Foxfields Academy Calculation Policy
Last Reviewed: February 2024
Review Date: June 2025

Our Vision

At Foxfields our curriculum intent is as follows –
'A tailored curriculum designed to prepare our pupils to be confident and successful individuals who make outstanding progress and are prepared for life after school.'

At Foxfields Academy, we believe that children should be exposed to mathematics through oral, visual, pictorial and concrete strategies. Mathematics should always be meaningful and purposeful and be as close to 'real life' experiences as possible. The aim is that children use mental methods when appropriate, but for calculations that they cannot do in their heads they use an efficient written method accurately and with confidence.

Our calculation Policy has been adapted from White Rose Maths. This document identifies the progress in calculation strategies for all children, moving from concrete, pictorial and abstract. Formal methods to 1000 will be taught as the highest progression. This will work alongside and up to the Step 6 curriculum. Children will progress into the next stage when they are ready and when they are confident in their fluency and reasoning. This policy contains the methods that will be taught within our school alongside practical resources. It has been written to ensure consistency and progression throughout the school.

Our calculation curriculum promotes Foxfields ethos and is underpinned by our purpose 'To put learners first and prepare them for their future' it is also fundamental for our strategic vision which is that 'At Foxfields there will be no limit to the possibilities for our pupils. We want to build a first-class education provision that provides highly tailored learning to ensure that our pupils are best prepared for life after school'.

At Foxfields we believe that calculation is vital in order to foster confidence and achievement in a skill that is essential in our society and in everyday life. We are committed to ensuring that all pupils achieve mastery in key concepts of mathematics, appropriate and specific to them. They will make genuine progress and avoid gaps that may provide barriers to learning as they move through education. Assessment for Learning, and emphasis on investigation, problem solving, real life examples, jobs and the development of mathematical thinking are essential components of the approach to mathematics at Foxfields. A rigorous and detailed evaluation of planning, teaching and assessment is important to provide continued improvement and development of calculation at Foxfields.

Resource Allocation:

Resources are selected to teach calculation that are:

- Age appropriate
- Non-discriminatory
- In accord with the values of Foxfields

Accurate mathematical vocabulary is used in our teaching and children are expected to use this in their verbal and written examples. Number facts and mental recall is established before standard written methods are introduced.

Mathematics contributes to many other subjects and is it important that pupils are given opportunities for cross curricular development. It is important that mathematics is highlighted and planned into other curriculums such as Science and ICT. Other examples may include properties of shape in Art and Design Technology or the collection and presentation of data in History and Geography.

We endeavour to set work that is challenging and personalised. Each class will use differentiated and specific worksheets and resources. Additional enrichment opportunities will be encouraged such as cooking, music or building. Each pupil will have a specific calculation starter at the beginning of each lesson. They will also have personalised access to a multiplication booklet to develop their multiplication and division skills.

Assessment

Foxfields uses a bespoke assessment system which has been designed around the National Curriculum. This is used to inform planning and facilitate differentiation in lessons. The assessment removes the use of levels by including 1-5 grading descriptors. This provides a deeper understanding of attainment and progress. All assessments and teaching inform teachers understanding of a child's ability in mathematics. The school's Assessment and Marking Policies inform high quality feedback and pupils' response to it in Mathematics (Number).

Safeguarding:

Should any topic be raised by a pupil that is not part of the lesson the member of teaching staff will discuss with the pupil outside of the lesson time. If there are any concerns for the pupil safety then the safeguarding team will be informed immediately and other organisations contacted were necessary.

Monitoring and review

Mathematics is the responsibility of all staff at Foxfields however the Calculation subject leader will also:

- Support colleagues in their teaching, by keeping informed about current developments in the subject and providing resources where appropriate,
- Contribute to staff meetings and training sessions to facilitate the teaching of mathematics
- Contribute to quality assurance processes involving the subject such as moderation and lesson drop ins.

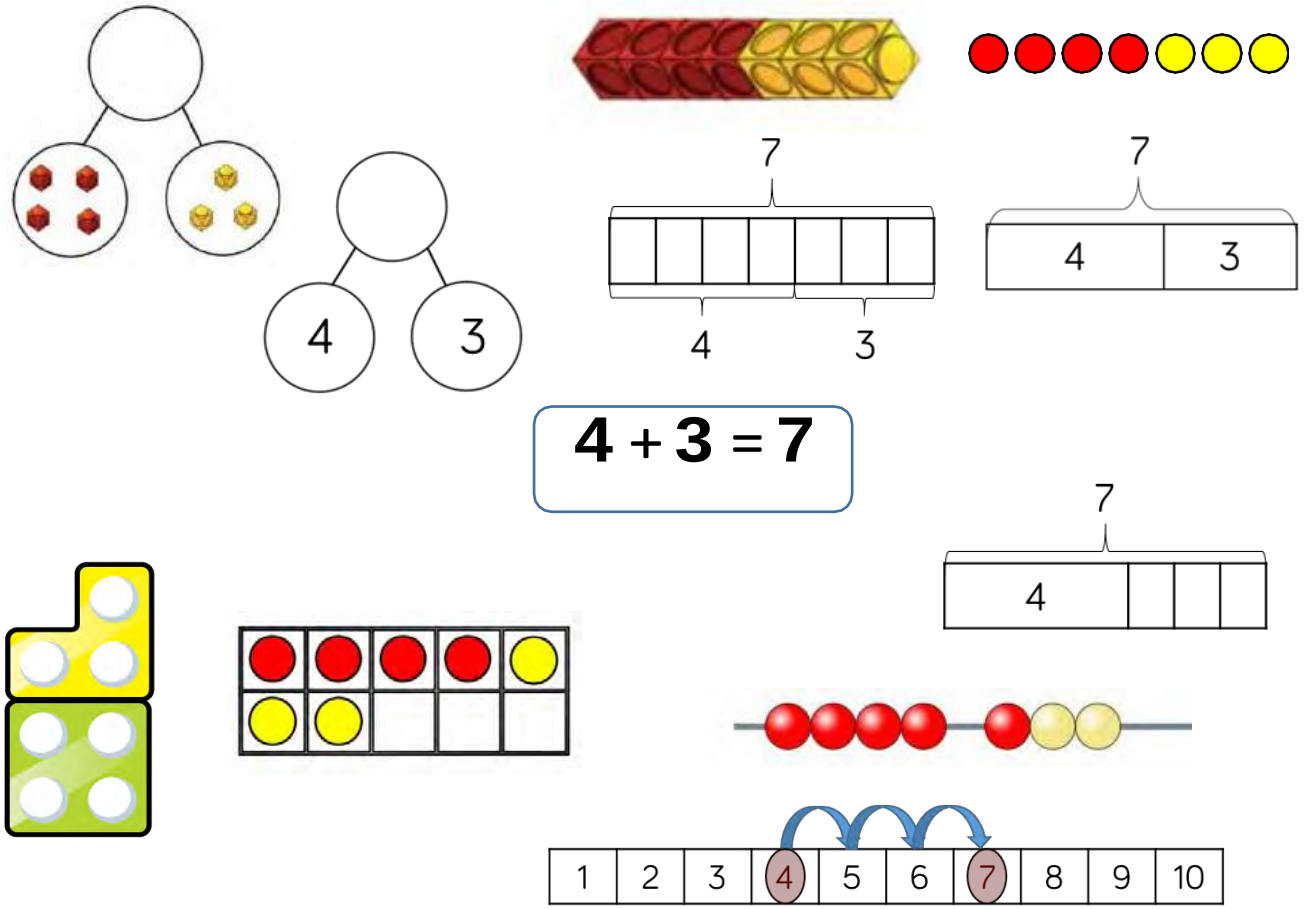
Lead staff are expected to monitor the progress of pupils in Mathematics through the school's assessment system.

