Calculation Policy

Years 1–6

NCETM
NATIONAL CENTRE FOR EXCELLENCE IN THE TEACHING OF MATHEMATICS

MATHSHUBS
BUCKS, BERKS AND OXON

Calculation Policy

Introduction

At Great Milton Primary School, we follow the White Rose Scheme of Learning for Mathematics and the Mastering Number Programme.

Our Calculation Policy is broken down into sections that cover each of the four operations; addition, subtraction, multiplication and division, as well as times tables.

This policy should be read in conjunction with our Mastering Number Overview document.

Calculation Policy

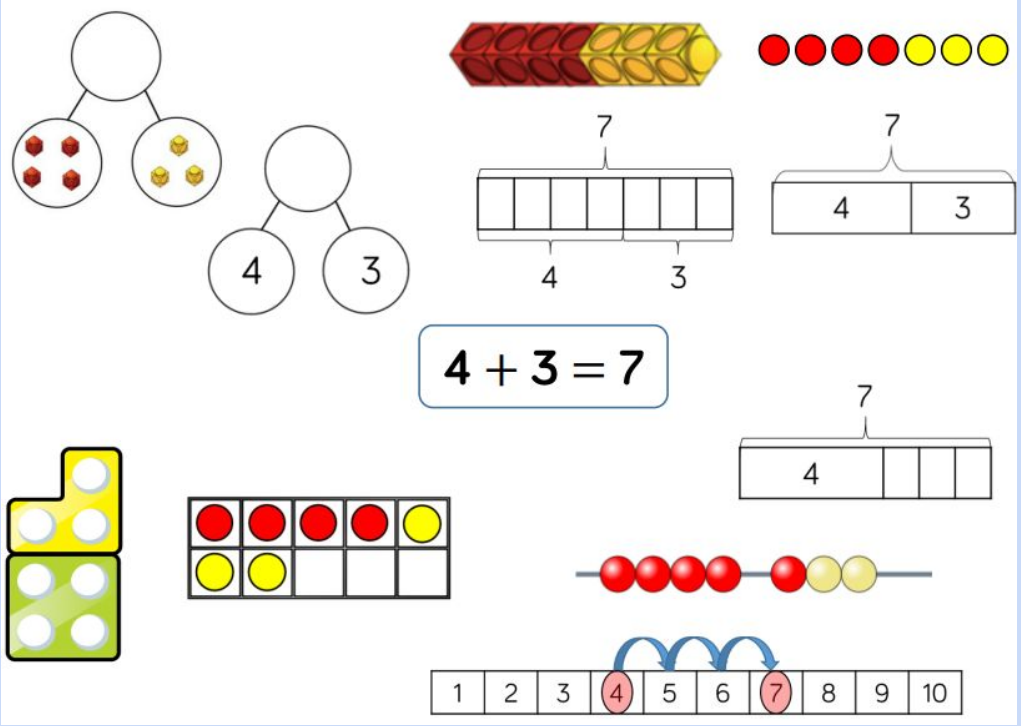
Addition

Year Group	Skill	Models and Representations
1	Add two 1–digit numbers within 10	Part– whole model, bar model, numicon, tens frames (within 10), bead strings (10), number tracks, rekenrek
1	Add 1 and 2–digit numbers within 20	Part– whole model, bar model, numicon, tens frames (within 20), bead strings (20), number tracks, number lines (labelled), straws, rekenrek
2	Add three 1–digit numbers	Part–whole model, bar model, tens frames (within 20), numicon
2	Add 1 and 2–digit numbers within 100	Part–whole model, bar model, number lines (labelled), number lines (blank), straws, hundred square, bead strings (100)
2	Add two 2–digit numbers	Part–whole model, bar model, number lines (blank), straws, base 10, place value counters
3	Add with up to 3–digits	Part–whole model, bar model, base 10, place value counters, place value grids, column addition
4	Add with up to 4–digits	Part–whole model, bar model, base 10, place value counters, place value grids, column addition
5	Add with more than 4–digits	Part–whole model, bar model, place value counters, place value grids, column addition
5	Add up to 3 decimal places	Part–whole model, bar model, place value counters, place value grids, column addition

Calculation Policy

Year 1

Skill: add two 1-digit numbers within 10



Adding numbers to 10 can explored through both aggregation and augmentation.

Aggregation is supported through

- Part- Whole model
- Bar model (discrete/ continuous)
- Numicon
- Tens frame

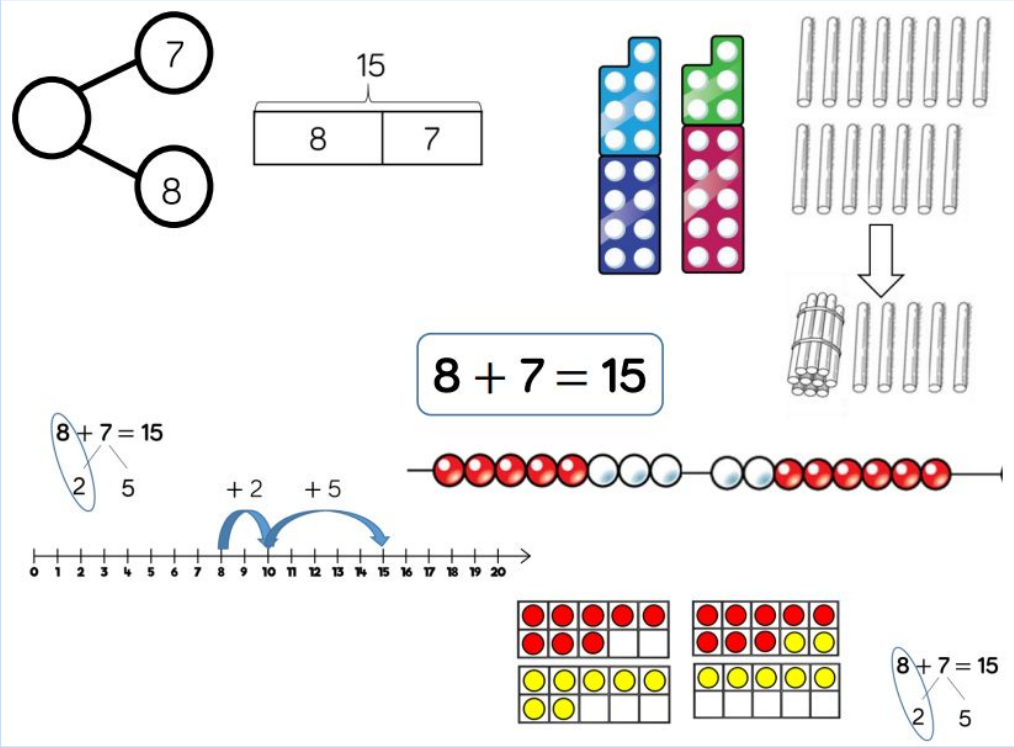
Augmentation is supported through

- Bar model (combination)
- Tens frame
- Bead string
- Number track

Calculation Policy

Year 1/2

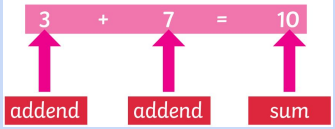
Skill: add 1 and 2-digit numbers within 20



When adding numbers that cross 10, highlight that 10 ones is equal to 1 ten.

To represent this exchange, varied manipulatives can be used.

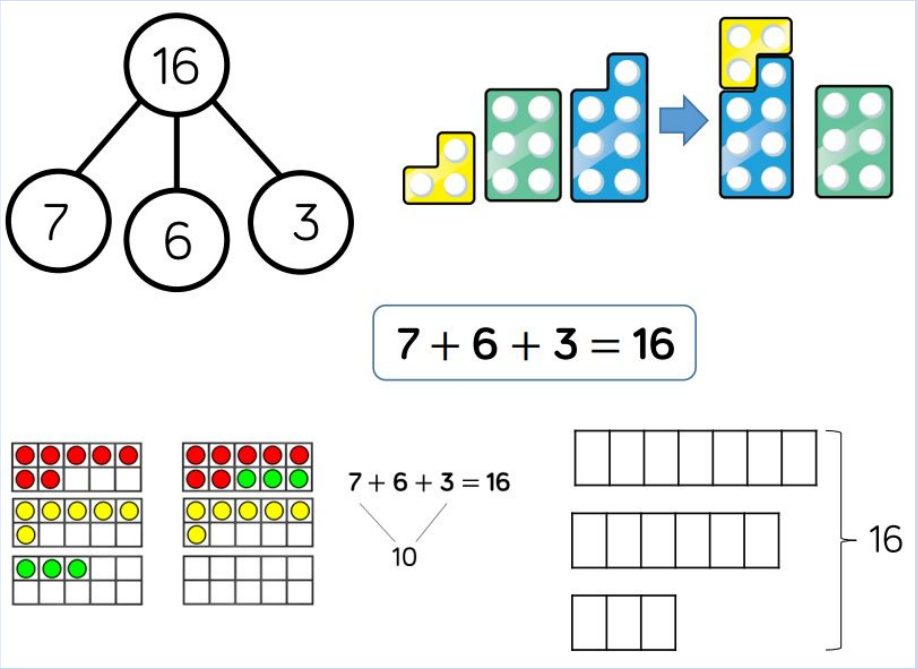
Using concrete resources alongside number lines, supports children in their understanding of how to partition their jumps.



Calculation Policy

Year 2

Skill: add three 1-digit numbers



When adding three 1-digit numbers, encourage efficient methods by looking for number bonds to 10 or doubles.

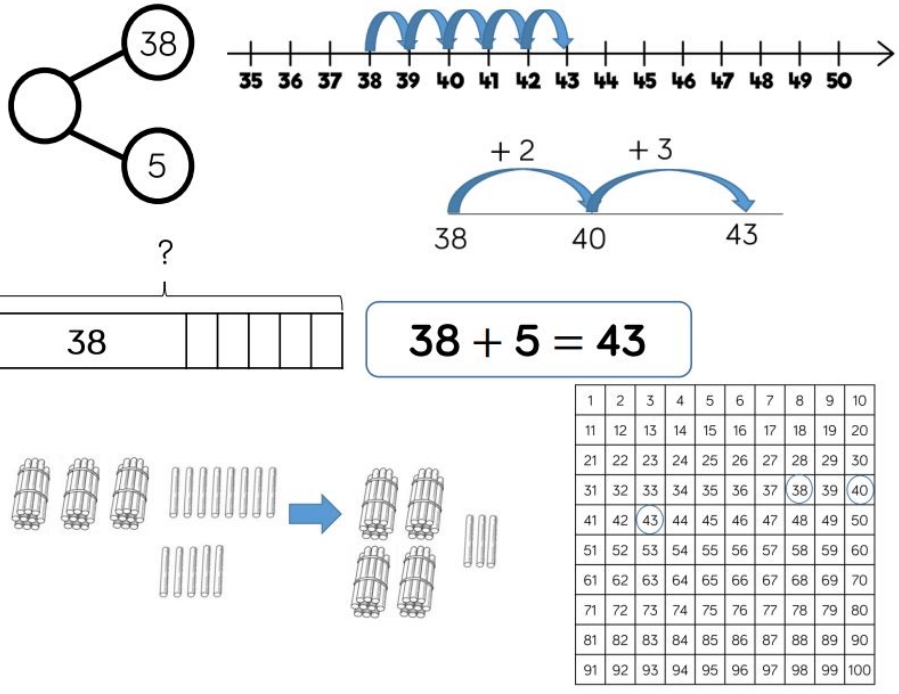
This method helps to support children's understanding of commutativity.

Using manipulatives that highlight number bonds to 10 are an effective resource when adding three 1-digit numbers, eg; Numicon and tens frames.

Calculation Policy

Year 2/3

Skill: add 1-digit and 2-digit numbers to 100



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

When adding 1-digit to 2-digit numbers, encourage the children to begin at the greater number and then count on.

Using their knowledge of number bonds within 20, they can add more efficiently eg:

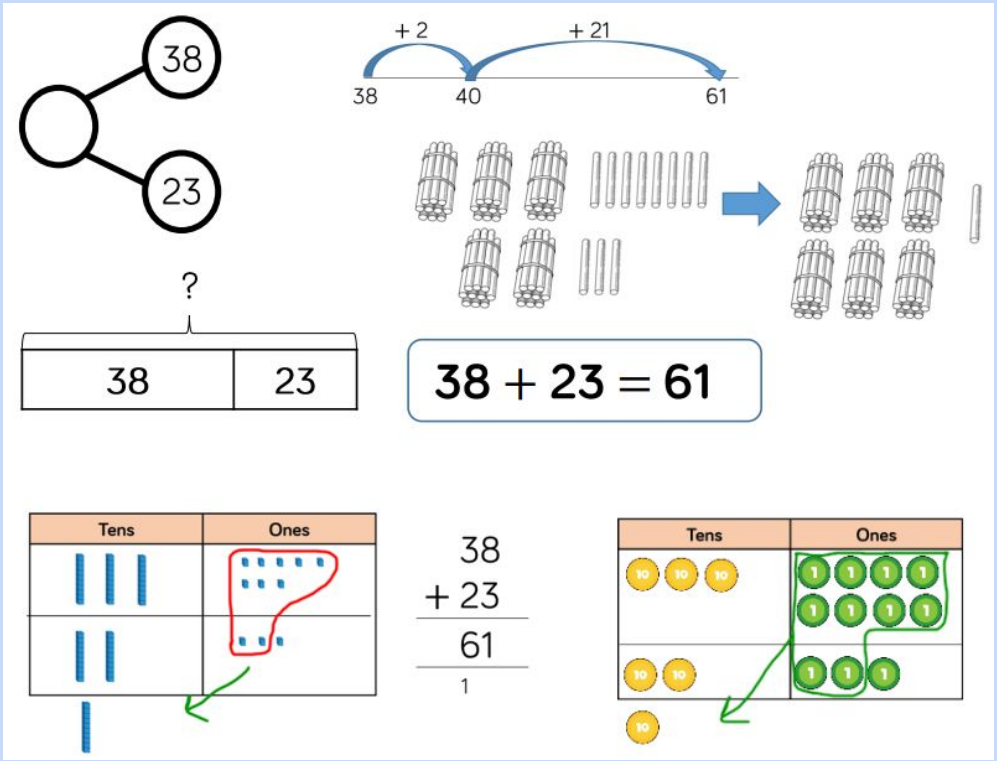
- 'I know that 7 and 5 make 12, so I also know that 27 and 5 make 32'.

