

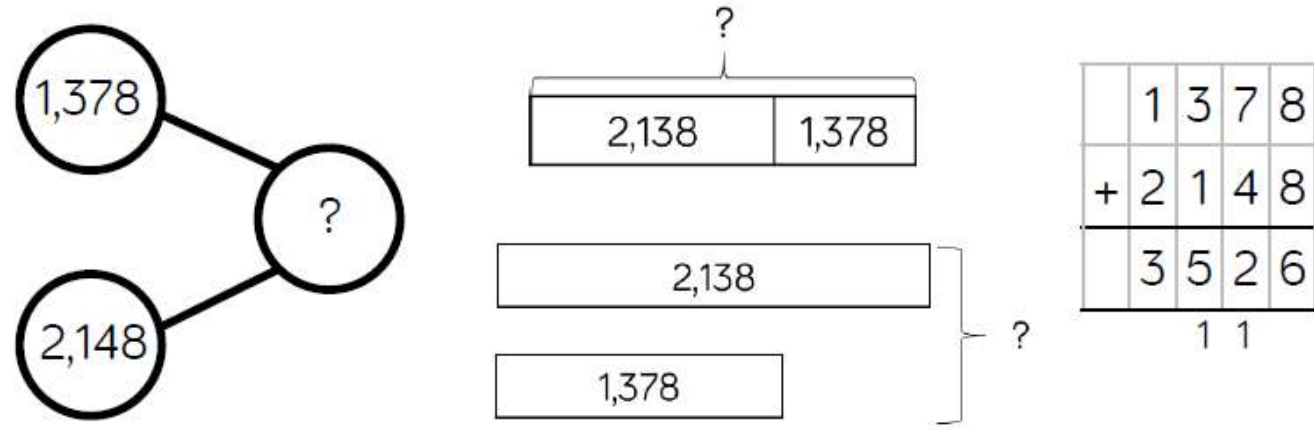
SCPS Calculation Guide

Year 4

This guide shows illustrations and examples of the methods used to teach addition, subtraction, multiplication and division



Year 4 **Addition** Add numbers with up to 4 digits



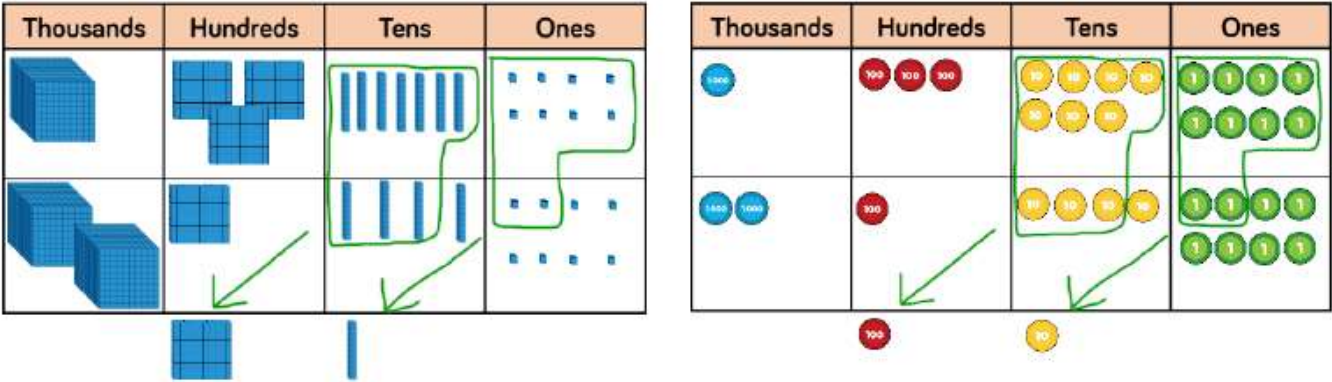
$$1,378 + 2,148 = 3,526$$

Models and Representations	
Bar model	Part-whole model
Place Value Counters	
Base 10	Column Addition