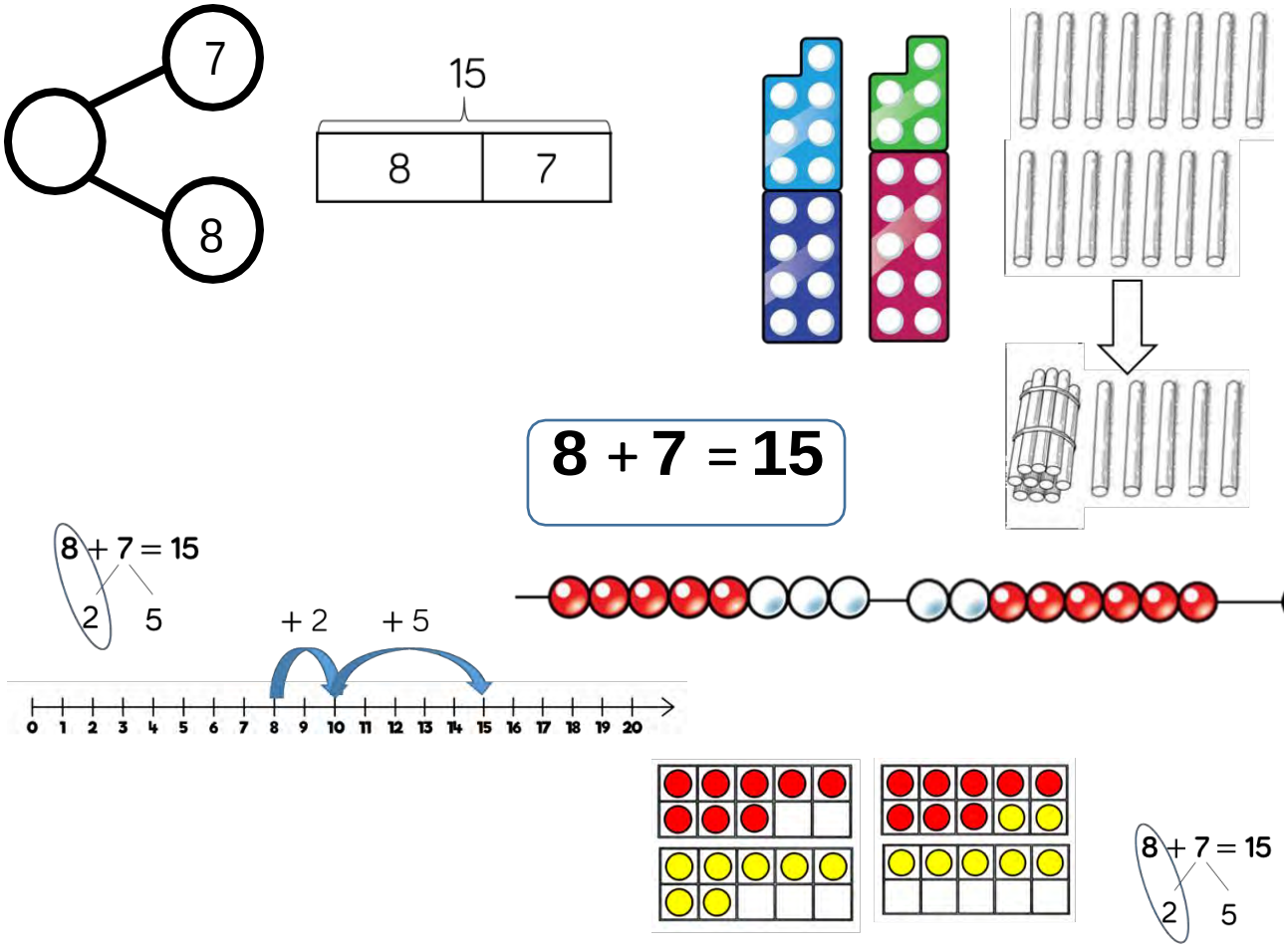
Policy Review

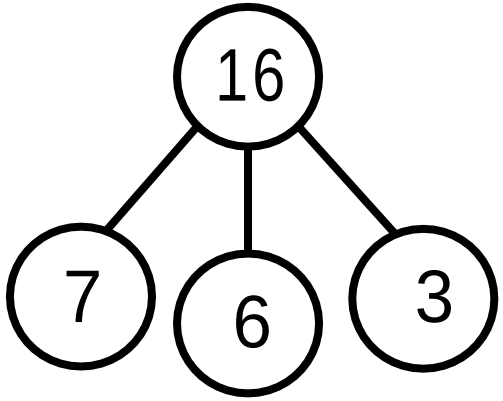
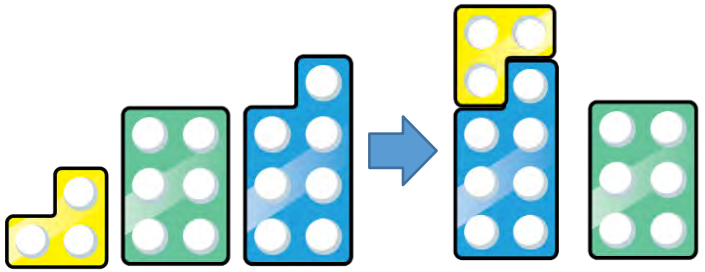
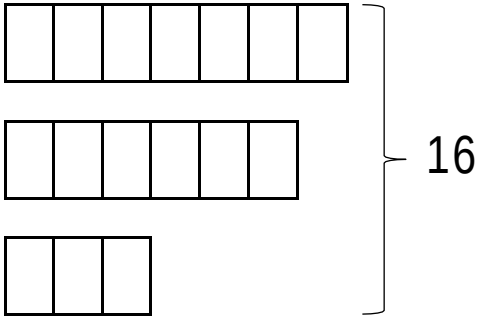
Foxfields considers the Calculation Policy document to be important and the policy will be reviewed by the Calculation subject leader every year.

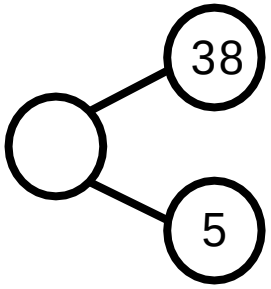
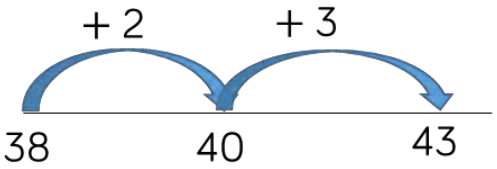
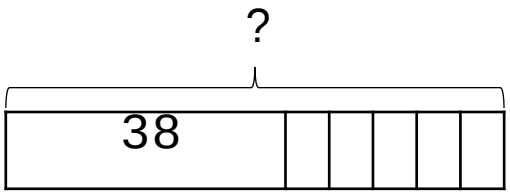
Skill	Step	Representations and models	
Add two 1-digit numbers to 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Add 1 and 2-digit numbers to 20	1	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead strings (20) Number tracks Number lines (labelled) Straws
Add three 1-digit numbers	2	Part-whole model Bar model	Ten frames (within 20) Number shapes
Add 1 and 2-digit numbers to 100	2	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square

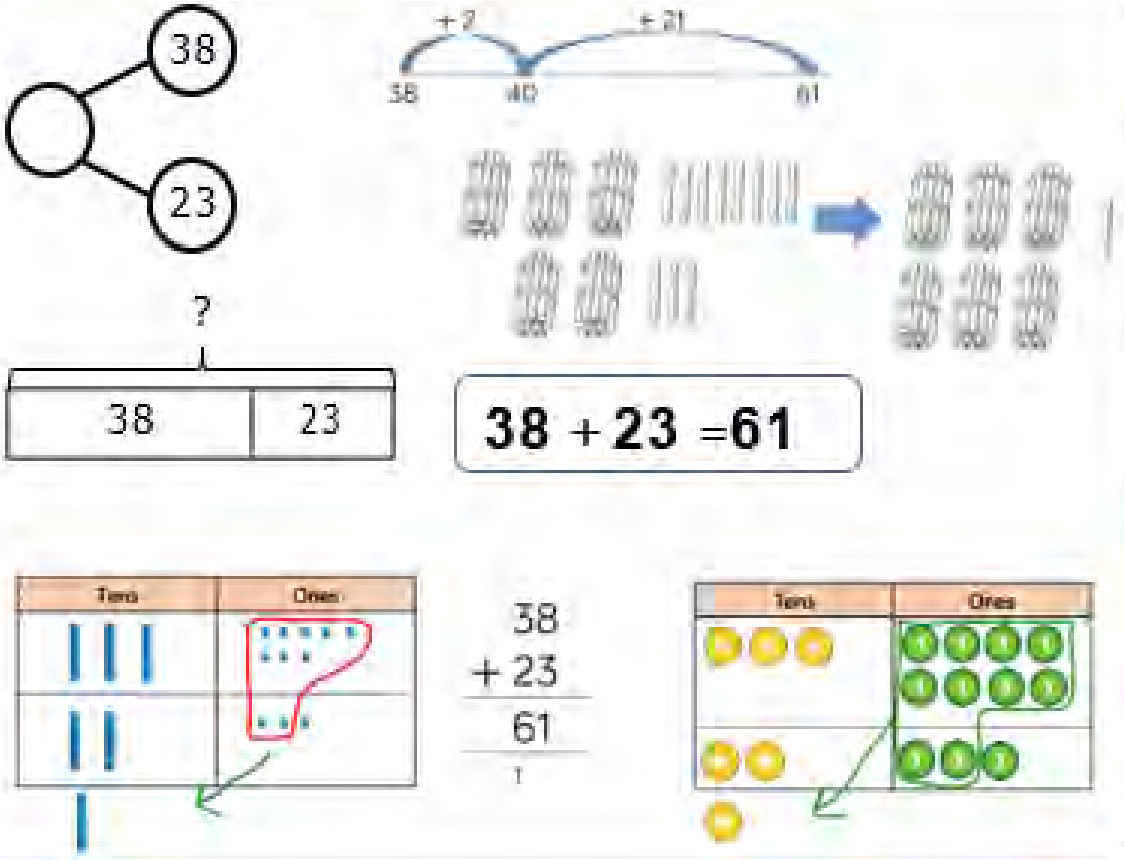
Skill	Step	Representations and models	
Add two 2-digit numbers	2	Part-whole model Bar model Number lines (blank) Straws	Base 10 Place value counters
Add with up to 3-digits	3	Part-whole model Bar model	Base 10 Place value counters Column addition
Add with up to 4-digits	4	Part-whole model Bar model	Base 10 Place value counters Column addition
Add with more than 4 digits	5	Part-whole model Bar model	Place value counters Column addition
Add with up to 3 decimal places	5	Part-whole model Bar model	Place value counters Column addition