Hundred squares and straws can help children to recognise their bonds to 10.

Calculation Policy

Year 2/3

Skill: add two 2-digit numbers to 100



When adding two 2-digit numbers to 100, encourage the children to use the formal column method alongside:

- Straws
- Base 10
- Place value counters

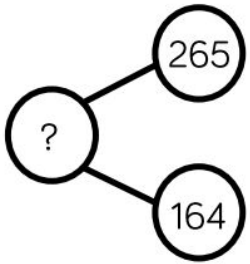
As the numbers increase in value, straws become less efficient.

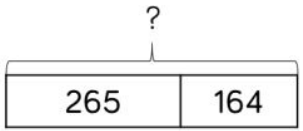
A blank number line can also be used to count from the larger number to find the total. Encouraging jumps to multiples of 10 aids efficiency.

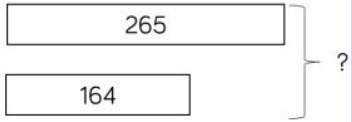
Calculation Policy

Year 3

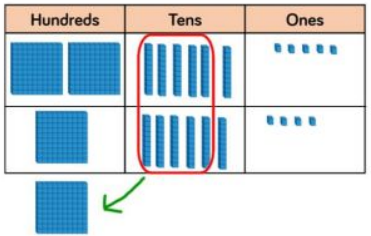
Skill: add numbers with up to 3-digits



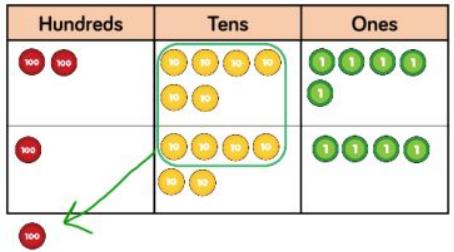




$$265 + 164 = 429$$



$$\begin{array}{r} 265 \\ +\ 164 \\ \hline 429 \\ \hline 1 \end{array}$$



When adding numbers with up to 3-digits, the most efficient manipulatives are:

- Base 10
- Place value counters

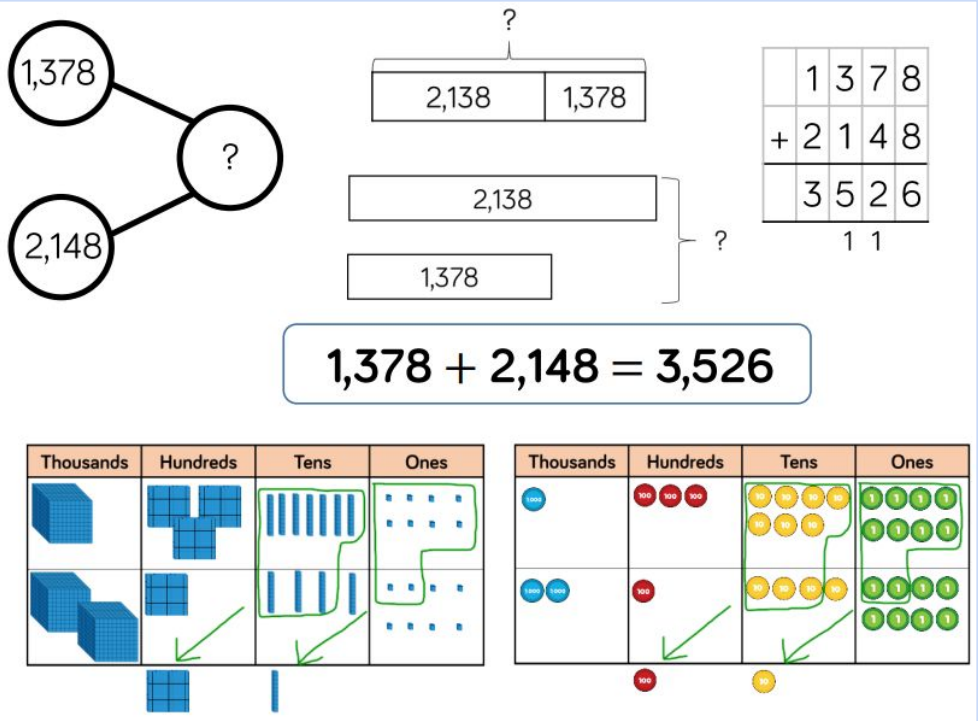
Plain counters on a place value grid can also be used.

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

Calculation Policy

Year 4

Skill: add numbers with up to 4-digits



When adding numbers with up to 4-digits, the most efficient manipulatives are:

- Base 10
- Place value counters

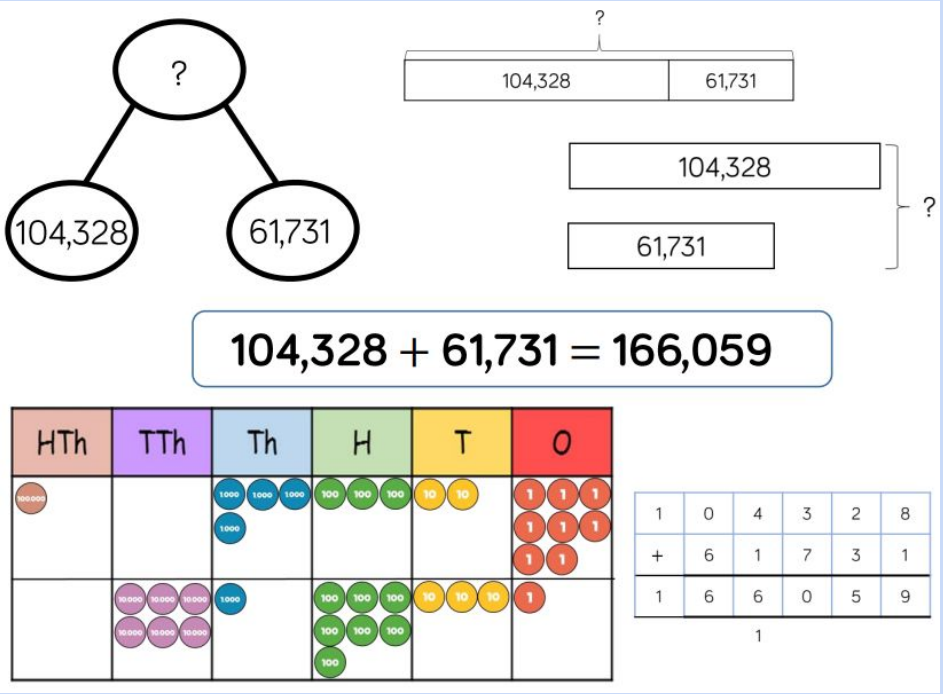
Plain counters on a place value grid can also be used.

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

Calculation Policy

Year 5/6

Skill: add numbers with more than 4-digits



When adding numbers with more than 4-digits, the most efficient manipulatives are:

- Place value counters
- Plain counters and a place value grid

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

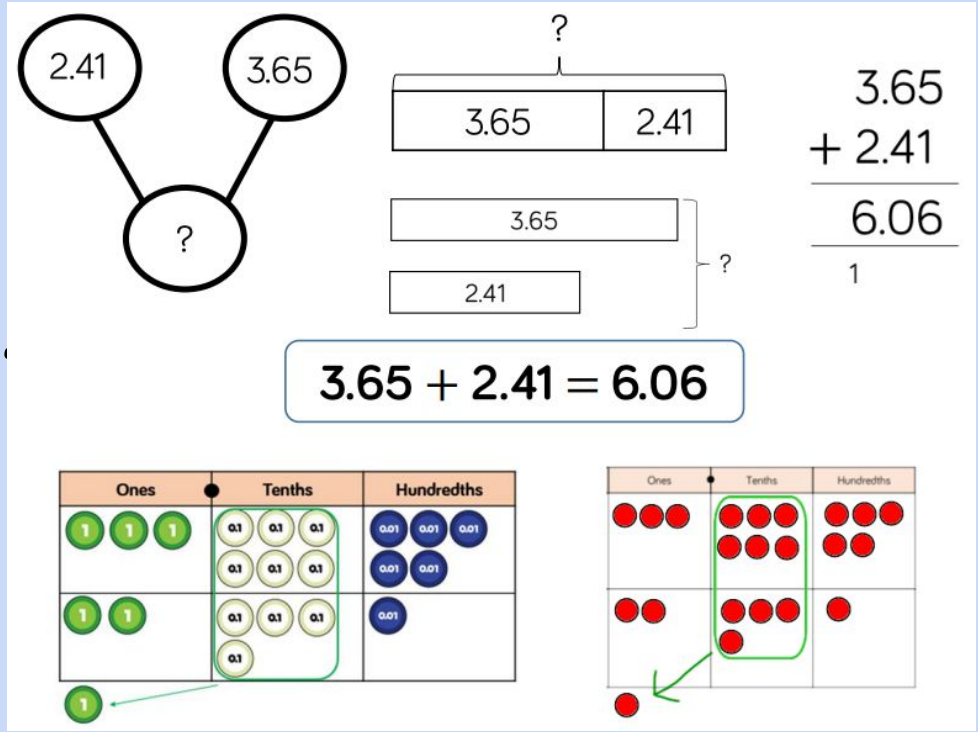
Encourage children to begin to work in the abstract, using the column method, for efficiency when adding larger numbers.

Exchanging should be recorded below the appropriate column.

Calculation Policy

Year 5

Skill: add with up to three decimal places.



When adding numbers with one, two and finally three decimal places, the most efficient manipulatives are:

- Place value counters
- Plain counters and a place value grid

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

Children should experience addition with a range of decimal places and putting these into the context of money/ measurements etc.

Exchanging should be recorded below the appropriate column.

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Calculation Policy

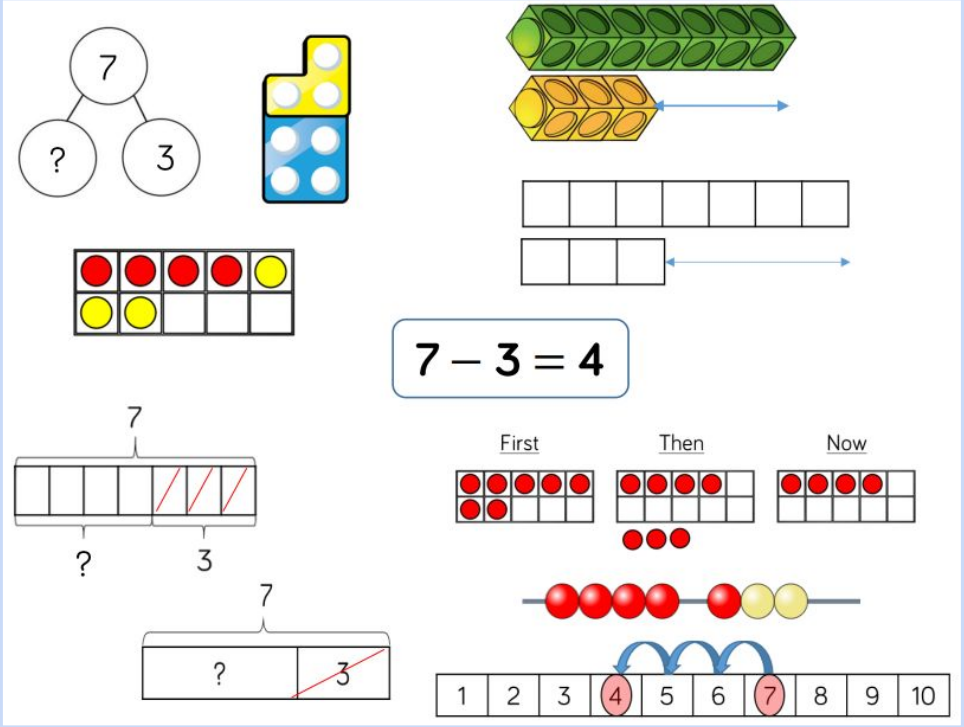
Subtraction

Year Group	Skill	Models and Representations
1	Subtract two 1-digit numbers to 10	Part- whole model, bar model, numicon, tens frames (within 10), bead strings (10), number tracks, rekenrek
1	Subtract 1 and 2-digit numbers to 20	Part- whole model, bar model, numicon, tens frames (within 20), bead strings (20), number tracks, number lines (labelled), straws, rekenrek
2	Subtract 1 and 2-digit numbers to 100	Part-whole model, bar model, number lines (labelled), number lines (blank), straws, hundred square, bead strings (100)
2	Subtract two 2-digit numbers	Part-whole model, bar model, number lines (blank), straws, base 10, place value grids, place value counters
3	Subtract with up to 3-digits	Part-whole model, bar model, base 10, place value counters, place value grids, column subtraction
4	Subtract with up to 4-digits	Part-whole model, bar model, base 10, place value counters, place value grids, column subtraction
5	Subtract with more than 4-digits	Part-whole model, bar model, place value counters, place value grids, column subtraction
5	Subtract with up to 3 decimal places	Part-whole model, bar model, place value counters, place value grids, column subtraction

Calculation Policy

Year 1

Skill: subtract two 1-digit numbers within 10



Subtracting numbers to 10 can explored through partitioning, finding the difference and reduction.

