4-digit numbers Use place value, known facts and derived facts to multiply mentally, e.g. multiply by 1, 10, 100, by 0, or multiply 3 numbers. Use commutativity and other strategies in mental calculations $3 \times 6 = 6 \times 3$ , $2 \times 6 \times 5 = 10 \times 6$ , $39x7 = 30 \times 7 + 9 \times 7$
Multiply 4-digit numb 1325 x 5 25 100 1500 + 5000 6625	oers by 1 or 2 d (5 x 5) (20 x 5) (300 x 5) (1000 x 5)	ligits. 1	Key vocabulary: As before, & cubed, integer, square, factor, decimal and grid multiplication. Key skills for multiplication: Identify multiples and factors, using knowledge of multiplication tables to 12×12. Solve problems where larger numbers are decomposed into their factors. Multiply and divide integers and decimals by 10, 100, 1000. Recognise and use square and cube numbers and their notation.

Use short multiplication and multiply decimals with a single digit number.					Key vocabulary: As before, & tenths, hundredths, short/long multiplication and 'carry.' Key skills for multiplication: Multiply multi-digit numbers, up to 4-digit x 2- digit using formal long multiplication. Perform mental calculations with mixed operations and large numbers. Estimate answers using round and approximation and determine levels of accuracy.
Start with the unit one's digit first.         3       2       7         ×       4       3       1       9         1       3       0       8       2       5       5       2         1       2       1       7       7       7       7					
LONG MULTIPLICATION:	124 × 1 × 7 2 4 3 2 1 1 Ans	26 b 2 2 2 7 4 8 2 2 7 4 8 2 2	ecomes 4 6 4 0 4 3224		- Round any integer to a required degree of accuracy.

## DIVISION



	Solve problems in context using materials, arrays, repeated addition, mental methods, multiplication and division facts.
Divide 2-digit numbers by a single digit (no	Key vocabulary: As before & chunking and
remainders in the final answer)	multiple.
Continue to explore sharing and grouping.	Key number skills needed:
How many times does 3 go into 5? It goes into 5 once and has a remainder of 2. 19 How many times does 3 go into 27? It goes into 27 nine times and has no remainder.	Recall and use multiplication/ division facts for 2, 3, 4, 5, 8, 10 multiplication tables (through doubling, connect the 2, 4 and 8s). Write and calculate number statements for multiplication and division using multiplication tables that they know, including for 2-digit numbers x 1-digit numbers. Solve problems, in contexts, and including missing number problems, involving multiplication and division.
Children may use pictorial aids for support with table facts and remainders.	multiplication and division facts (e.g. using $3 \times 2 = 6, 6 \div 3 = 2$ and $2 = 6 \div 3$ ) to derive related facts $(30 \times 2 = 60, so 60 \div 3 = 20$ and $20 = 60 \div 3$ ).

	Divide up to 3-digit numbers by a single digit	Key vocabulary: As before & divisible by, carry,
	(without remainders)	Key number skills needed:
	SHORT DIVISION:	Recall all multiplication and division facts up to 12 x 12. Use place value, known and derived facts to multiply
	872 ÷ 4 = 185 ÷ 4 =	and divide mentally, incl. multiplying and dividing by 10 and 100 and
		Use short division with exact answers.
	218 037	Extend mental methods to 3-digit numbers, deriving
	10732 $51035$	facts, for example 200 × 3 = 600 so 600 ÷ 3 = 200
	4012 51105	Solve 2-step problems in contexts, choosing the
		numbers. This should include correspondence questions
	Children can make use of bead strings to aid	such as three cakes shared equally between 10
	division facts.	children.
(	Divide up to 4 digits by a single digit, including	Key vocabulary: As before & quotient, prime number,
	those with remainder answers.	prime factors and composite number (non - prime)
$\checkmark$	SHORT DIVISION:	Key number skills needed:
		to 12 x 12 *Tdentify multiples and factors of any
	5309 ÷ 8 =	number.
		Multiply and divide whole numbers and those involving
	0663r5	decimals by 10, 100 and 1000.
	x) 5 <sup>5</sup> 3 <sup>5</sup> 0 <sup>2</sup> 9	Work out if numbers to 100 are prime, recalling primes
		Express remainder answers as fractions decimals or
		rounded numbers, as appropriate to the context of the
		problem.

Divide at least 4-digit numbers by 1 or 2	Key vocabulary: As before, & common factor
digits (incl. decimal numbers / quantities)	Key number skills needed:
SHORT DIVISION:	Use multiplication and division facts for all numbers to
496 ÷ 11 becomes	12 x 12 for more complex calculations.
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Identify common factors, common multiples and prime numbers *Solve problems which require answers to be rounded to specified degrees of accuracy, and remainders to be expressed as rounded numbers,
Answer: 45 <sup>1</sup> / <sub>11</sub>	fractions or decimals.
LONG	Use estimation to check answers to calculations.
DIVISION:	
Using short division bus stop method	
For example:	
0 1 2 9	
1 3 1 6 7 9	
We don't know the 13 times table but we know 1x13 and 10x	
13 and half of that which is 5x13. This gives us an idea of	
where to look	
13/1 <sup>1</sup> / <sub>1</sub> <sup>2</sup> 9 <sup>r</sup> / <sub>2</sub>	
1 3 (1×13) 2 6 (2×13)	
(3 × 13) ( Use known (5) (* × 13) ( multiples (	
11 7 (9x13) 13	
13 ( LOX13)	
+++++++++++++++++++++++++++++++++++++++	
2b 30 37 Eldsea surgle	
+2 r 2 to gird the	
117 119 remainder to	