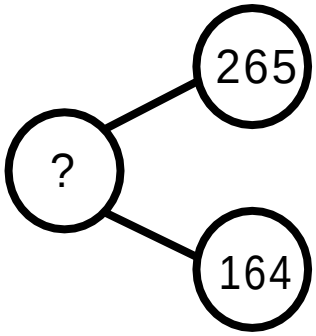
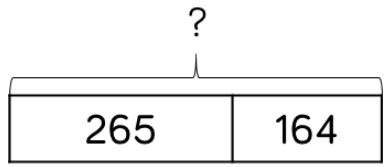
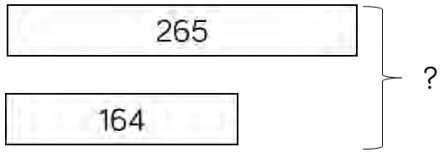
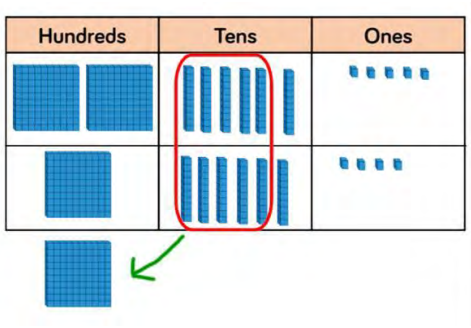
Skill: Add 1-digit numbers within 10	Step: 1
	When adding numbers to 10, children can explore both aggregation and augmentation. The part-whole model, discrete and continuous bar model, number shapes and ten frame support aggregation. The combination bar model, ten frame, bead string and number track all support augmentation.

Skill: Add 1 and 2-digit numbers to 20	Step: 1/2
	When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten. In Step 1, this is only done just by counting on. From Step 2, use different manipulatives can be used to represent this exchange alongside number lines to support children in understanding how to partition their jumps.

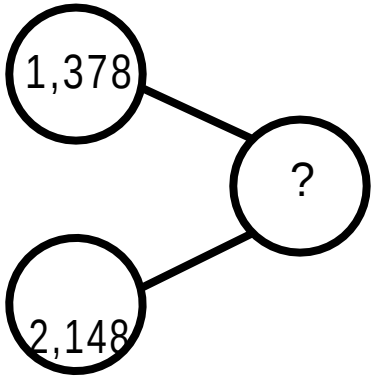
Skill: Add three 1-digit numbers	Step: 2
  **7 + 6 + 3 = 16** 	When adding three 1-digit numbers, children should be encouraged to look for number bonds to 10 or doubles to add the numbers more efficiently. This supports children in their understanding of commutativity. Manipulatives that highlight number bonds to 10 are effective when adding three 1-digit numbers.

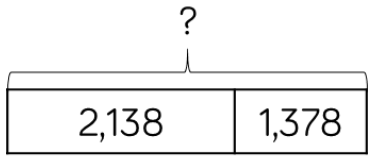
Skill: Add 1-digit and 2-digit numbers to 100	Step: 2/3
    **38 + 5 = 43**	When adding single digits to a two-digit number, children should be encouraged to count on from the larger number. They should also apply their knowledge of number bonds to add more efficiently e.g. 8 + 5 = 13 so 38 + 5 = 43. Hundred squares and straws can support children to find the number bond to 10.

Skill: Add two 2-digit numbers to 100	Step: 2/3
	Children can use a blank number line and other representations to count on to find the total. Encourage them to jump to multiples of 10 to become more efficient. From Step 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

Skill: Add numbers with up to 3 digits	Step: 3
   **265 + 164 = 429**  265 + 164 429 1	Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 3 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.

Skill: Add numbers with up to 4 digits	Step: 4

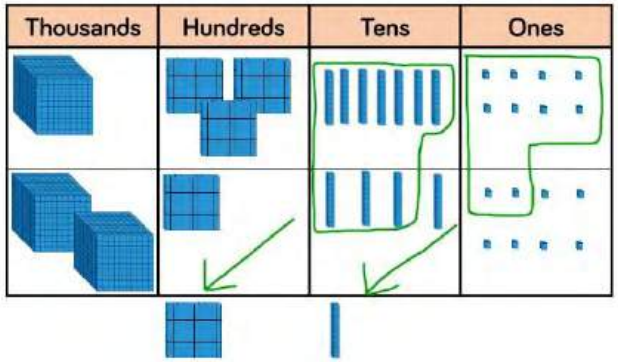


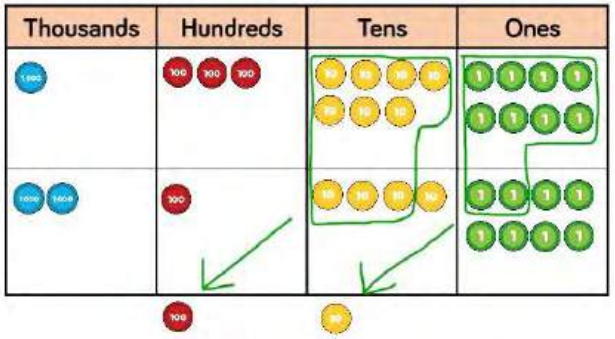


	1	3	7	8
+	2	1	4	8
	3	5	2	6

1 1

1,378 + 2,148 = 3,526

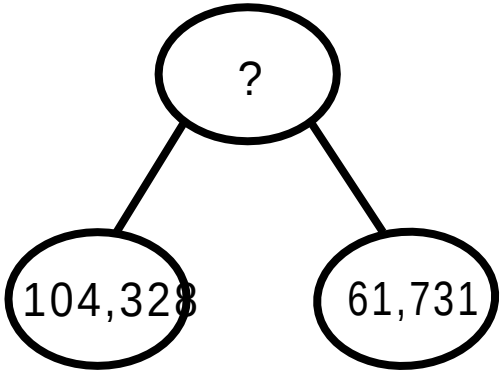
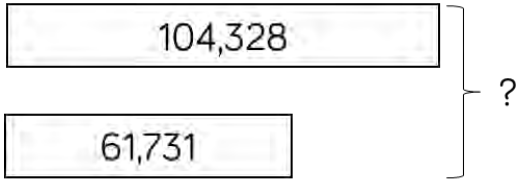
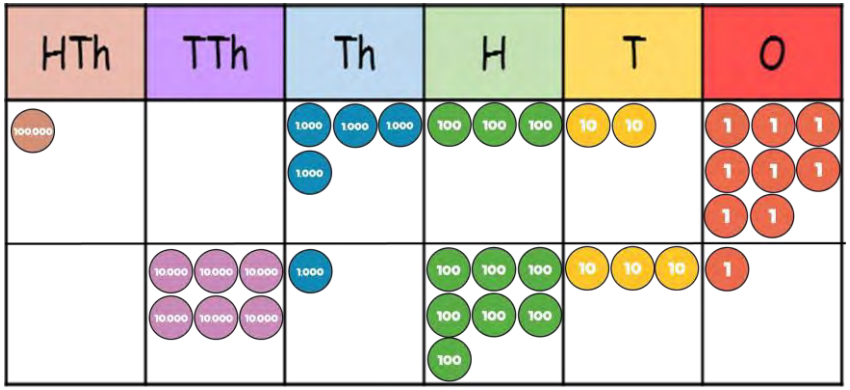