Partitioning is supported through

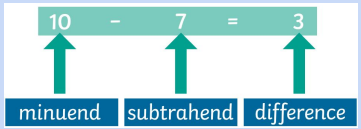
- Part- Whole model
- Bar model
- Numicon
- Tens frame

Finding the difference is supported through

- Bar model (double)
- Cubes/everyday objects

Reduction is supported through

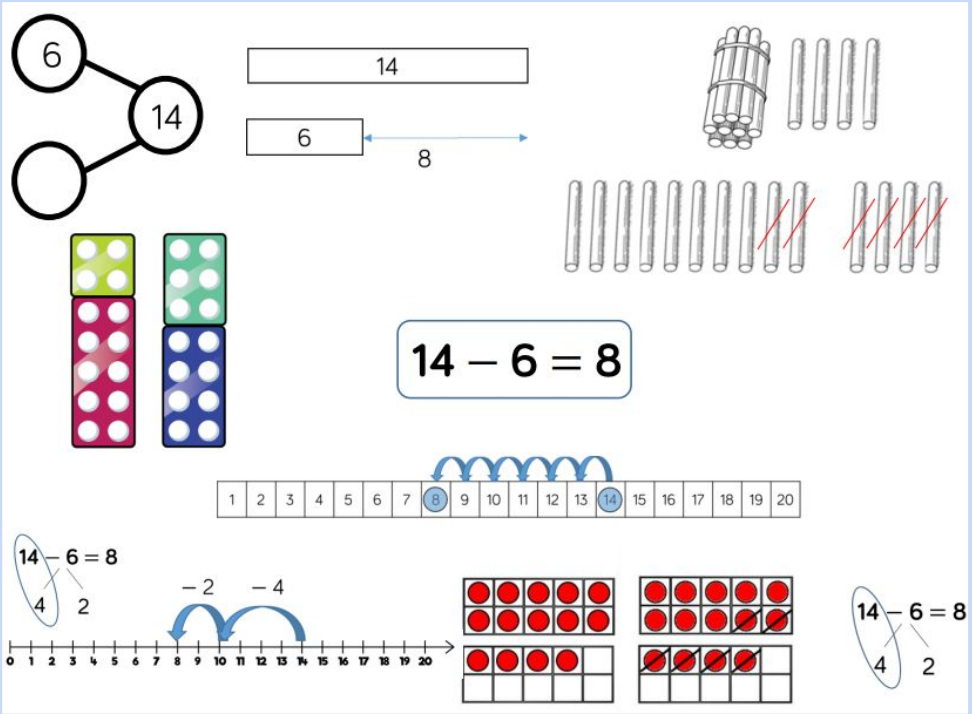
- Tens frames
- Number tracks
- Bar model (single)
- Bead strings



Calculation Policy

Year 1/2

Skill: subtract 1 and 2-digit numbers within 20

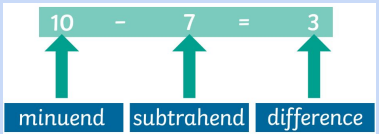


When subtracting numbers that cross 10, highlight that 10 ones is equal to 1 ten.

Encourage children to use their number bonds to 10 when partitioning the subtrahend.

Useful resources for this are:

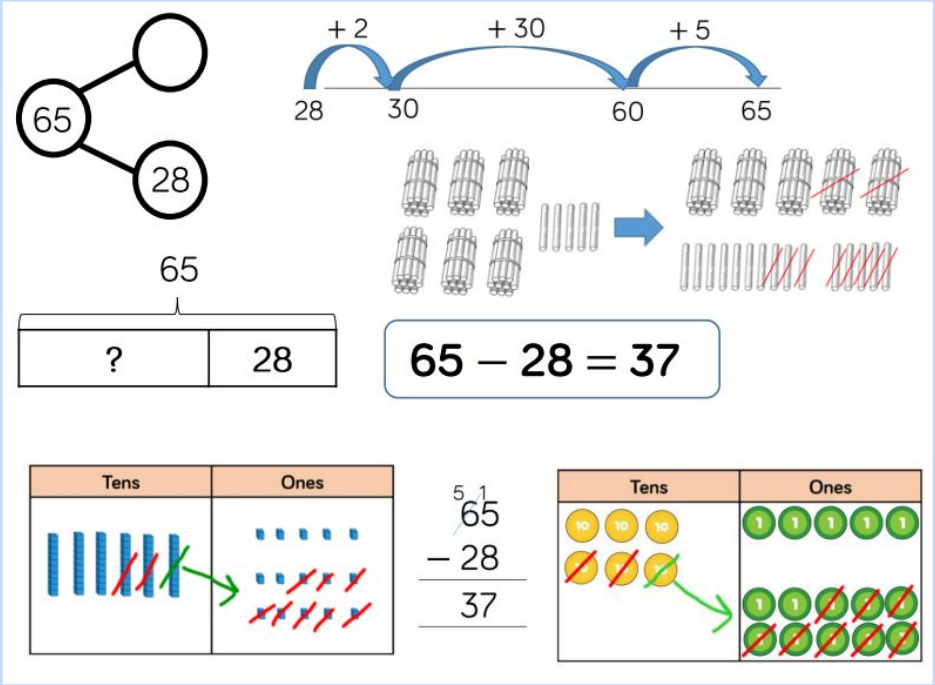
- Tens frames
- Numicon
- Number lines



Calculation Policy

Year 2

Skill: subtract 1 and 2-digit numbers within 100

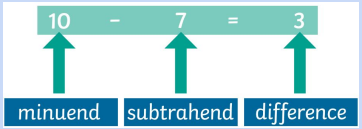


When subtracting two 2-digit numbers to 100, encourage the children to use the formal column method alongside:

- Straws
- Base 10
- Place value counters

As the numbers increase in value, straws become less efficient.

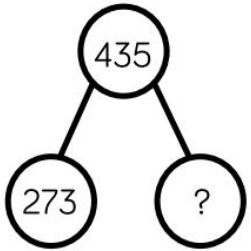
A blank number line can also be used to count from the larger number to find the difference. Encouraging jumps to multiples of 10 aids efficiency.

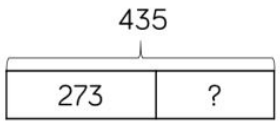


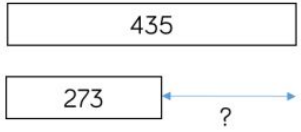
Calculation Policy

Year 3

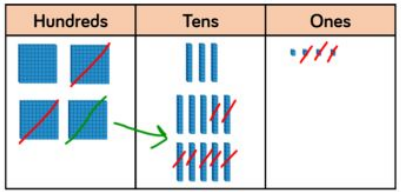
Skill: subtract numbers with up to 3-digits

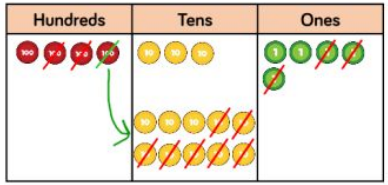






$435 - 273 = 262$



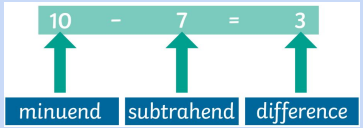


When subtracting numbers with up to 3-digits, the most efficient manipulatives are:

- Base 10
- Place value counters

Plain counters on a place value grid can also be used.

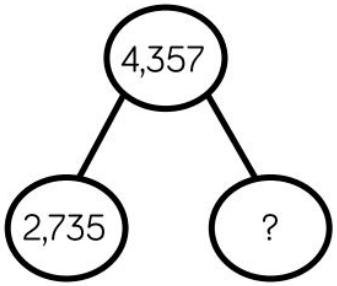
Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

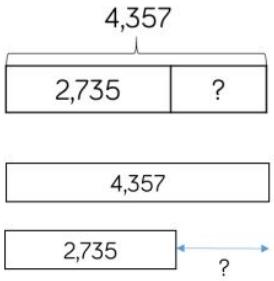


Calculation Policy

Year 4

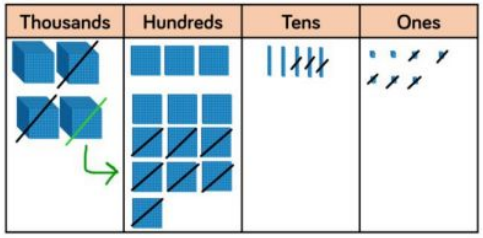
Skill: subtract numbers with up to 4-digits

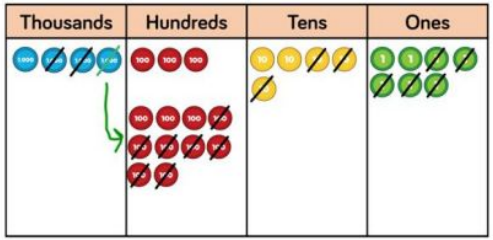




$$\begin{array}{r} {}^{3}\cancel{4}\,{}^{1}\cancel{3}57 \\ -\ 2735 \\ \hline 1622 \end{array}$$

4,357 − 2,735 = 1,622



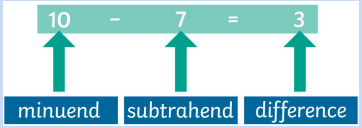


When subtracting numbers with up to 4-digits, the most efficient manipulatives are:

- Base 10
- Place value counters

Plain counters on a place value grid can also be used.

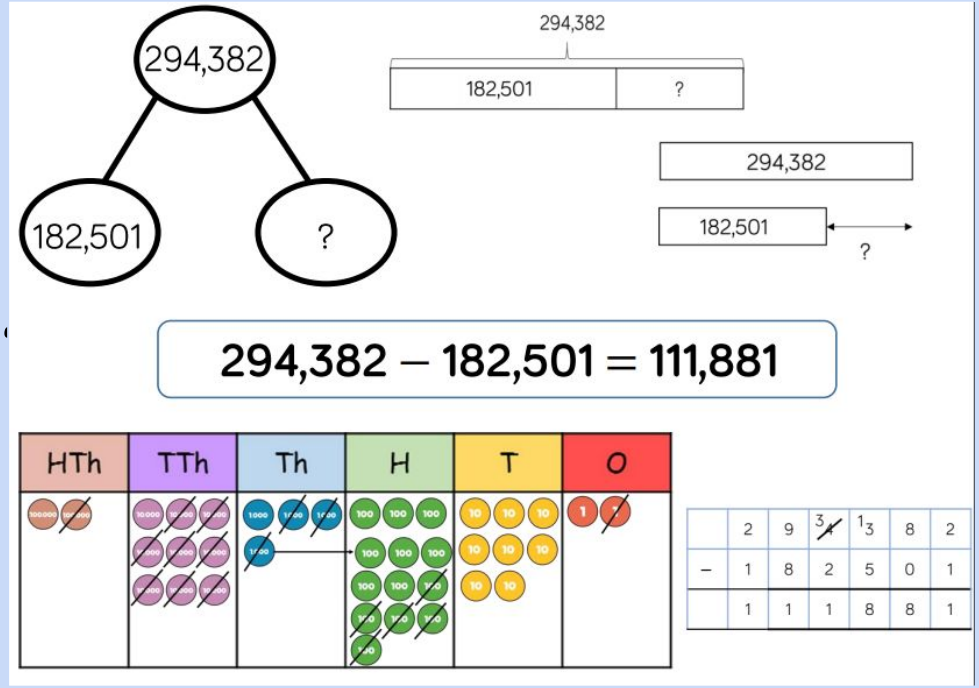
Children should write out their calculation alongside any concrete resources to help see the link to the written column method.