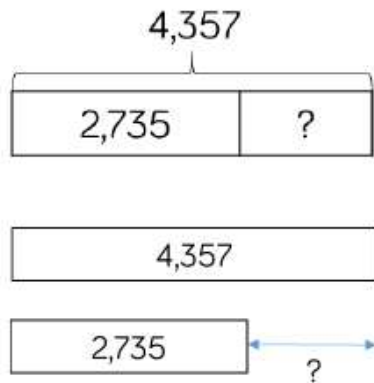
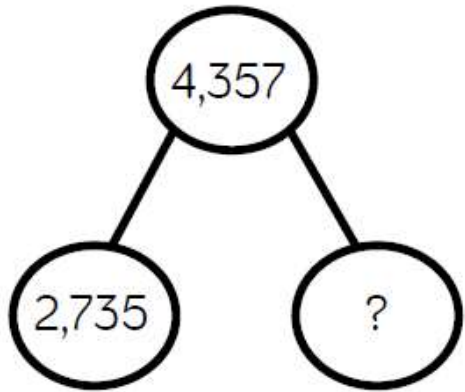
Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

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



Year 4 Subtraction Subtract numbers with up to 4 digits



$$\begin{array}{r}
 \begin{array}{c} 3 \quad 1 \\ \cancel{4}357 \end{array} \\
 - 2735 \\
 \hline
 1622
 \end{array}$$

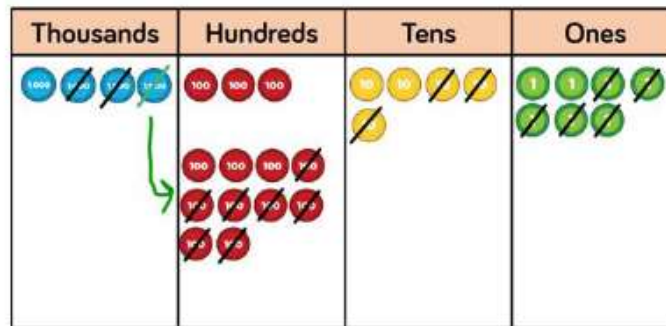
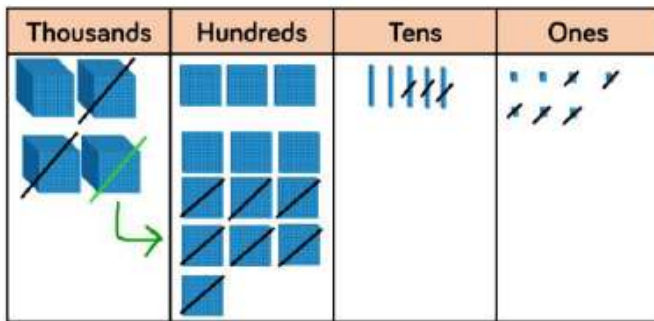
$$4,357 - 2,735 = 1,622$$

Models and Representations	
Bar model	Part-whole model
Place Value Counters	
Base 10	Column Subtraction

Base 10 and place value counters are the most effective manipulatives when subtracting numbers with up to 4 digits.

Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method.

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



Year 4 Times Tables

Skill: 6 times table

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

Year: 4

Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the six times table, using manipulatives to support. Make links to the 3 times table, seeing how each multiple is double the threes. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: 9 times table

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

Year: 4

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as noting the odd, even pattern within the multiples.

Skill: 7 times table

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

Year: 4

Encourage daily counting in multiples both forwards and backwards, supported by a number line or a hundred square. The seven times table can be trickier to learn due to the lack of obvious pattern in the numbers, however they already know several facts due to commutativity. Children can still see the odd, even pattern in the multiples using number shapes to support.

Skill: 11 times table

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

Year: 4

Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after crossing 100

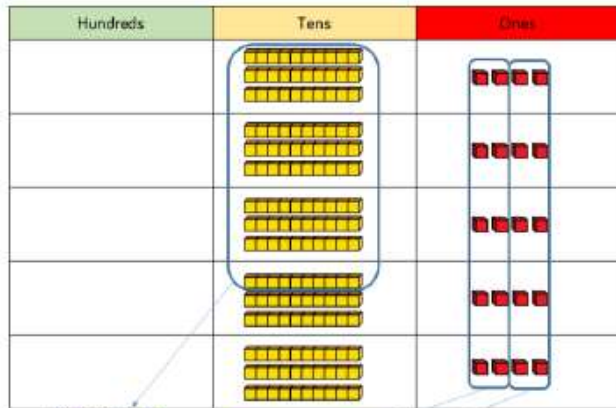
Year 4 Times Tables

Skill: 12 times table						Year: 4									
12	24	36	48	60		1	2	3	4	5	6	7	8	9	10
72	84	96	108	120		11	12	13	14	15	16	17	18	19	20
132	144					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