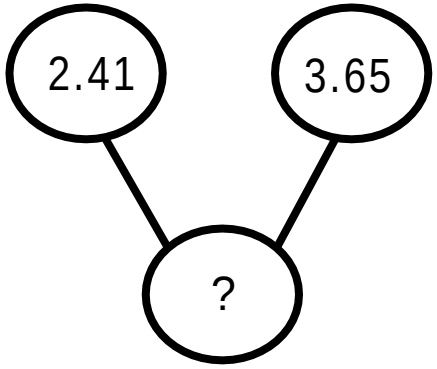
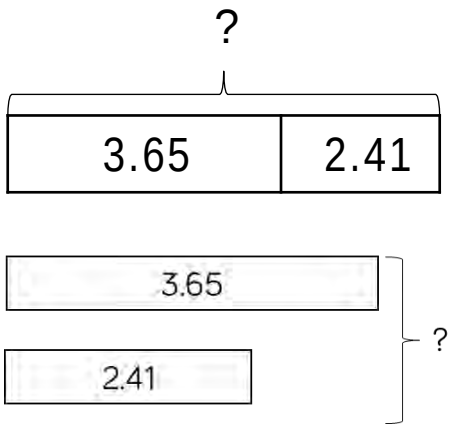


Base 10 and place value counters are the most effective manipulatives when adding numbers with up to 4 digits.

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.

Skill: Add numbers with more than 4 digits	Step: 5/6
  **104,328 + 61,731 = 166,059** 	Place value counters or plain counters on a place value grid are the most effective concrete resources when adding numbers with more than 4 digits. At this stage, children should be encouraged to work in the abstract, using the column method to add larger numbers efficiently.

Skill: Add with up to 3 decimal places	Step: 5
  $3.65 + 2.41 = 6.06$ $\begin{array}{r} 3.65 \\ +\ 2.41 \\ \hline 6.06 \\ \hline 1 \end{array}$	Place value counters and plain counters on a place value grid are the most effective manipulatives when adding decimals with 1, 2 and then 3 decimal places. Ensure children have experience of adding decimals with a variety of decimal places. This includes putting this into context when adding money and other measures.

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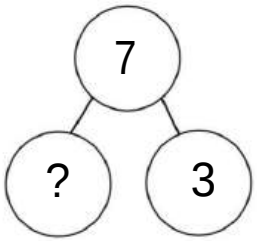
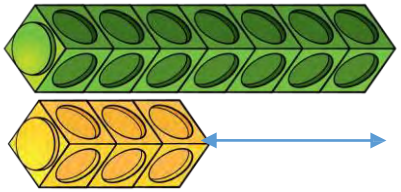
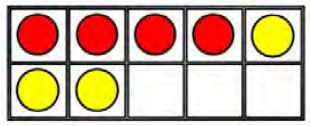
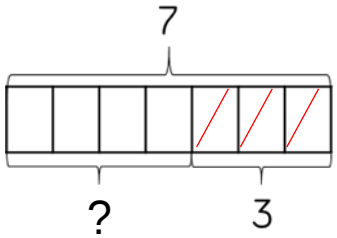
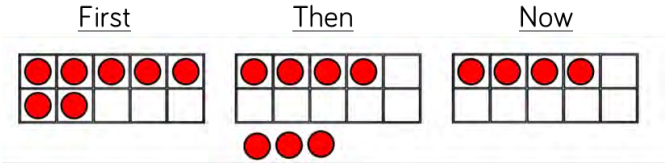
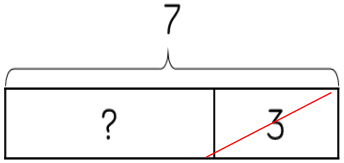
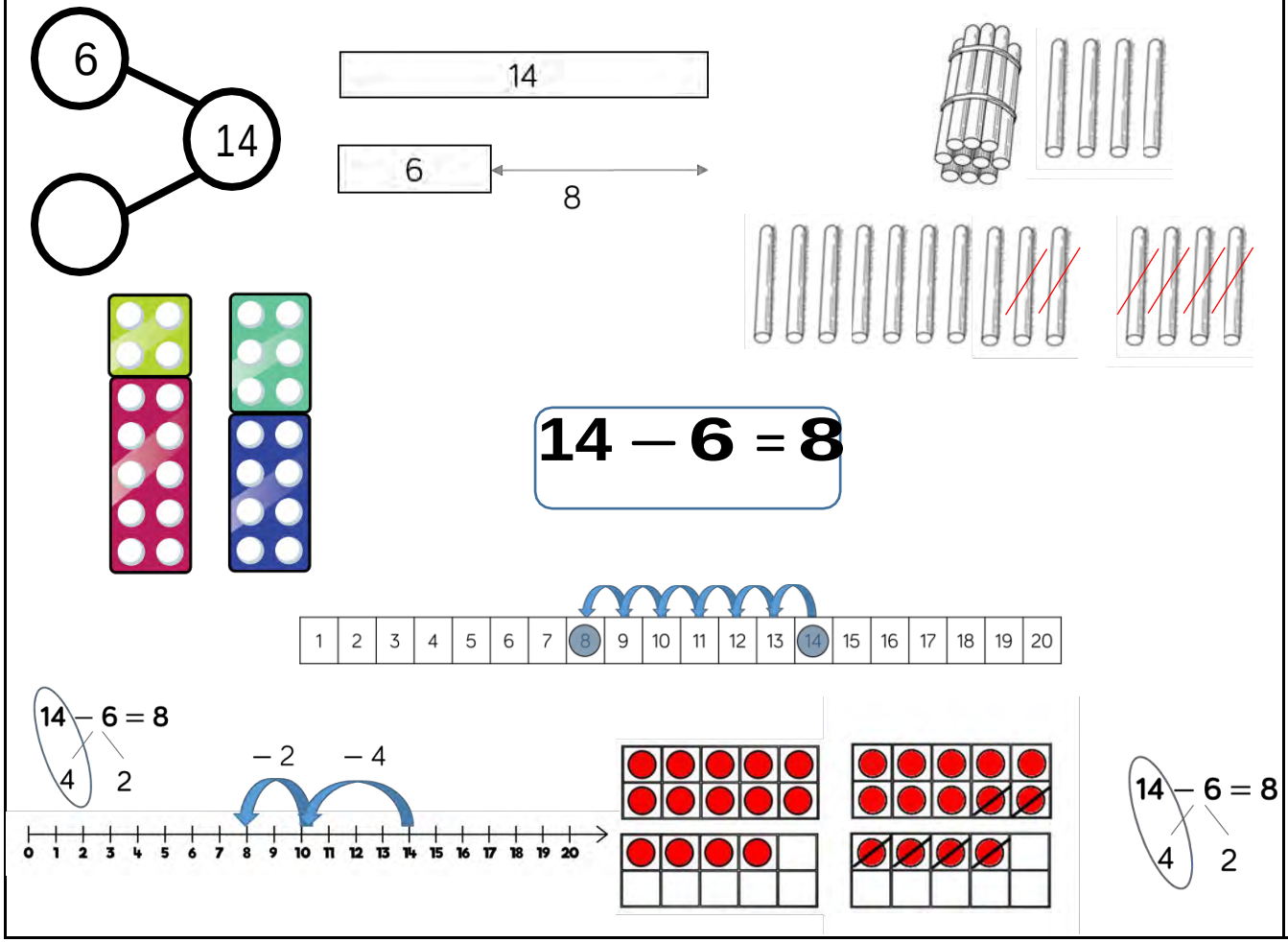
Skill	Step	Representations and models	
Subtract two 1-digit numbers to 10	1	Part-whole model Bar model Number shapes	Ten frames (within 10) Bead strings (10) Number tracks
Subtract 1 and 2-digit numbers to 20	1	Part-whole model Bar model Number shapes Ten frames (within 20)	Bead string (20) Number tracks Number lines (labelled) Straws
Subtract 1 and 2-digit numbers to 100	2	Part-whole model Bar model Number lines (labelled)	Number lines (blank) Straws Hundred square
Subtract two 2-digit numbers	2	Part-whole model Bar model Number lines (blank) Straws	Base 10 Place value counters

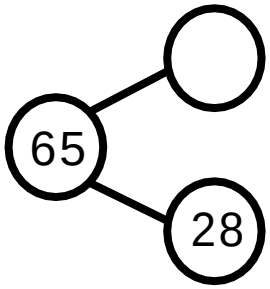
Skill	Step	Representations and models	
Subtract with up to 3-digits	3	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with up to 4-digits	4	Part-whole model Bar model	Base 10 Place value counters Column subtraction
Subtract with more than 4 digits	5	Part-whole model Bar model	Place value counters Column subtraction
Subtract with up to 3 decimal places	5	Part-whole model Bar model	Place value counters Column subtraction

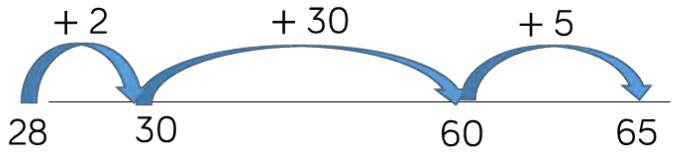
Skill: Subtract 1-digit numbers within 10	Step: 1
    $7 - 3 = 4$    	Part-whole models, bar models, ten frames and number shapes support partitioning. Ten frames, number tracks, single bar models and bead strings support reduction. Cubes and bar models with two bars can support finding the difference.