Calculation Policy

Year 5/6

Skill: subtract numbers with more than 4-digits

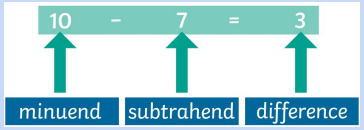


When subtracting numbers with more than 4-digits, the most efficient manipulatives are:

- Place value counters
- Plain counters and a place value grid

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

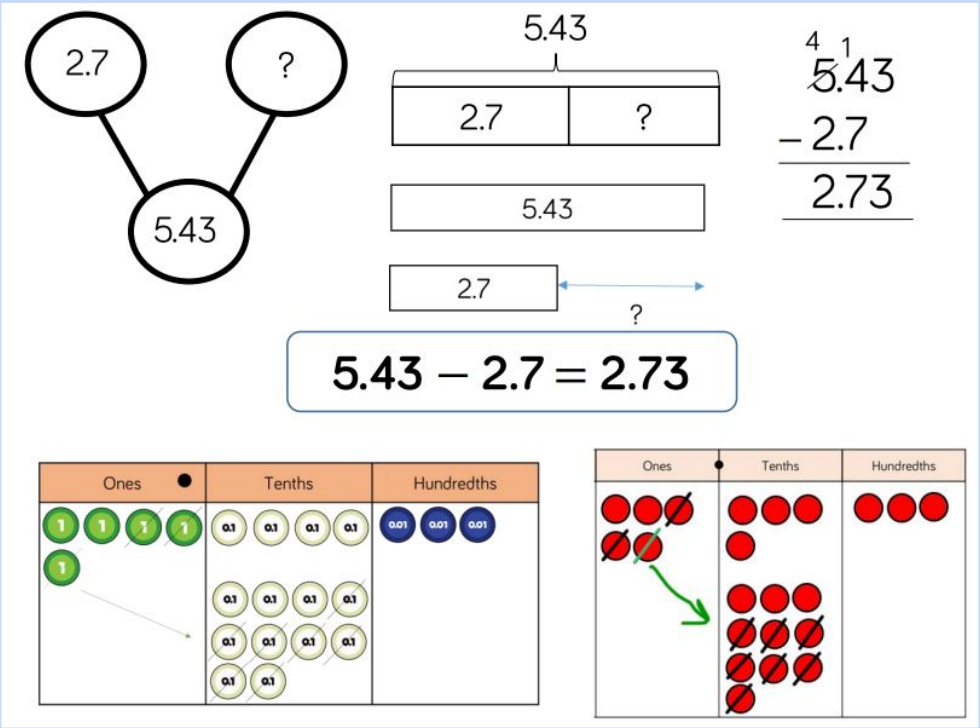
Encourage children to begin to work in the abstract, using the column method, for efficiency when subtracting larger numbers.



Calculation Policy

Year 5

Skill: subtract with up to three decimal places.

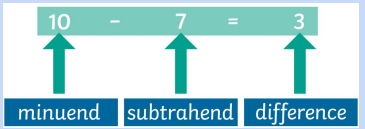


When subtracting numbers with one, two and finally three decimal places, the most efficient manipulatives are;

- Place value counters
- Plain counters and a place value grid

Children should write out their calculation alongside any concrete resources to help see the link to the written column method.

Children should experience subtraction with a range of decimal places and putting these into the context of money/ measurements etc.



Calculation Policy

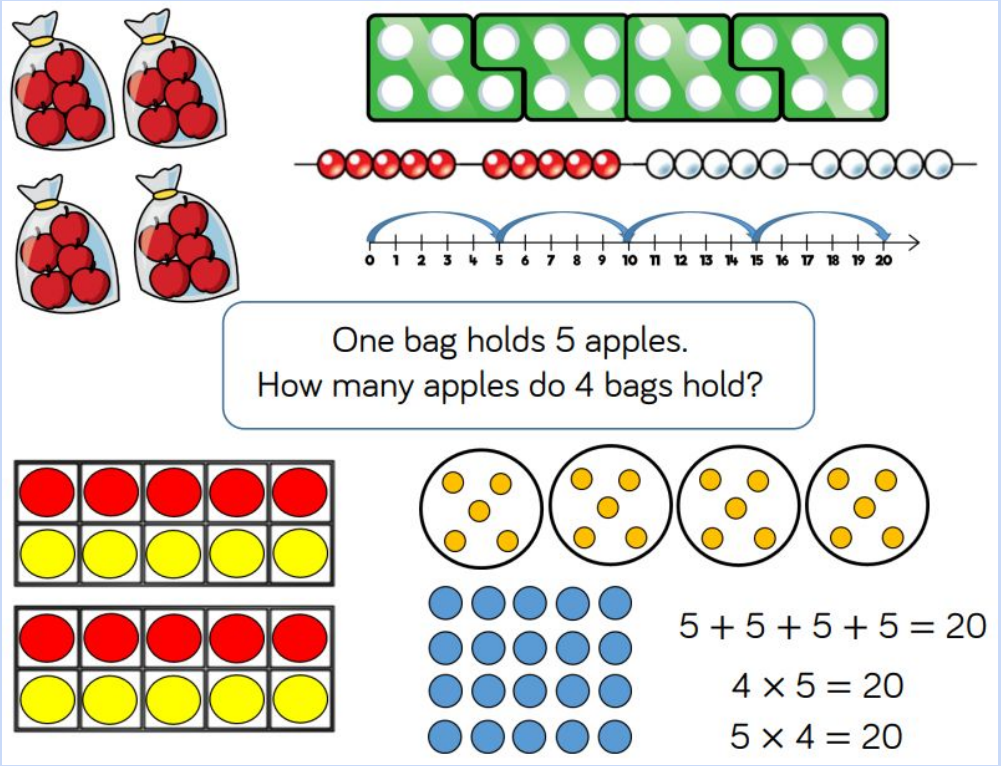
Multiplication

Year Group	Skill	Models and Representations
1/2	Solve 1 step problems with multiplication	Bar model, numicon, counters/cubes, tens frames,, bead strings,, number lines
3/4	Multiply 2-digit by 1-digit numbers	Place value counters, base 10, expanded written method, short written method.
4	Multiply 3-digit by 1-digit numbers	Place value counters, base 10, short written method
5	Multiply 4-digit by 1-digit numbers	Place value counters, short written method
5	Multiply 2-digit by 2-digit numbers	Place value counters, base 10, short written method, grid method
5	Multiply 2-digit by 3-digit numbers	Place value counters, short written method, grid method
5/6	Multiply 2-digit by 4-digit numbers	Formal written method

Calculation Policy

Year 1/2

Skill: solve 1 step problems with multiplication



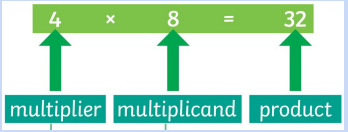
Multiplication is represented as repeated addition using varied models and representations.

Year 1

- Children use concrete and pictorial representations to solve problems but are not expected to record multiplication calculations formally.

Year 2

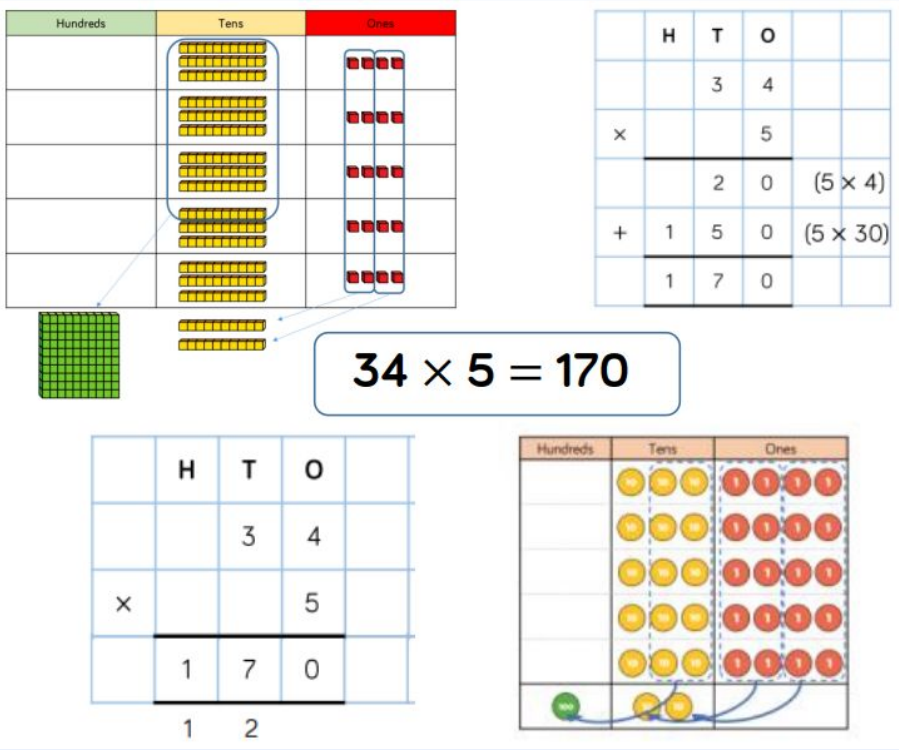
- Children expand their recording to include the use of the multiplication sign in an equation.



Calculation Policy

Year 3/4

Skill: Multiply 2-digit by 1-digit numbers



Year 3

- Children use informal and expanded methods of calculation.

Year 4

- Children expand their recording to include the use of short multiplication.

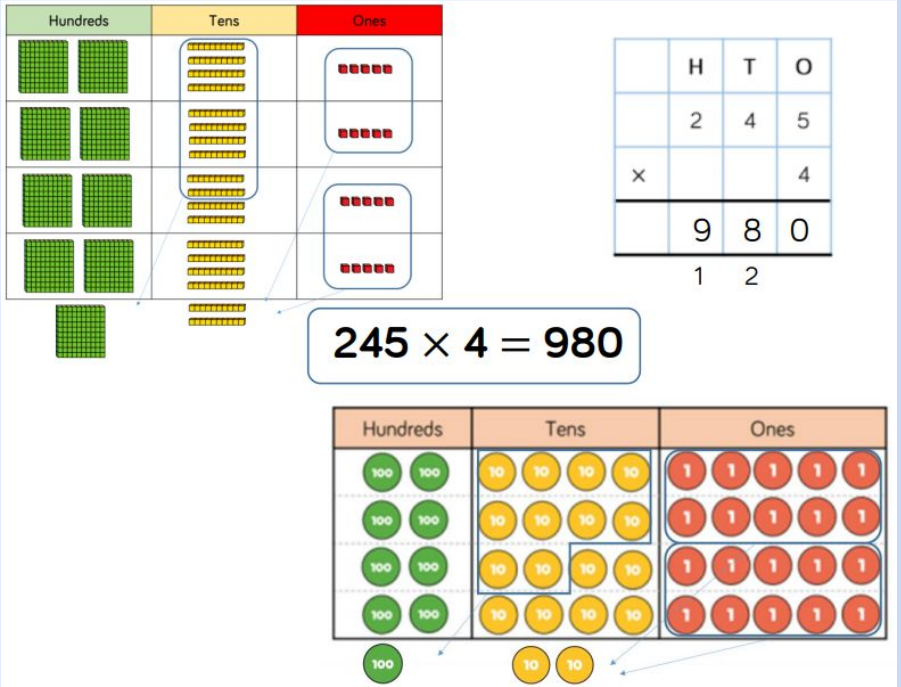
The use of place value counters can help to support the method of calculation but children should be encouraged to use their tables knowledge to complete the multiplication.

- Any exchanging should be recorded below the appropriate column.
- Children should record their balanced equation alongside any pictorial or informal recording it links to.

Calculation Policy

Year 4

Skill: Multiply 3-digit by 1-digit numbers



Children continue use base 10 (dienes) and place value counters to continue to support their understanding of the written method before they move to the short formal method.

All children are encouraged to move towards the short formal method, using their times table knowledge to support their multiplication.

To support this move, limiting the use of exchanges required in calculations allows children to be less reliant on resources when attempting this method.

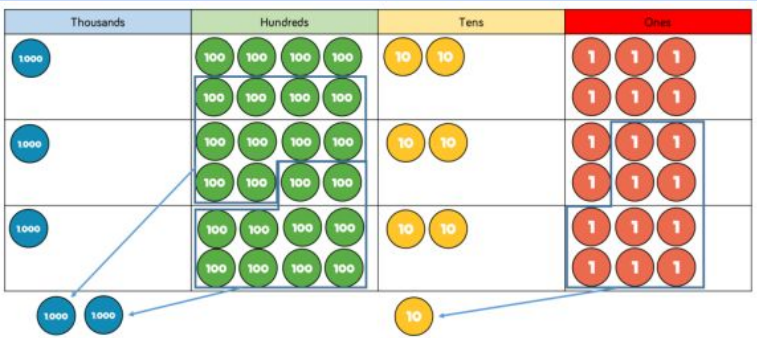
Any exchanging should be recorded below the appropriate column.

Children should record their balanced equation alongside any pictorial or informal recording it links to.

Calculation Policy

Year 5

Skill: Multiply 4-digit by 1-digit numbers



$$1{,}826 \times 3 = 5{,}478$$

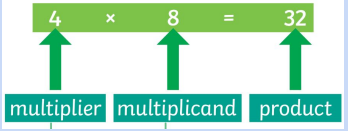
	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

Children use place value counters to support them with understanding the short formal written method for multiplication.

Where children need further support with their times tables, using a multiplication grid will help them to focus on the written method rather than the multiplication.

Any exchanging should be recorded below the appropriate column.