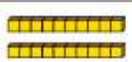
Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the 12 times table, using manipulatives to support. Make links to the 6 times table, seeing how each multiple is double the sixes. Notice the pattern in the ones within each group of five multiples. The hundred square can support in highlighting this pattern.

Year 4 Multiplication

Multiply 2-digit numbers by 1-digit numbers

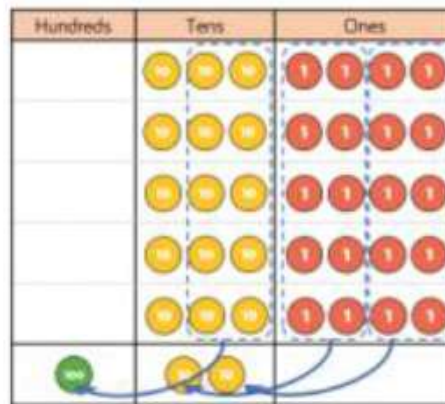


	H	T	O	
		3	4	
×			5	
		2	0	(5 × 4)
+	1	5	0	(5 × 30)
	1	7	0	



$$34 \times 5 = 170$$

	H	T	O
		3	4
×			5
	1	7	0
	1	2	



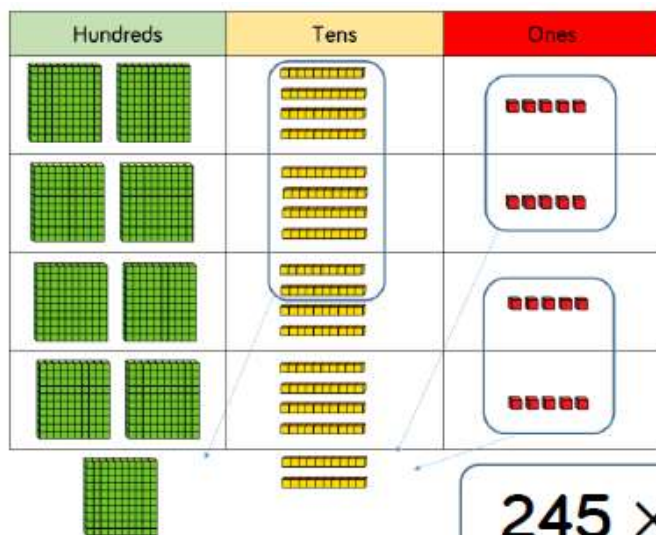
Models and Representations	
Hundred square	
Number shapes	
Counters	
Bead strings	
Short Multiplication	
Everyday objects	

Informal methods and the expanded method are used in Year 3 before moving on to the short multiplication method in Year 4.

Place value counters should be used to support the understanding of the method rather than supporting the multiplication, as children should use times table knowledge.