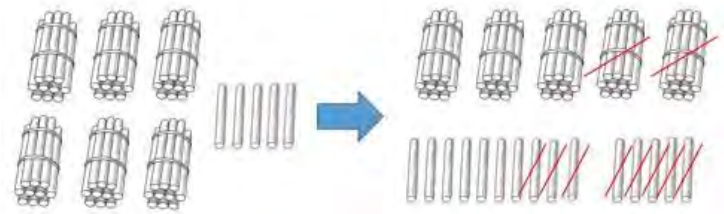
Skill: Subtract 1 and 2-digit numbers to 20	Step: 1/2
	In Step 1, subtracting one-digit numbers that cross 10, is done by counting back, using objects, number tracks and number lines. From Step 2, children should be encouraged to find the number bond to 10 when partitioning the subtracted number. Ten frames, number shapes and number lines are particularly useful for this.

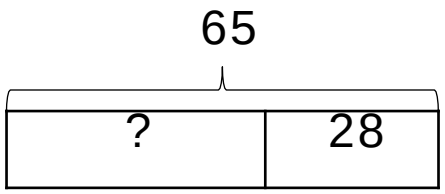
Skill: Subtract 1 and 2-digit numbers to 100

Step: 2/3

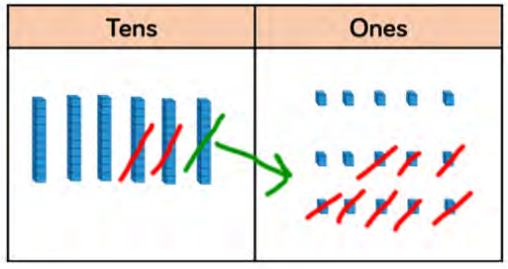




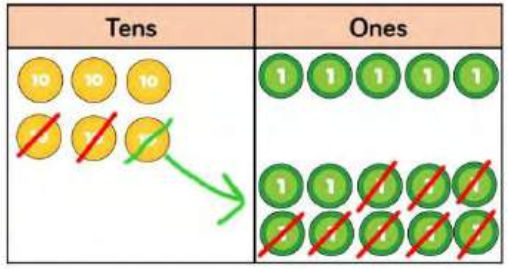




65 — 28 = 37

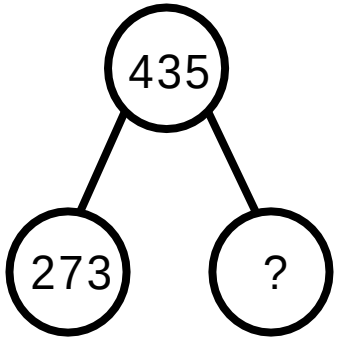
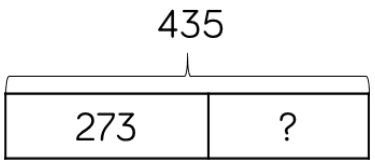
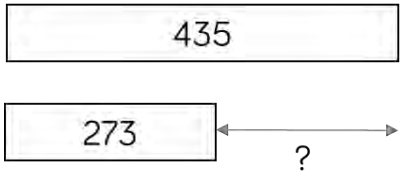
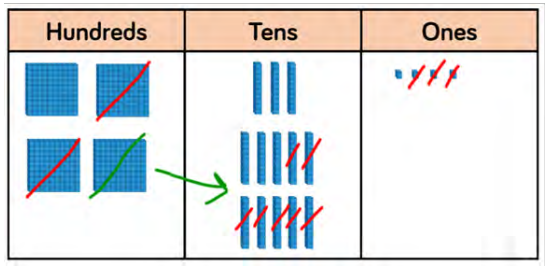
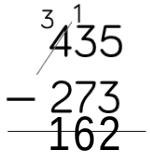
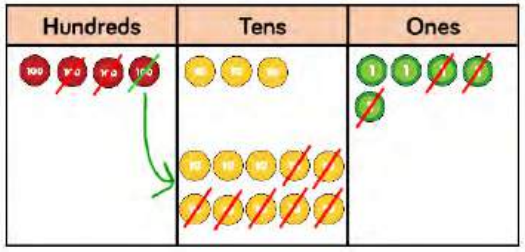


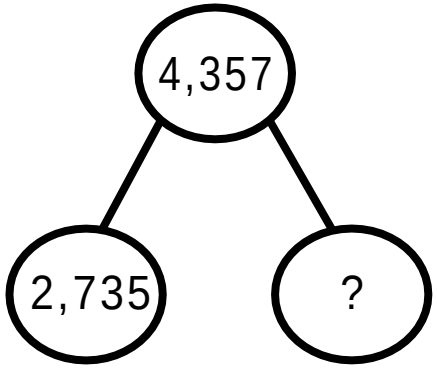
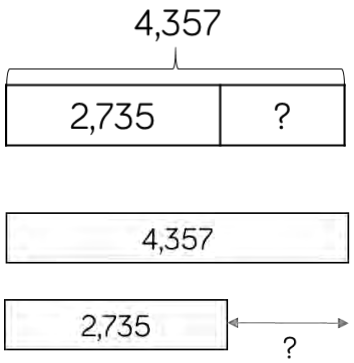
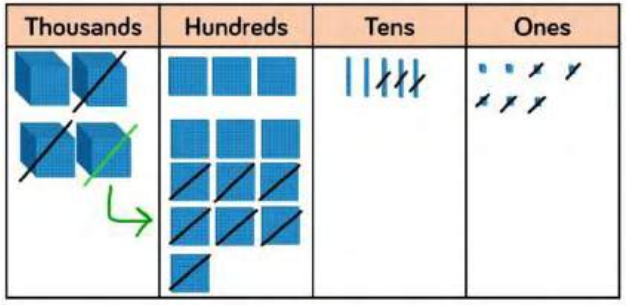
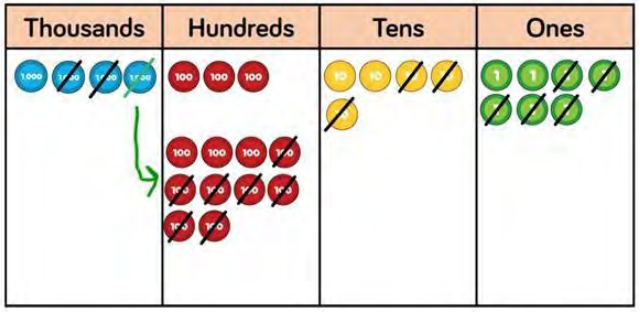
$$\begin{array}{r} {}^{5}\not{6}\,{}^{1}\not{5} \\ -\ 2\ 8 \\ \hline 3\ 7 \end{array}$$



Children can also use a blank number line to count back to find the difference. Encourage them to jump to multiples of 10 to become more efficient.

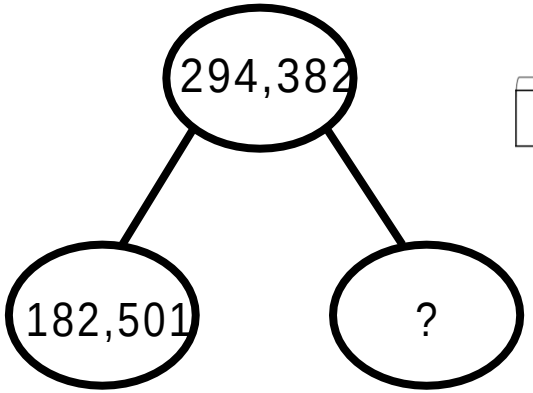
From Step 3, encourage children to use the formal column method when calculating alongside straws, base 10 or place value counters. As numbers become larger, straws become less efficient.