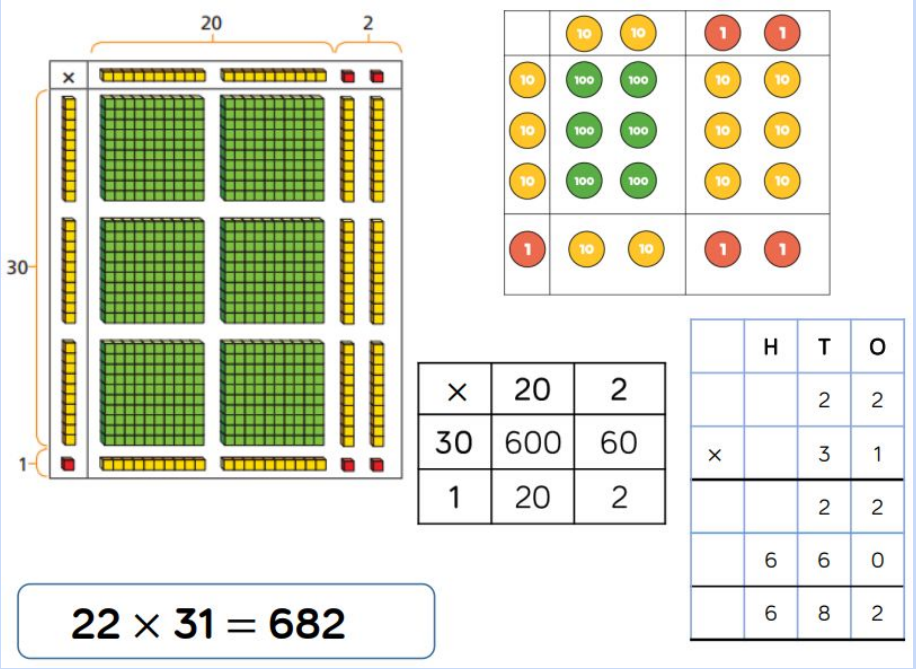
Children should record their balanced equation alongside any pictorial or informal recording it links to.



Calculation Policy

Year 5

Skill: Multiply 2-digit by 2-digit numbers



×	20	2
30	600	60
1	20	2

	H	T	O
		2	2
×		3	1
		2	2
	6	6	0
	6	8	2

$22 \times 31 = 682$

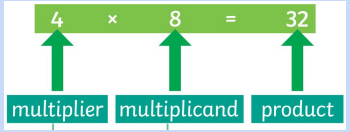
Children begin with the area model to help them understand and visualise the size of the numbers they are working with.

This method links to finding the area of rectilinear shapes using base 10 to find the area covered.

They progress to the grid method as an initial more condensed form of recording, using place value counters to support an understanding of the method where necessary.

From here they progress to formal written calculations. Any exchanging should be recorded below the appropriate column.

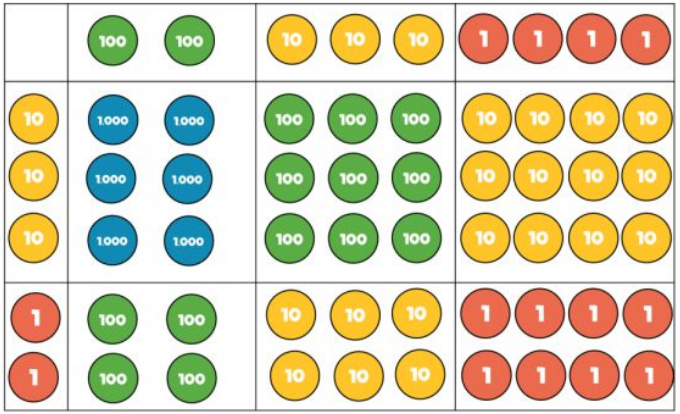
Children should record their balanced equation alongside any pictorial or informal recording it links to.



Calculation Policy

Year 5

Skill: Multiply 2-digit by 3-digit numbers



Th	H	T	O
	2	3	4
×		3	2
	4	6	8
^{1}	^{7}	^{1}0	2	0
7	4	8	8

×	200	30	4
30	6,000	900	120
2	400	60	8

$234 \times 32 = 7{,}488$

Place value counters are most efficient concrete representation.

Children can still use base 10 and the area model to help them understand and visualise the size of the numbers they are working with if necessary.

The grid method can be used to show links between this and the formal written calculation the children should be encouraged to use.

Any exchanging should be recorded below the appropriate column.

Children should record their balanced equation alongside any pictorial or informal recording it links to.

Calculation Policy

Year 5/6

Skill: Multiply 2-digit by 4-digit numbers

TTh	Th	H	T	O
	2	7	3	9
×			2	8
2 (2)	1 (5)	9 (3)	1 (7)	2
5 (1)	4	7 (1)	8	0
7	6	6	9	2
		1		

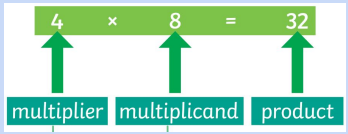
$2{,}739 \times 28 = 76{,}692$

Children should be confident with using formal written methods of calculation before they begin to multiply 2-digit by 4-digit numbers.

For children still strugglin with their times tables, multiplication grids should be used to support their maths and allow them to concentrate on the method.

Any exchanging should be recorded below the appropriate column.

Children should record their balanced equation alongside any working



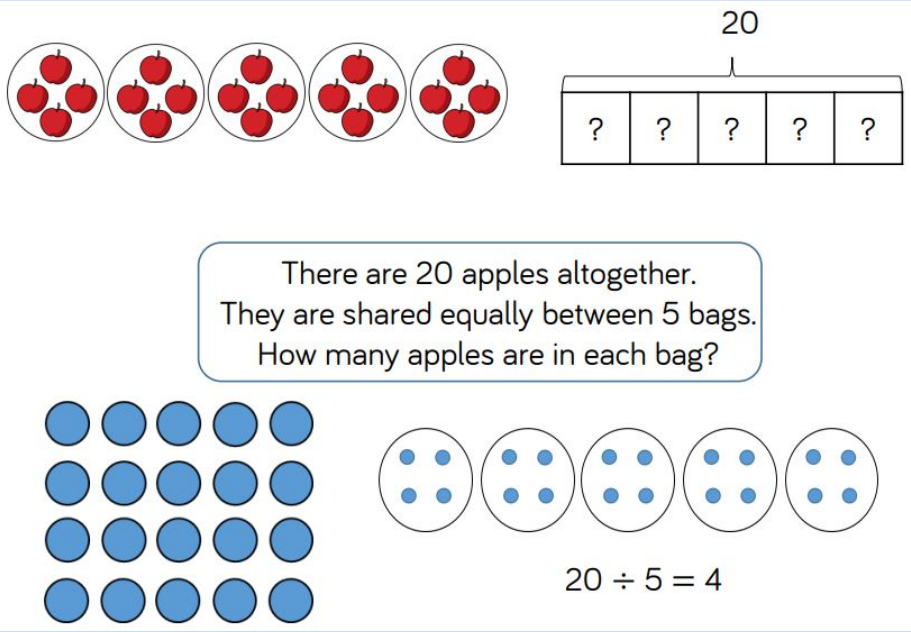
Calculation Policy
Division

Year Group	Skill	Models and Representations
1/2	Solve 1 step problems with division (sharing)	Bar model, real life objects, arrays, counters
1/2	Solve 1 step problems with division (grouping)	Real life objects, numicon, bead strings, tens frames, number lines, arrays, counters.
3	Divide 2-digits by 1-digit (no exchange, sharing)	Straws, base 10, bar model, place value counters, part-whole model.
3	Divide 2-digits by 1-digit (sharing, with exchange)	Straws, base 10, bar model, place value counters, part-whole model.
3/4	Divide 2-digits by 1-digit (sharing, with remainders)	Straws, base 10, bar model, place value counters, part-whole model
4/5	Divide 2-digits by 1-digit (grouping)	Place value counters, counters/cubes, place value grid, written short division
4	Divide 3-digits by 1-digit (sharing, with exchange)	Base 10, bar model, place value counters, part-whole model
4/5	Divide 3-digits by 1-digit (grouping)	Place value counters, counters/cubes, place value grid, written short division
5	Divide 4-digits by 1-digit (grouping)	Place value counters, counters/cubes, place value grid, written short division
6	Divide multi-digits by 2-digits (short division)	Written short division, list of multiples
6	Divide multi-digits by 2-digits (long division) 1 & 2	Written short division, list of multiples

Calculation Policy

Year 1/2

Skill: solve 1 step problems with division (sharing)



Division problems are solved by sharing amounts into equal groups

Year 1

- Children use concrete and pictorial representations to solve problems but are not expected to record division calculations formally.

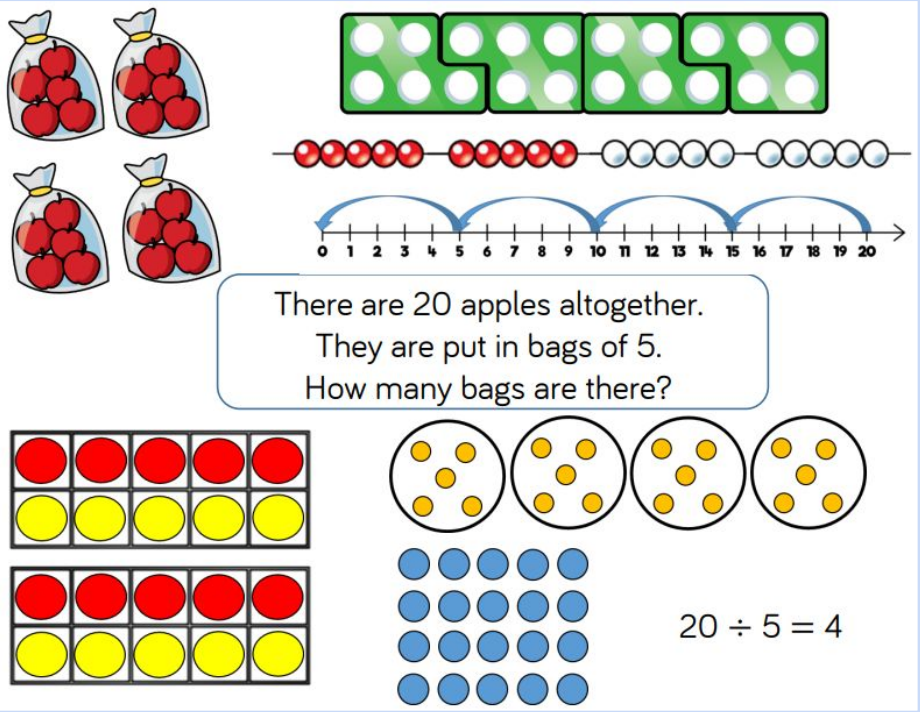
Year 2

- Children expand their recording to include the use of the division sign in an equation.

Calculation Policy

Year 1/2

Skill: solve 1 step problems with division (grouping)



Division problems are solved by grouping and counting the number of groups.

Grouping encourages children to count in multiples and links to repeated subtraction on a number line.

Use concrete representations in fixed groups (eg: Numicon) to help show the link between multiplication and division.

Year 1

- Children use concrete and pictorial representations to solve problems but aren't expected to record division calculations formally.

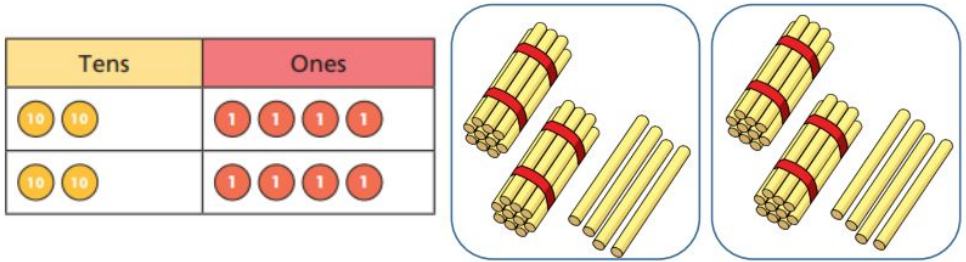
Year 2

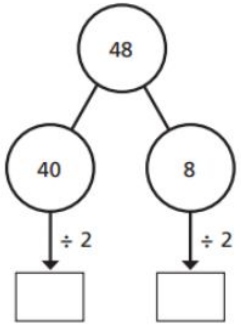
- Children expand their recording to include the use of the division sign in an equation.

Calculation Policy

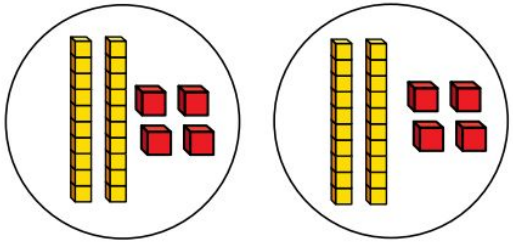
Year 3

Skill: Divide 2-digits by 1-digit (no exchange, sharing)





48 ÷ 2 = 24



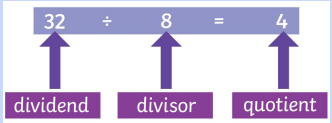
When dividing through sharing without exchange, children should use manipulatives that allow them to partition into tens and ones.

These manipulatives allow for sharing into equal groups:

- Straws
- Base 10
- Place value counters

Part-whole models support children by providing a clear written method that matches the concrete representation.