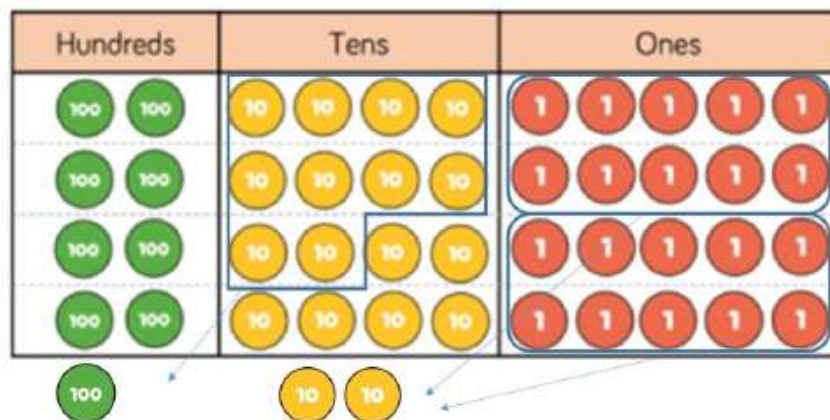
Year 4 Multiplication

Multiply 3-digit numbers by 1-digit numbers



$$245 \times 4 = 980$$

	H	T	O
	2	4	5
\times			4
	9	8	0
	1	2	



Models and Representations

Place Value Counters
Base 10

Short Written method

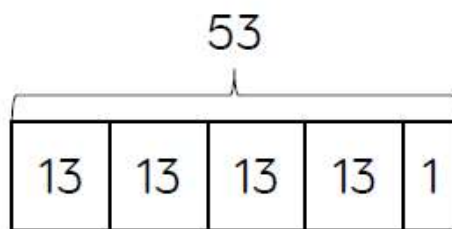
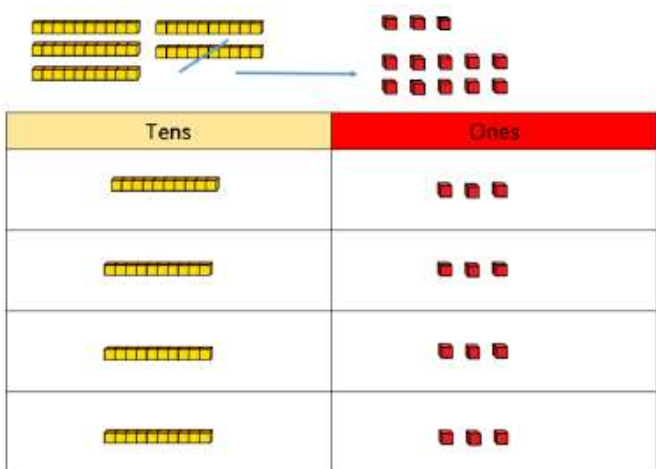
When moving to 3-digit by 1-digit multiplication, encourage children to move towards the short, formal written method.

Base 10 and place value counters continue to support the understanding of the written method.

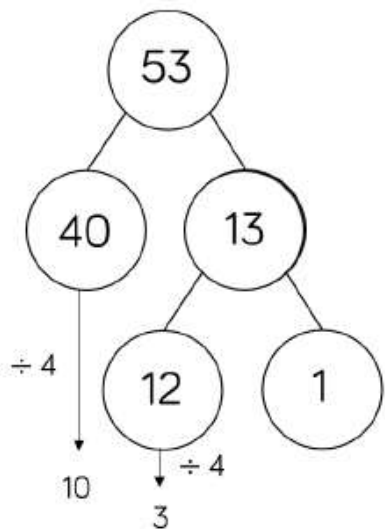
Limit the number of exchanges needed in the questions and move children away from resources when multiplying larger numbers.

Year 4 Division

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



$$53 \div 4 = 13 \text{ r}1$$



Models and Representations
Part-whole model Bar model Straws
Base 10 Place value counters