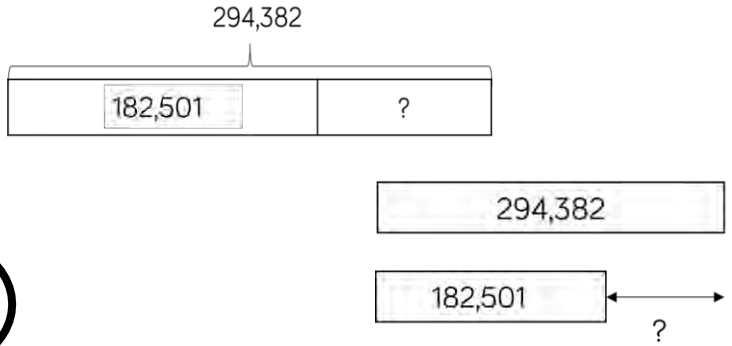
Skill: Subtract numbers with up to 3 digits	Step: 3
   **435 — 273 = 162**   	Base 10 and place value counters are the most effective manipulative when subtracting numbers with up to 3 digits. Ensure children write out their calculation alongside any concrete resources so they can see the links to the written column method. Plain counters on a place value grid can also be used to support learning.

Skill: Subtract numbers with up to 4 digits	Step: 4
  3 1 ~~4~~3~~5~~7 − 2735 1622 **4,357 − 2,735 = 1,622**  	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.

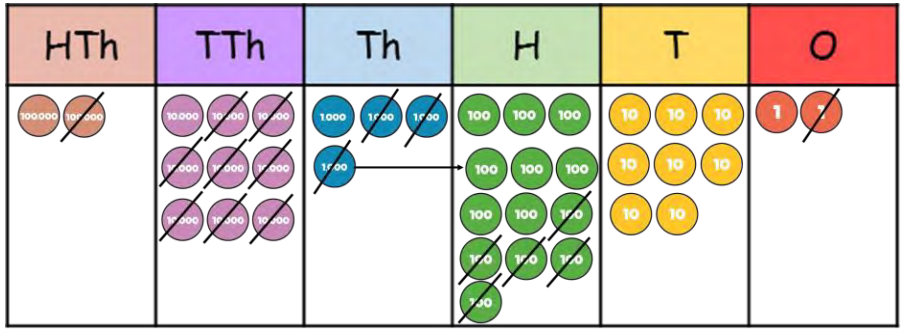
Skill: Subtract numbers with more than 4 digits

Step: 5/6





294,382 — 182,501 = 111,881



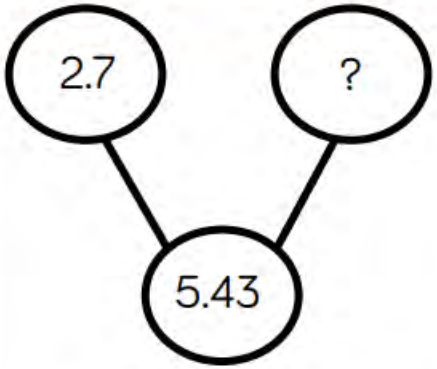
	2	9	$^{3}\cancel{4}$	$^{1}3$	8	2
–	1	8	2	5	0	1
	1	1	1	8	8	1

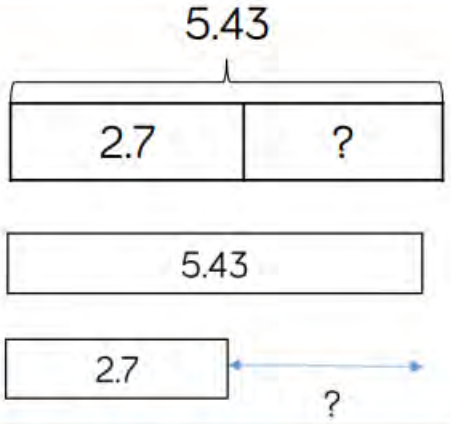
Place value counters or plain counters on a place value grid are the most effective concrete resource when subtracting numbers with more than 4 digits.

At this stage, children should be encouraged to work in the abstract, using column method to subtract larger numbers efficiently.

Skill: Subtract with up to 3 decimal places

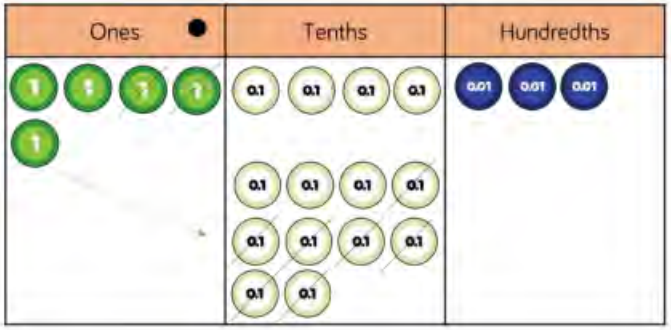
Step 5/6

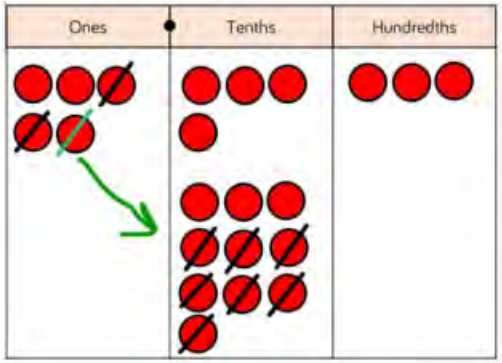




$$\begin{array}{r} {}^{4}\cancel{5}.{}^{1}43 \\ -\ 2.7 \\ \hline 2.73 \end{array}$$

$$5.43 - 2.7 = 2.73$$





Place value counters and plain counters on a place value grid are the most effective manipulative when subtracting decimals with 1, 2 and then 3 decimal places.

Ensure children have experience of subtracting decimals with a variety of decimal places. This includes putting this into context when subtracting money and other measures.

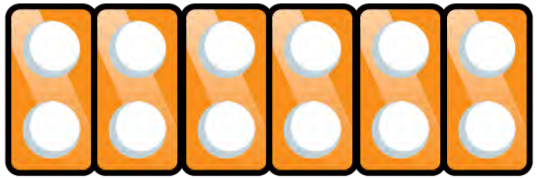
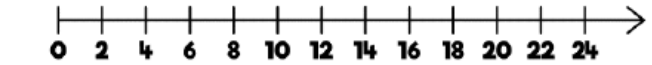
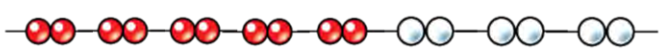
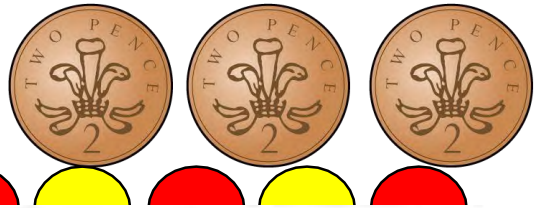
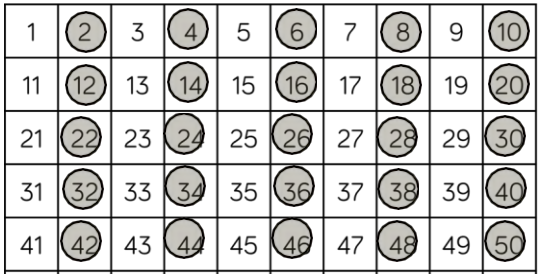
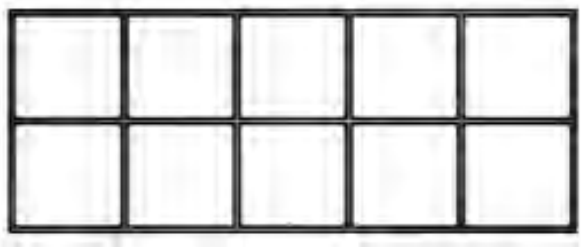
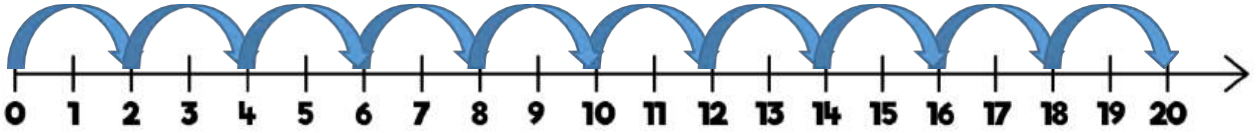
Skill	Step	Representations and models	
Recall and use multiplication and division facts for the 2-times table	2	Bar model Number shapes Counters Money	Ten frames Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 5-times table	2	Bar model Number shapes Counters Money	Ten frames Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the 10-times table	2	Hundred square Number shapes Counters Money	Ten frames Bead strings Number lines Base 10