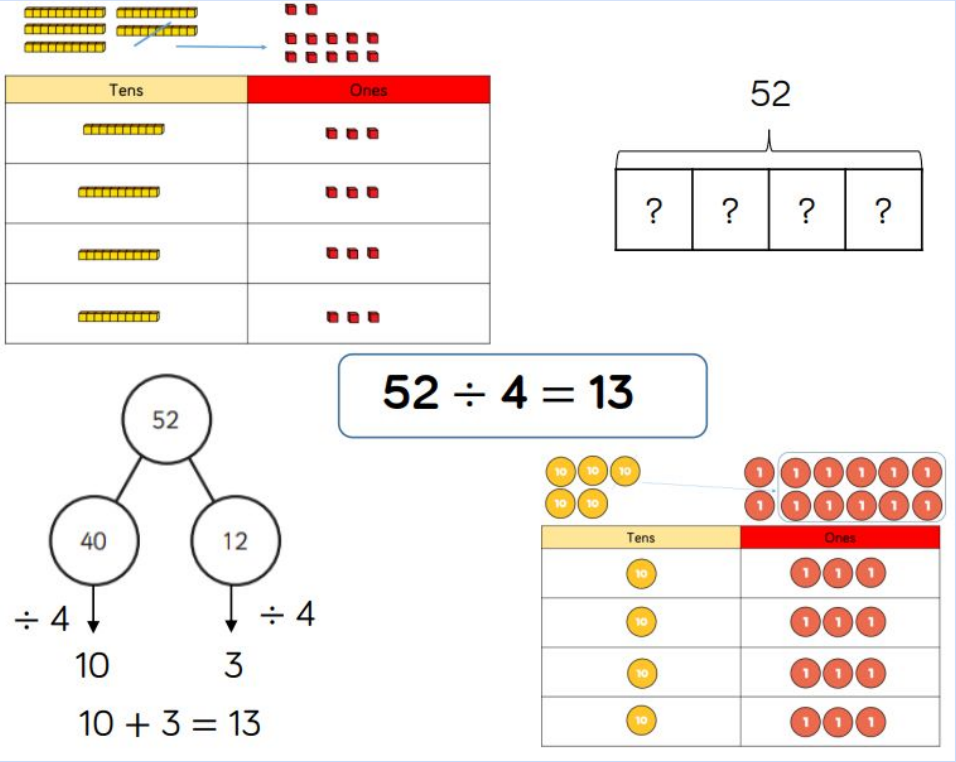
Children should record their balanced equation alongside any working.



Calculation Policy

Year 3(/4)

Skill: Divide 2-digits by 1-digit (sharing, with exchange)



When dividing through sharing with exchange, children should use base 10 or place value counters to enable exchange from 1 ten to 10 ones.

Equipment should be placed outside of a place value grid before sharing the tens and ones equally between the rows.

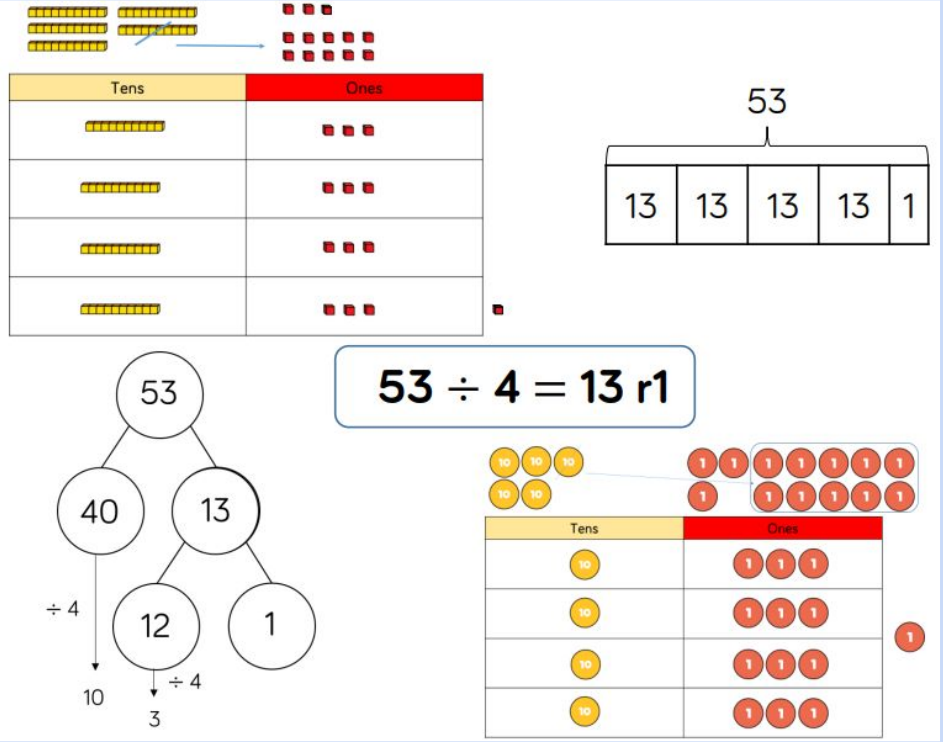
Using a part-whole model with flexible partitioning supports the written method, as does the bar model.

Children should record their balanced equation alongside any working

Calculation Policy

Year 3/4

Skill: Divide 2-digits by 1-digit (sharing, with remainders)



When dividing numbers with remainders, children should use base 10 or place value counters to enable exchange from 1 ten to 10 ones.

Equipment should be placed outside of a place value grid before sharing the tens and ones into equal groups- any remainder will therefore be left outside the grid

Using a part-whole model with flexible partitioning supports the written method.

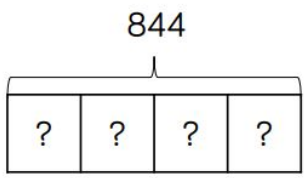
Children should record their balanced equation alongside any working

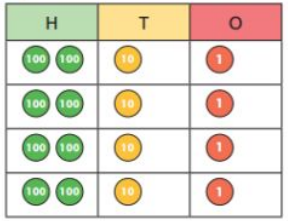
Calculation Policy

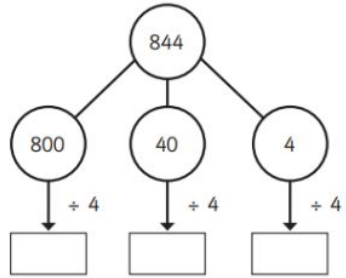
Year 4

Skill: Divide 3-digits by 1-digit (sharing, with exchange)

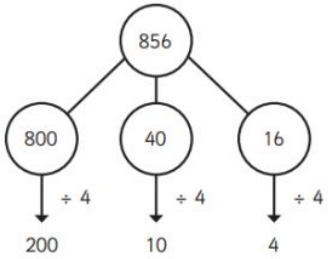
844 ÷ 4 = 211

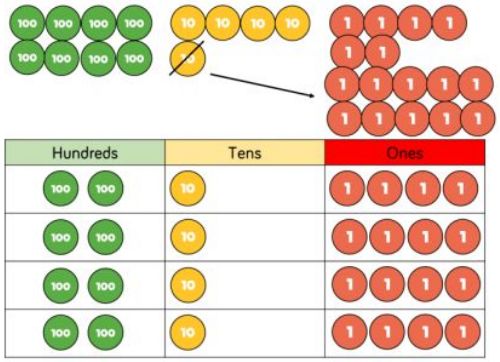






856 ÷ 4 = 214





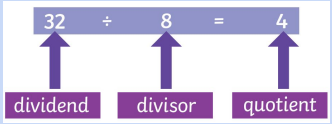
When sharing 3-digit numbers into equal groups, children can continue to support their understanding with place value counters.

Equipment should be placed outside of a place value grid before sharing the hundreds, tens and ones equally between the rows.

This method also helps to highlight remainders as they will therefore be left outside the grid.

Using a part-whole model with flexible partitioning supports the written method.

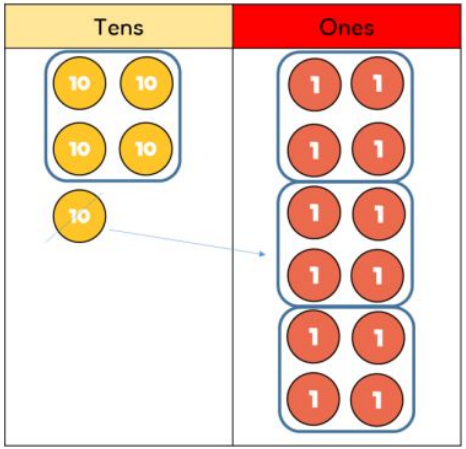
Children should record their balanced equation alongside any working



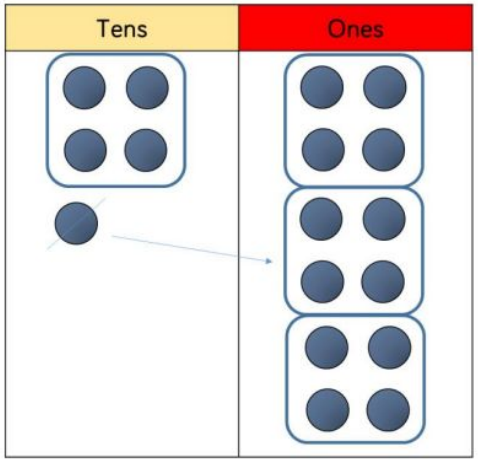
Calculation Policy

Year 4/5

Skill: Divide 2-digits by 1-digit (grouping)



		1	3	
	4	5	1 2	



$52 \div 4 = 13$

When working on short division, children use grouping.

Beginning with the largest place value in the dividend, they then group by the divisor.

Stem sentences:

- How many groups of (4) tens can we make?
- How many groups of (4) ones can we make?

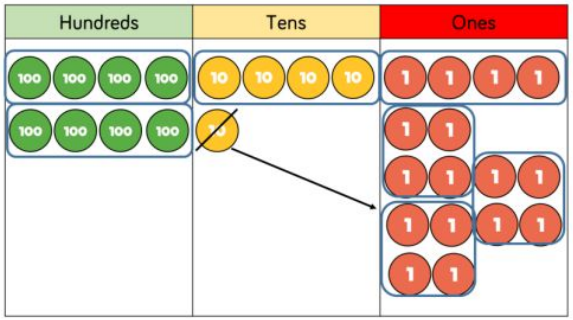
Remainders will be highlighted as left ungrouped.

Place value counters or plain counters on a place value grid supports understanding.

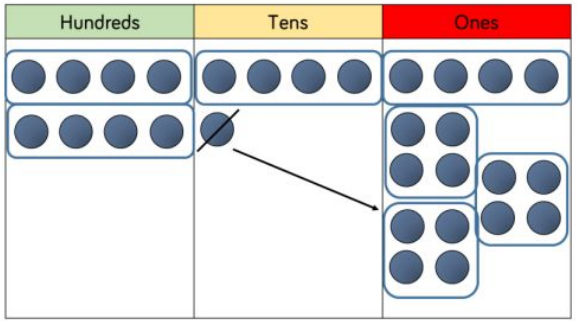
Calculation Policy

Year 5

Skill: Divide 3-digits by 1-digit (grouping)



		2	1	4
	4	8	5	$^{1}6$



$856 \div 4 = 214$

When working on short division using 3-digit numbers, children continue to use grouping.

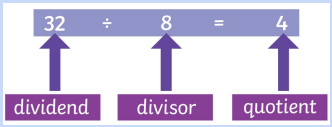
Beginning with the largest place value in the dividend, they then group by the divisor.

Stem sentences:

- How many groups of (4) hundreds can we make?
- How many groups of (4) tens can we make?
- How many groups of (4) ones can we make?

Remainders will be highlighted as left ungrouped.

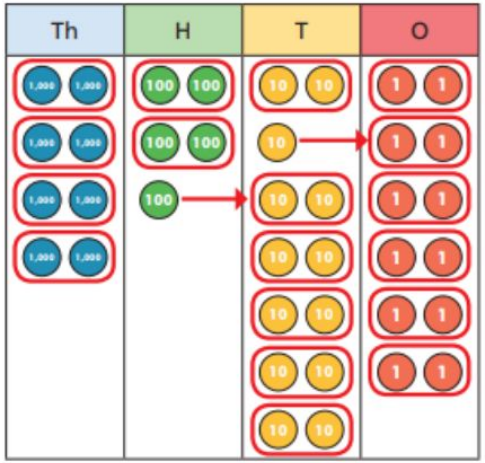
Place value counters or plain counters on a place value grid supports understanding. Equally, children may draw and group their own counters to move from concrete to pictorial.



Calculation Policy

Year 5

Skill: Divide 4-digits by 1-digit (grouping)



	4	2	6	6
2	8	5	$^{1}3$	$^{1}2$

8,532 ÷ 2 = 4,266

When working on short division using 4-digit numbers, children continue to use grouping.

Beginning with the largest place value in the dividend, they then group by the divisor.

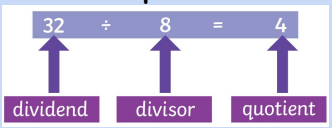
Stem sentences:

- How many groups of (2) thousands can we make?
- How many groups of (2) hundreds can we make?
- How many groups of (2) tens can we make?
- How many groups of (2) ones can we make?

Remainders will be highlighted as left ungrouped.

Encourage children to use their tables knowledge and move away from concrete/pictorial when dividing numbers with multiple exchanges.

Although, place value counters or plain counters on a place value grid or creating their own pictorial representation can still support understanding.



Calculation Policy

Year 6

Skill: Divide multi-digits by 2-digits (short division)

		0	3	6
	12	4	$^{4}3$	$^{7}2$

$$432 \div 12 = 36$$

$$7{,}335 \div 15 = 489$$

	0	4	8	9
15	7	$^{7}3$	$^{13}3$	$^{13}5$

15	30	45	60	75	90	105	120	135	150

When working on short division of multi-digit numbers by 2-digit numbers, written methods are the most effective way of solving the equation.

To support their working, particularly of those with larger remainders, children can write out multiples.

Children will also encounter problems where the quotient may need rounding as appropriate.