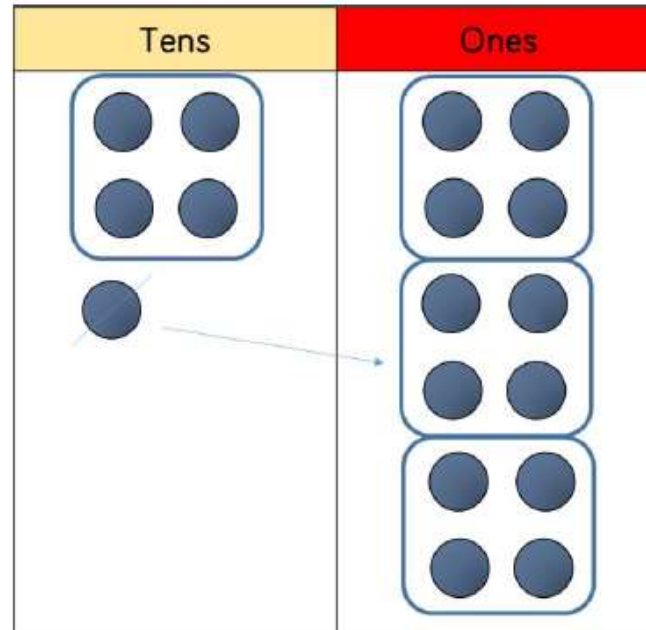
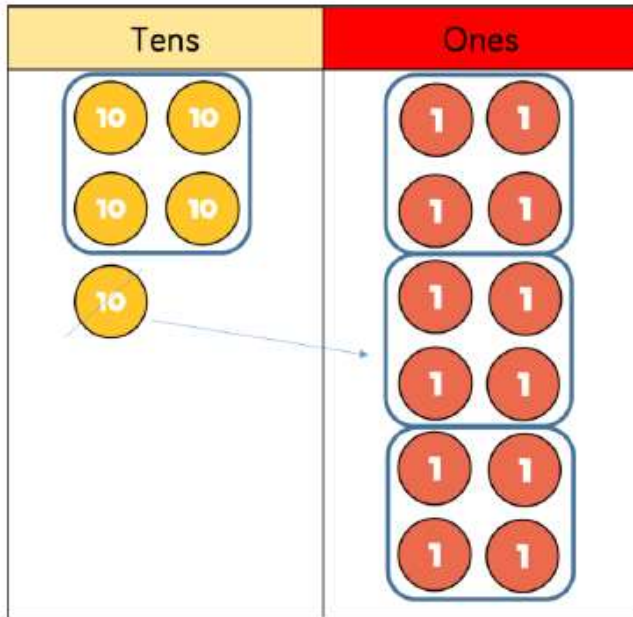
When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.

Starting with the equipment outside the place value grid will highlight remainders, as they will be left outside the grid once the equal groups have been made.

Flexible partitioning in a part-whole model supports this method.

Year 4 Division

Divide 2-digits by 1-digit (grouping)



$$52 \div 4 = 13$$

Models and Representations

Place Value Counters
Counters

Place Value Grid

Written short division

When using the short division method, children use grouping. Starting with the largest place value, they group by the divisor.

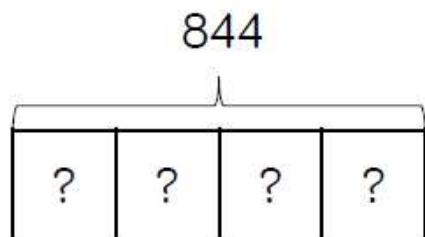
Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?'

Remainders can also be seen as they are left ungrouped.

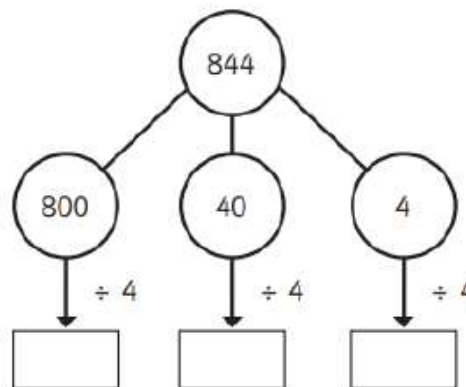
Year 4 Division

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

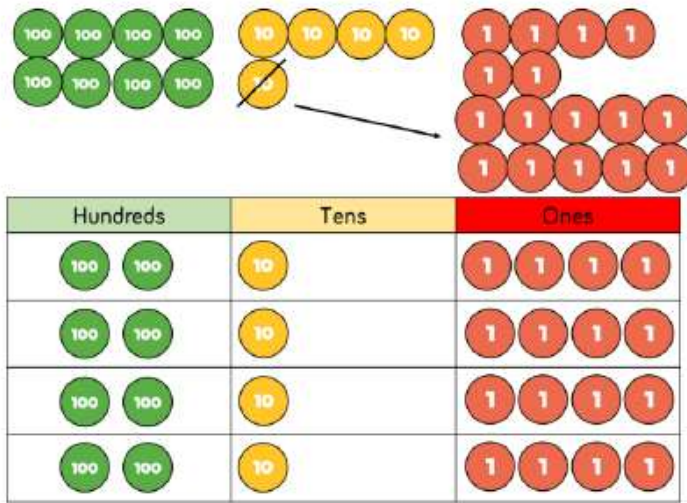
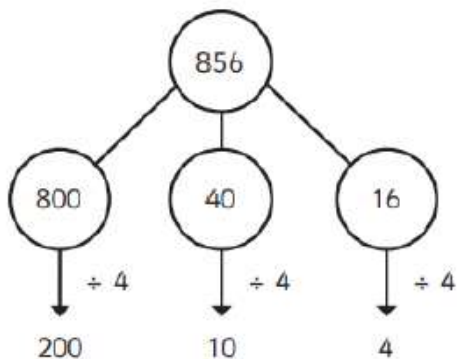
$$844 \div 4 = 211$$