Skill	Step	Representations and models	
Recall and use multiplication and division facts for the3-times table	3	Hundred square Number shapes Counters	Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the4-times table	3	Hundred square Number shapes Counters	Bead strings Number lines Everyday objects
Recall and use multiplication and division facts for the8-times table	3	Hundred square Number shapes	Bead strings Number tracks Everyday objects

Recall and use multiplication and division facts for the6-times table	4	Hundred square Number shapes	Bead strings Number tracks Everyday objects

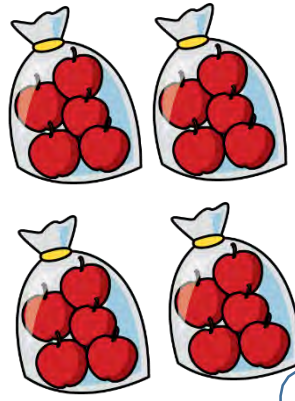
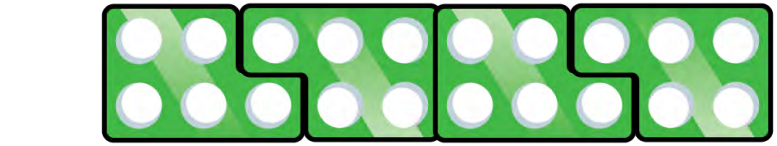
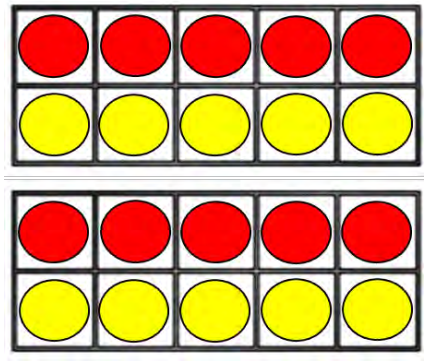
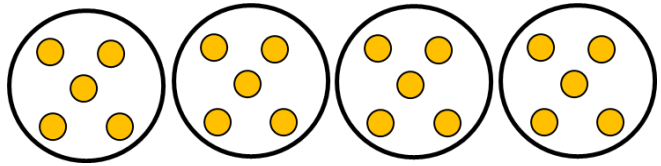
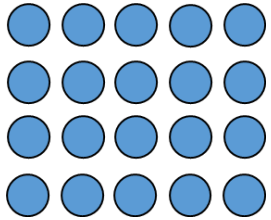
Skill	Step	Representations and models	
Recall and use multiplication and division facts for the7-times table	4	Hundred square Number shapes	Bead strings Number lines
Recall and use multiplication and division facts for the9-times table	4	Hundred square Number shapes	Bead strings Number lines
Recall and use multiplication and division facts for the11-times table	4	Hundred square Base 10	Place value counters Number lines

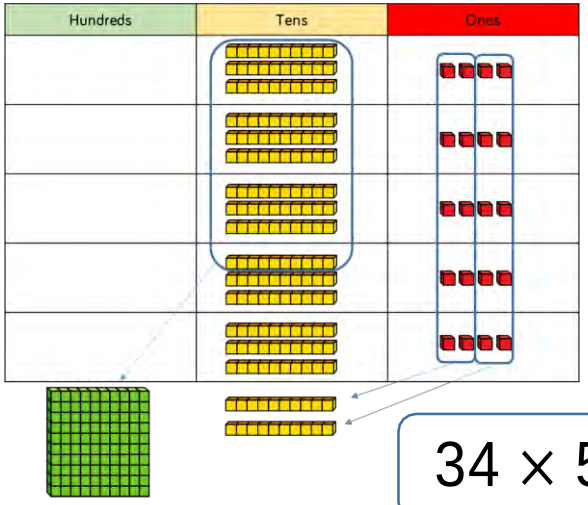
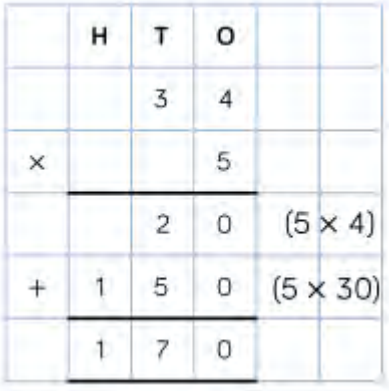
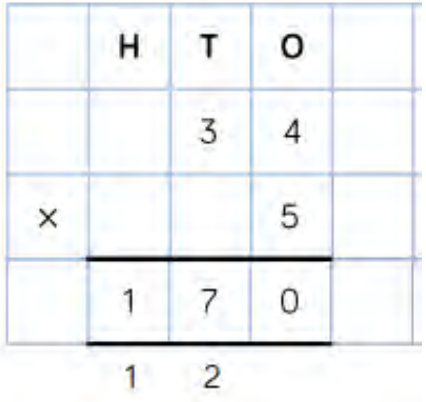
Recall and use multiplication and division facts for the12-times table	4	Hundred square Base 10	Place value counters Number lines

Skill: Times tabls	Step: 2
       	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 two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones. Use different models to develop fluency.

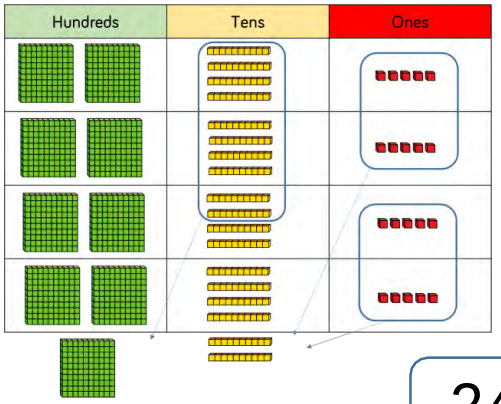
Skill	Step	Representations and models
Solve one-step problems with multiplication	1/2	Bar model Number shapes Counters Ten frames Bead strings Number lines
Multiply 2-digit by 1-digit numbers	3/4	Place value counters Base 10 Expanded written method Short written method
Multiply 3-digit by 1-digit numbers	4	Place value counters Base 10 Short written method
Multiply 4-digit by 1-digit numbers	5	Place value counters Short written method

Skill	Step	Representations and models	
Multiply 2-digit by 2-digit numbers	5	Place value counters Base 10	Short written method Grid method
Multiply 2-digit by 3-digit numbers	5	Place value counters	Short written method Grid method
Multiply 2-digit by 4-digit numbers	5/6	Formal written method	

Skill: Solve 1-step problems using multiplication	Step: 1/2
   One bag holds 5 apples. How many apples do 4 bags hold?    $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$	Children represent multiplication as repeated addition in many different ways. In Step 1, children use concrete and pictorial representations to solve problems. They are not expected to record multiplication formally. In Step 2, children are introduced to the multiplication symbol.

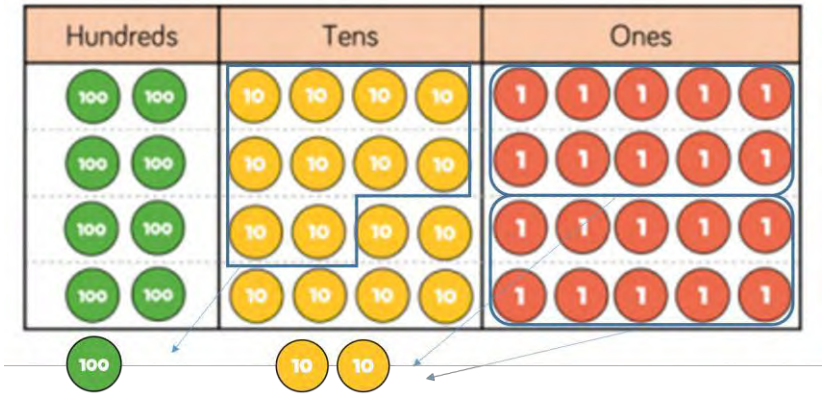
Skill: Multiply 2-digit numbers by 1-digit numbers	Step: 3/4
  34 × 5 = 170  	Informal methods and the expanded method are used in Step 3 before movingon to the short multiplication methodin Step 4. Place value countersshould be used to support the understanding of themethod rather than supporting the multiplication, as children should use times table knowledge.