Stem sentences (as for 1-digit short division) can still be used to support understanding when talking through the steps to solve the equation.

Calculation Policy

Year 6

Skill: Divide multi-digits by 2-digits (long division)1

		0	3	6
1	2	4	3	2
	–	3	6	0
			7	2
	–		7	2
				0

(×30)

(×6)

$12 \times 1 = 12$
$12 \times 2 = 24$
$12 \times 3 = 36$
$12 \times 4 = 48$
$12 \times 5 = 60$
$12 \times 6 = 72$
$12 \times 7 = 84$
$12 \times 8 = 96$
$12 \times 7 = 108$
$12 \times 10 = 120$

$432 \div 12 = 36$

$7{,}335 \div 15 = 489$

	0	4	8	9
15	7	3	3	5
–	6	0	0	0
	1	3	3	5
–	1	2	0	0
		1	3	5
–		1	3	5
				0

(×400)

(×80)

(×9)

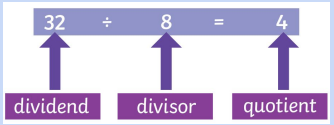
$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$10 \times 15 = 150$

When dividing by 2-digit numbers, long division can also be used.

As with multi-digit short division, children can write out multiples to support their working, particularly of those with larger remainders.

Children will also encounter problems where the quotient may need rounding as appropriate.

(Further guidance with regard to remainders given on 'long division 2' skill slide).



Calculation Policy

Year 6

Skill: Divide multi-digits by 2-digits (long division)2

$372 \div 15 = 24$ r12

			2	4	r	1	2
1	5	3	7	2			
	–	3	0	0			
			7	2			
	–		6	0			
			1	2			

$1 \times 15 = 15$
$2 \times 15 = 30$
$3 \times 15 = 45$
$4 \times 15 = 60$
$5 \times 15 = 75$
$10 \times 15 = 150$

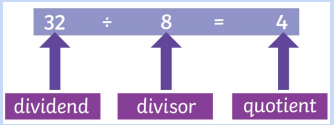
			2	4	$\frac{4}{5}$
1	5	3	7	2	
	–	3	0	0	
			7	2	
	–		6	0	
			1	2	

$372 \div 15 = 24\frac{4}{5}$

When a remainder is left at the end of a calculation, children can either leave it as a remainder or convert it into a fraction.

The appropriate action will depend on the context of the question.

Children will also encounter problems where the quotient may need rounding, according to the context..



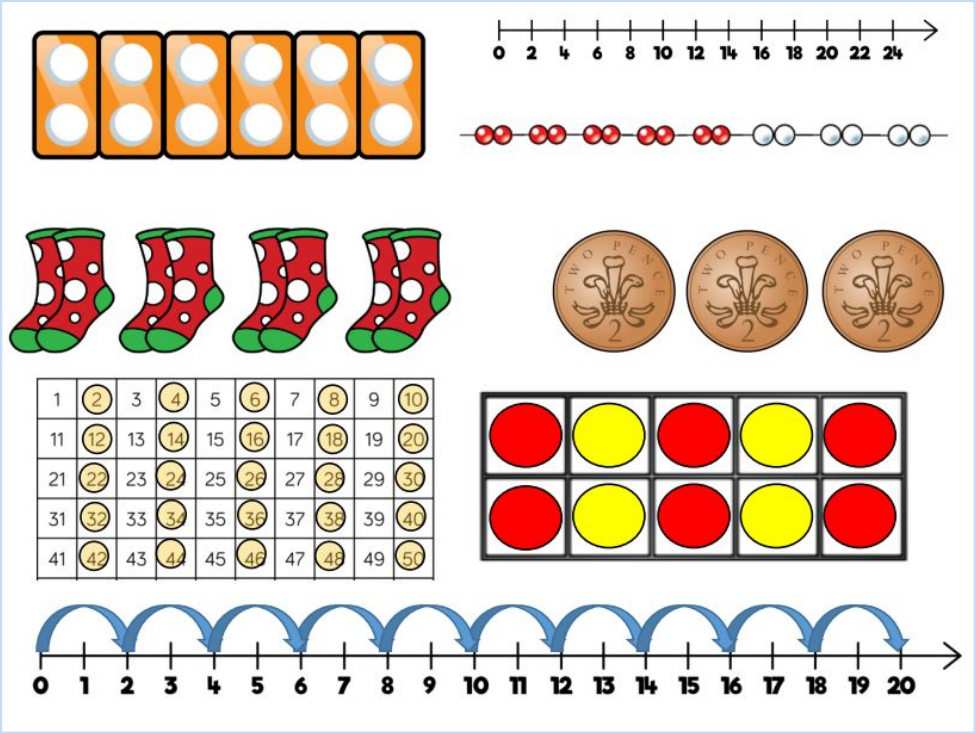
Calculation Policy
Times Tables

Yr Gp	Skill	Models and Representations
2	Recall and use multiplication and division facts for the 2 times table	Bar model, Numicon, counters, money, tens frames, bead strings, number lines, everyday objects
2	Recall and use multiplication and division facts for the 5 times table	Bar model, Numicon, counters, money, tens frames, bead strings, number lines, everyday objects
2	Recall and use multiplication and division facts for the 10 times table	Bar model, Numicon, counters, money, tens frames, bead strings, number lines, everyday objects
3	Recall and use multiplication and division facts for the 3 times table	Hundred square, Numicon, bead strings, number lines, everyday objects, counters
3	Recall and use multiplication and division facts for the 4 times table	Hundred square, Numicon, bead strings, number lines, everyday objects, counters
3	Recall and use multiplication and division facts for the 8 times table	Hundred square, Numicon, bead strings, number tracks, everyday objects
4	Recall and use multiplication and division facts for the 6 times table	Hundred square, Numicon, bead strings, number tracks, everyday objects
4	Recall and use multiplication and division facts for the 7 times table	Hundred square, Numicon, bead strings, number lines
4	Recall and use multiplication and division facts for the 9 times table	Hundred square, Numicon, bead strings, number lines
4	Recall and use multiplication and division facts for the 11 times table	Hundred square, Base 10, place value counters, number lines
4	Recall and use multiplication and division facts for the 12 times table	Hundred square, Base 10, place value counters, number lines

Calculation Policy

Skill: 2 times table

Year 2



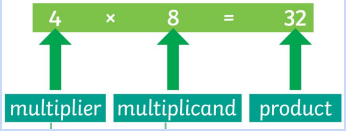
Regular counting in multiples of 2 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even
repeated pattern in the ones column

- Support with concrete manipulatives.

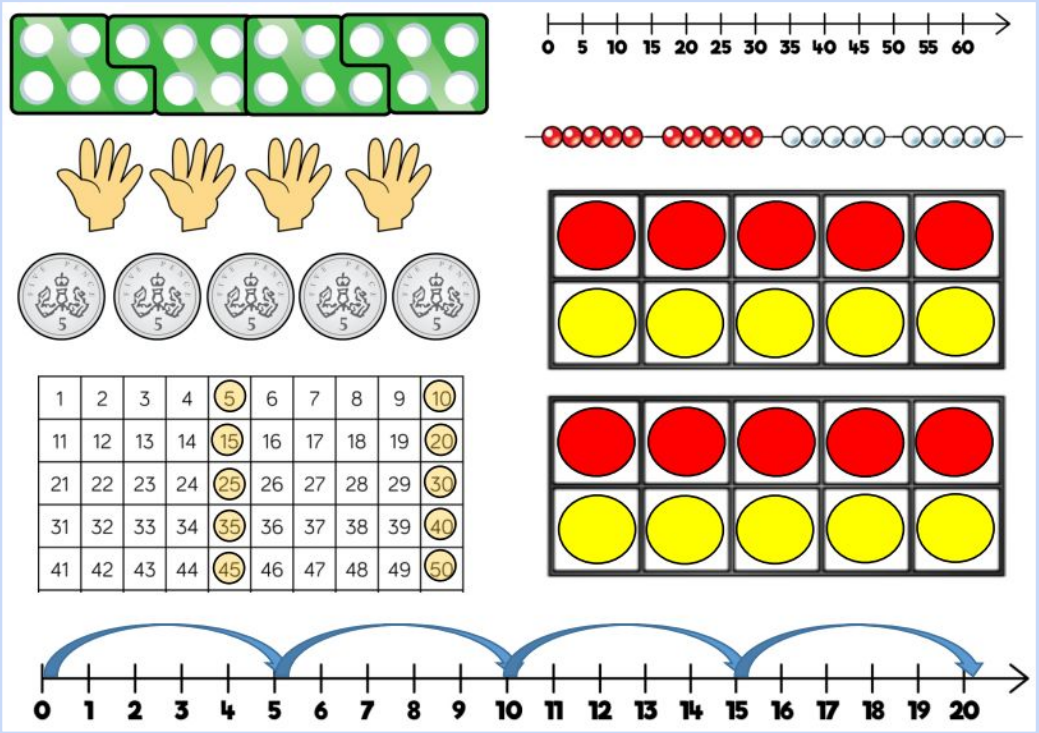
Develop fluency with use of different models



Calculation Policy

Skill: 5 times table

Year 2



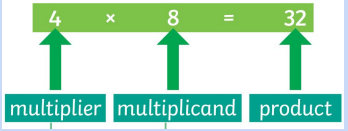
Regular counting in multiples of 5 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
multiples are odd, even, odd, even
repeated pattern in the ones column

- Support with concrete manipulatives.

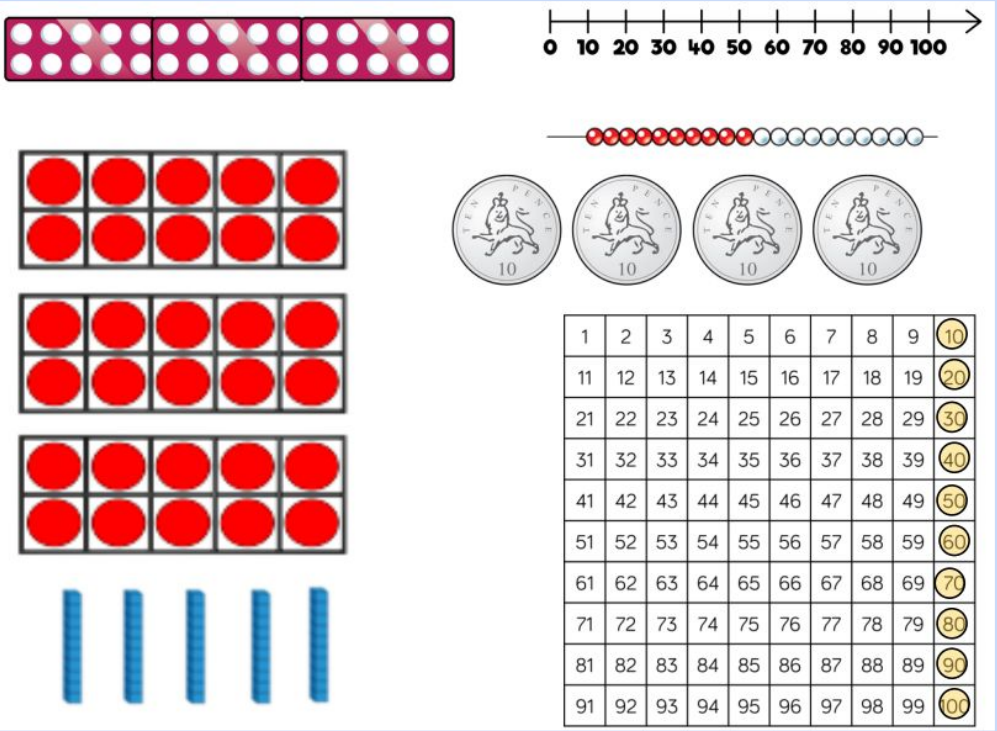
Develop fluency with use of different models



Calculation Policy

Skill: 10 times table

Year 2



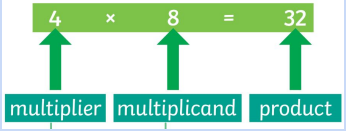
Regular counting in multiples of 10 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even
always zero in the ones column
tens column increases by 1 each time

- Support with concrete manipulatives.