H	T	O
100 100	10	1
100 100	10	1
100 100	10	1
100 100	10	1



$$856 \div 4 = 214$$



Models and Representations

Base 10
Bar model

Place value counters
Part-whole model

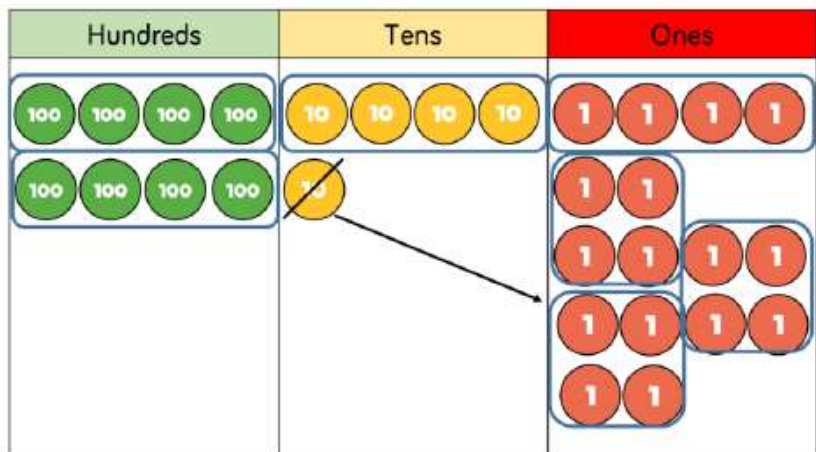
Children can continue to use place value counters to share 3-digit numbers into equal groups.

Children should start with the equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows. This method can also help to highlight remainders.

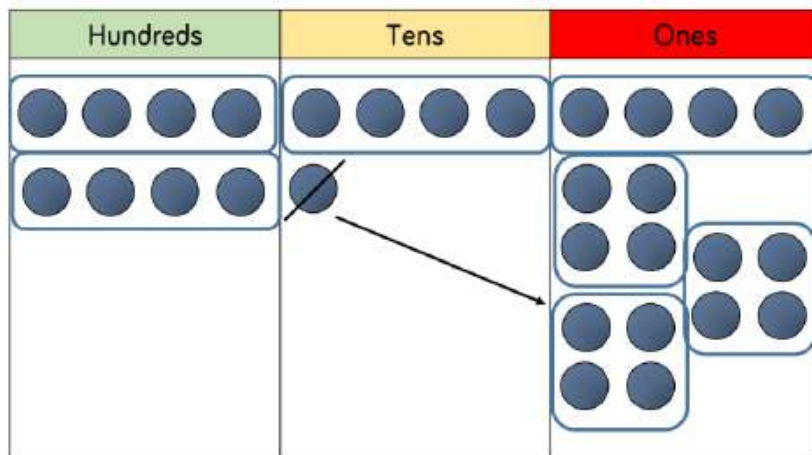
Flexible partitioning in a part-whole model supports this method.

Year 4 Division

Divide 3-digits by 1-digit (grouping)



		2	1	4
	4	8	5	16



$$856 \div 4 = 214$$

Models and Representations

Place Value counters
Place Value Grid

Base 10

Written Division

Children can continue to use grouping to support their understanding of short division when dividing a 3-digit number by a 1-digit number.

Place value counters or plain counters can be used on a place value grid to support this understanding.

Children can also draw their own counters and group them through a more pictorial method.