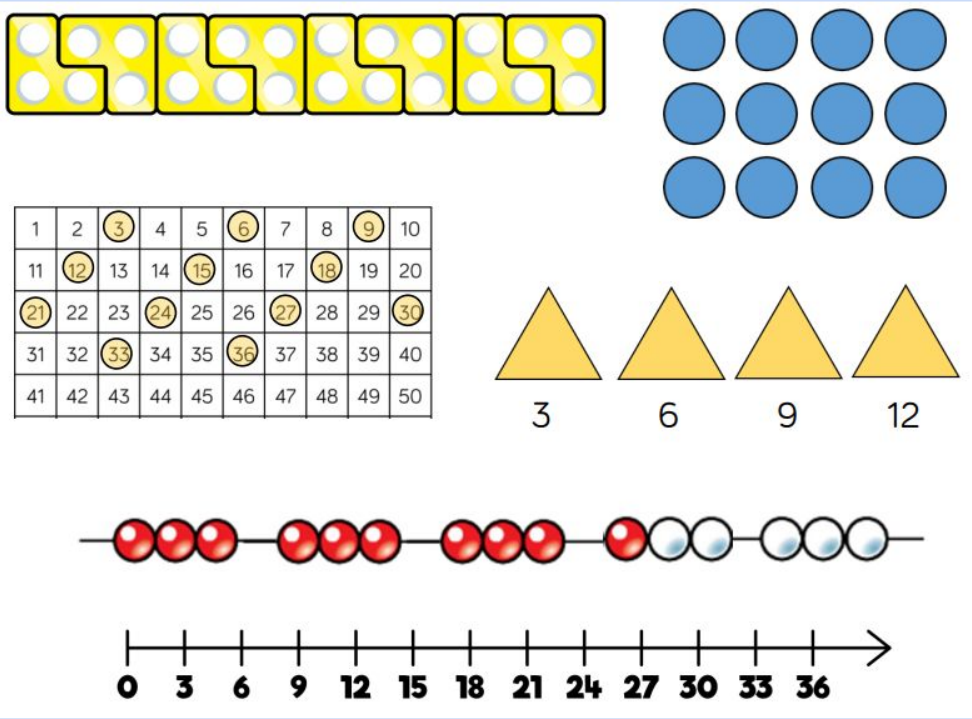
Develop fluency with use of different models



Calculation Policy

Skill: 3 times table

Year 3



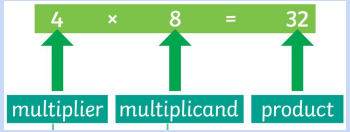
Regular counting in multiples of 3 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
multiples have odd, even, odd, even pattern (numicon)
repeating pattern in ones column (highlight on hundred square)

- Support with concrete manipulatives.

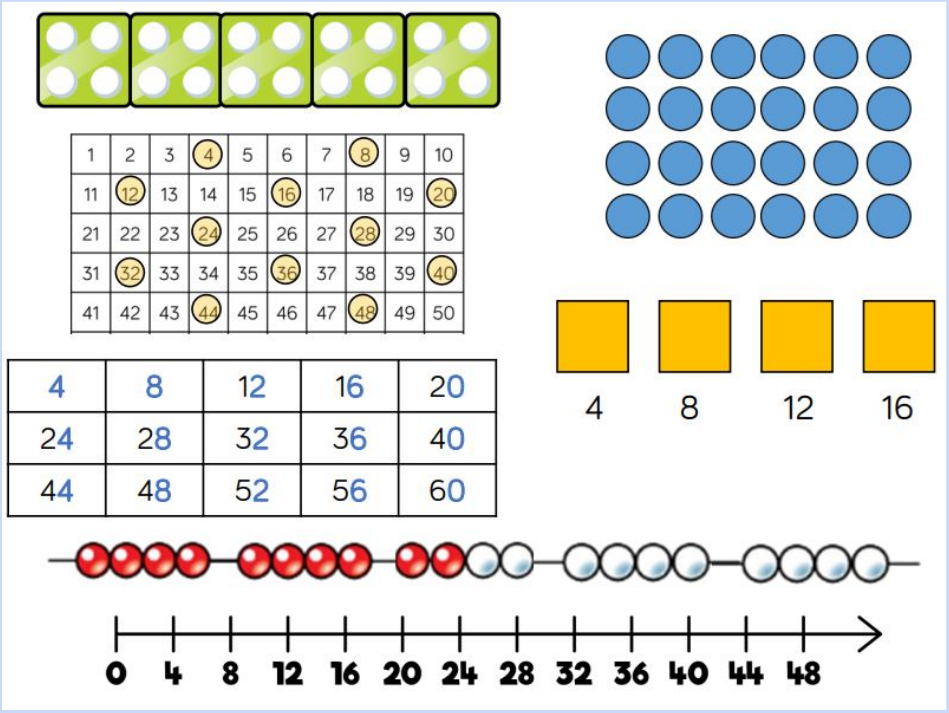
Develop fluency with use of different models



Calculation Policy

Skill: 4 times table

Year 3



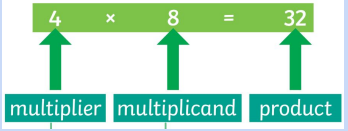
Regular counting in multiples of 4 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even (Numicon)
repeating pattern in ones column every 5 multiples (highlight on hundred square)
link to 2 times table (doubles)

- Support with concrete manipulatives.

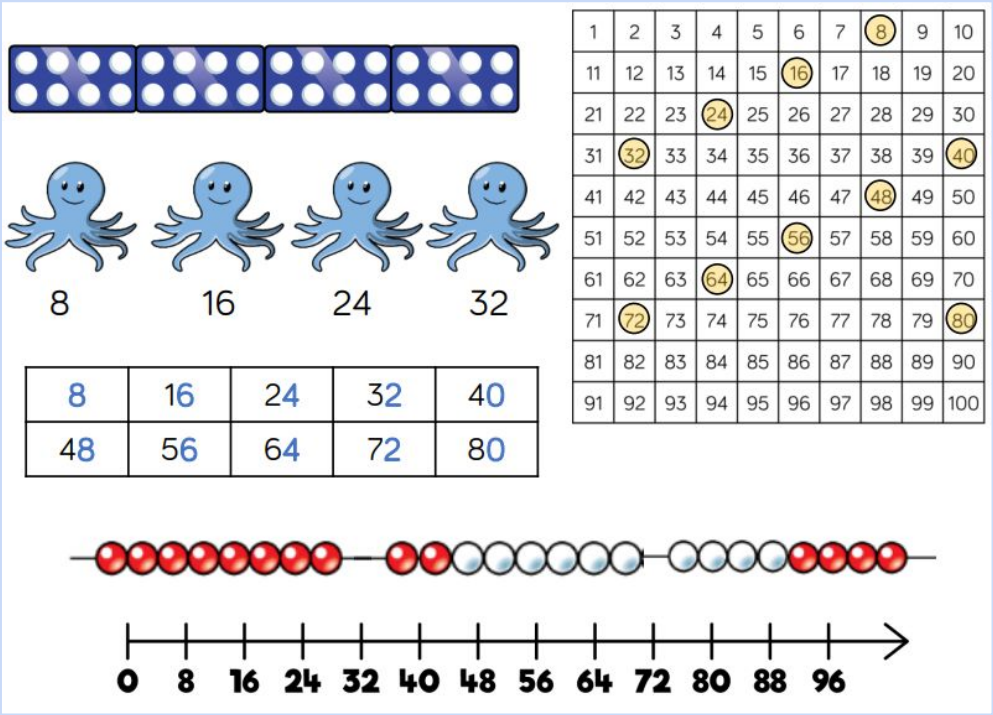
Develop fluency with use of different models



Calculation Policy

Skill: 8 times table

Year 3



1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

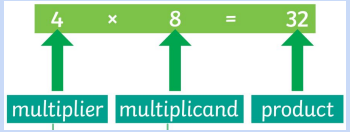
Regular counting in multiples of 8 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even (Numicon)
repeating pattern in ones column every 5 multiples (highlight on hundred square)
link to 4 times table (doubles)
link to 2 times table (double & double again)

- Support with concrete manipulatives.

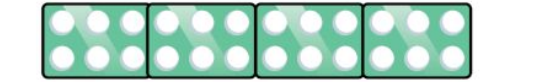
Develop fluency with use of different models

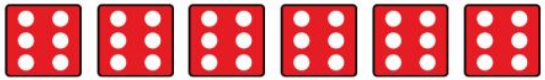


Calculation Policy

Skill: 6 times table

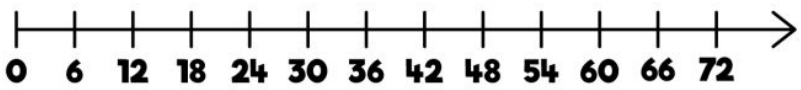
Year 4





6	12	18	24	30
36	42	48	54	60
66	72	78	84	90

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



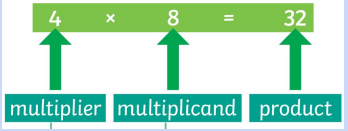
Regular counting in multiples of 6 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even (Numicon)
repeating pattern in ones column every 5 multiples (highlight on hundred square)
link to 3 times table (doubles)

- Support with concrete manipulatives.

Develop fluency with use of different models



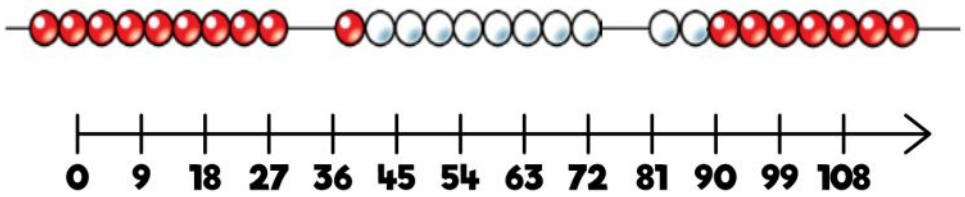
Calculation Policy

Skill: 9 times table

Year 4

9	18	27	36	45
54	63	72	81	90

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



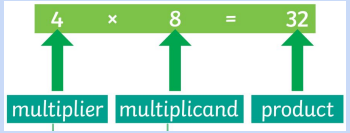
Regular counting in multiples of 9 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
multiples are odd, even, odd, even (Numicon)
ones column decreases by 1 each time, tens column increases by 1 ten each time.
the sum of the digits in any multiple always make 9
link to 3 times table & 6 times table (add)
link to 3 times table (double & add/ treble)

- Support with concrete manipulatives.

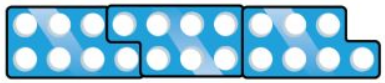
Develop fluency with use of different models



Calculation Policy

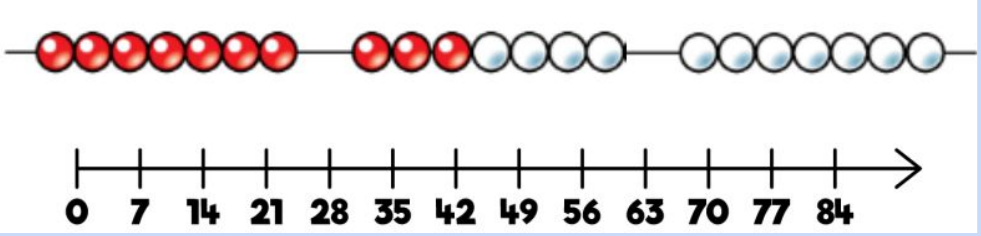
Skill: 7 times table

Year 4



7	14	21	28	35
42	49	56	63	70

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



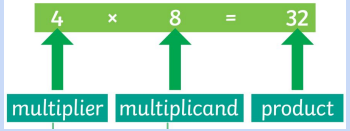
Regular counting in multiples of 7 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
multiples are odd, even, odd, even (Numicon)
repeating pattern in ones column (highlight on hundred square)
link to 3 times table & 4 times table (add)

- Support with concrete manipulatives.

Develop fluency with use of different models



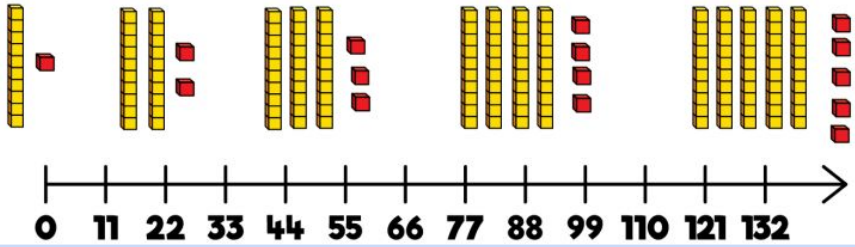
Calculation Policy

Skill: 11 times table

Year 4

11	22	33	44	55	66
77	88	99	110	121	132

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



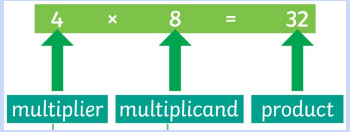
Regular counting in multiples of 11 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
multiples odd, even, odd, even
repeating pattern in ones & tens column (highlight on hundred square)
repeating pattern alters crossing 100 (highlight on 200 square)
link to 10 times table (add 1 more multiple)

- Support with concrete manipulatives.

Develop fluency with use of different models



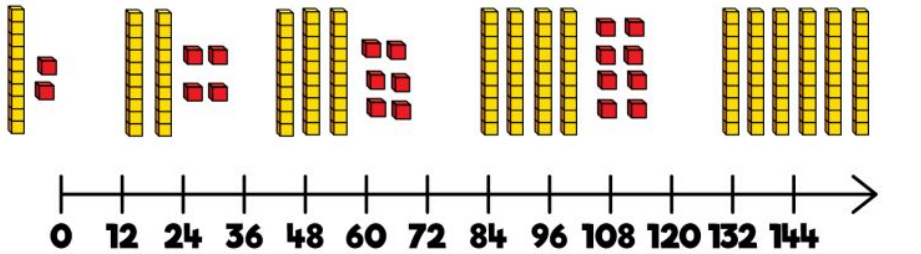
Calculation Policy

Skill: 12 times table

Year 4

12	24	36	48	60
72	84	96	108	120
132	144			

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100



Regular counting in multiples of 12 both forward and backward.

- Support with number line or hundred square.

Pattern spotting–
all multiples are even
repeating pattern in ones column every 5 multiples (highlight on hundred (200) square)
link to 6 times table (doubles)
link to 3 times table (double & double again or multiply by 4)
children to investigate own links between other times tables multiples and twelves

- Support with concrete manipulatives.

Develop fluency with use of different models