Skill: Multiply 3-digit numbers by 1-digit numbers	Step: 4



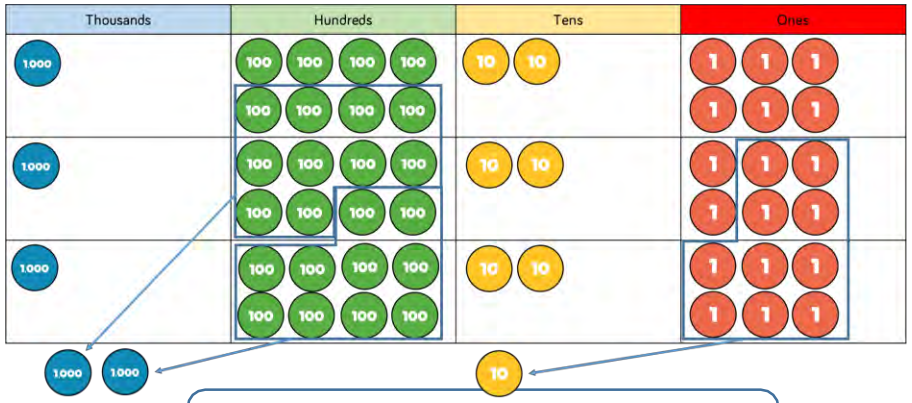
	H	T	O
	2	4	5
×			4
	9	8	0
	1	2	

$$245 \times 4 = 980$$



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.

Skill: Multiply 4-digit numbers by 1-digit numbers	Step: 5



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

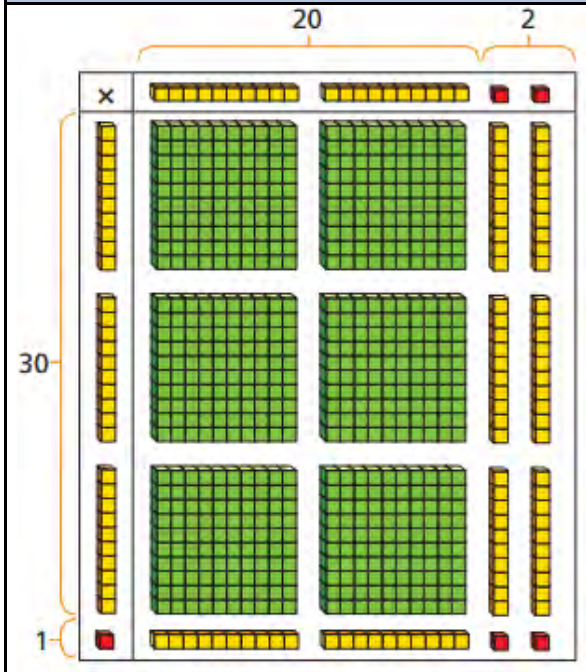
	Th	H	T	O
	1	8	2	6
×				3
	5	4	7	8
	2		1	

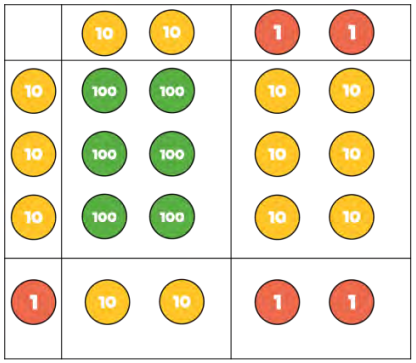
When multiplying 4-digit numbers, place value counters are the best manipulative to use to support children in their understanding of the formal written method.

If children are multiplying larger numbers and struggling with their times tables, encourage the use of multiplication grids so children can focus on the use of the written method.

Skill: Multiply 2-digit numbers by 2-digit numbers

Step: 5





x	20	2
30	600	60
1	20	2

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

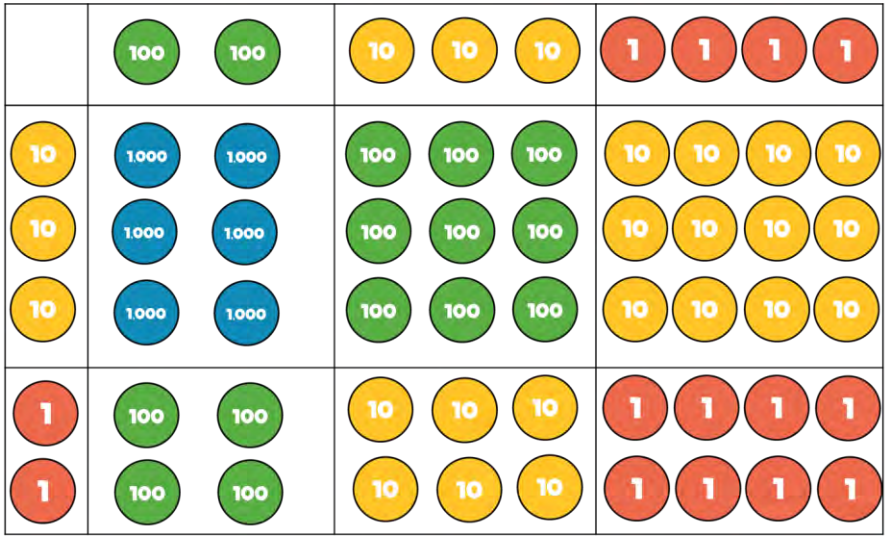
$22 \times 31 = 682$

When multiplying a multi-digit number by2-digits, use the area model to help children understand the size of the numbers they are using. This links to finding the area of a rectangle by finding the space covered by the Base 10.

The grid method matches the area model as an initial written method before moving on to the formal written multiplication method.

Skill: Multiply 3-digit numbers by 2-digit numbers

Step: 5



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

234 × 32 = 7,488

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

Children can continueto use the area modelwhen multiplying 3- digits by 2-digits.
Place value counters become more efficient to use but Base 10 can be used to highlight the size of numbers.

Children should nowmove towards the formal written method, seeing the links with the grid method.

Skill: Multiply 4-digit numbers by 2-digit numbers

Step: 5/6

TTh	Th	H	T	O
	2	7	3	9
×			2	8
$^{2}2$	$^{5}1$	$^{3}9$	$^{7}1$	2
$^{1}5$	4	$^{1}7$	8	0
7	6	6	9	2

1

2,739 × 28 = 76,692

When multiplying 4-digits by 2-digits, children should be confident in using the formal written method.

If they are still struggling with times tables, provide multiplication grids to support when they are focusing on the use of the method.

Consider where exchanged digits are placed and make sure this is consistent.

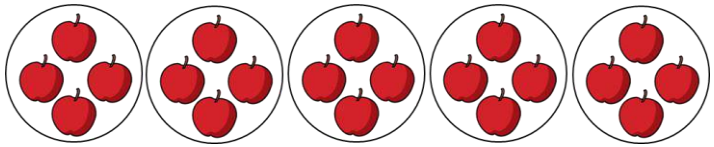
Skill	Step	Representations and models	
Solve one-step problems with division(sharing)	1/2	Bar model Real life objects	Arrays Counters
Solve one-step problems with division(grouping)	1/2	Real life objects Number shapesBead strings Ten frames	Number linesArrays Counters
Divide 2-digits by 1-digit (no exchange sharing)	3	Straw Base 10 Bar model	Place value counters Part-whole model
Divide 2-digits by 1-digit (sharing with exchange)	3	Straw Base 10 Bar model	Place value counters Part-whole model

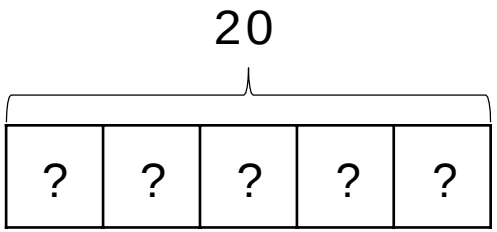
Skill	Step	Representations and models	
Divide 2-digits by 1-digit (sharing with remainders)	3/4	Straw Base 10 Bar model	Place value counters Part-whole model
Divide 2-digits by 1-digit (grouping)	4/5	Place value counters Counters	Place value grid Written short division
Divide 3-digits by 1-digit (sharing with exchange)	4	Base 10 Bar model	Place value countersPart-whole model
Divide 3-digits by 1-digit (grouping)	4/5	Place value counters Counters	Place value grid Written short division

Skill	Step	Representations and models	
Divide 4-digits by 1-digit (grouping)	5	Place value counters Counters	Place value grid Written short division
Divide multi-digits by2-digits (short division)	6	Written short division	List of multiples
Divide multi-digits by 2-digits (long division)	6	Written long division	List of multiples

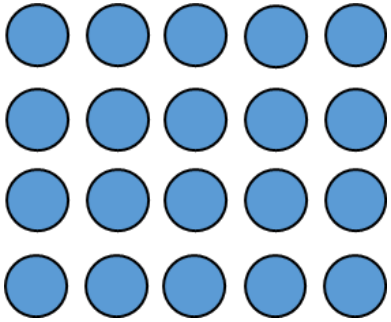
Skill: Solve 1-step problems using multiplication (sharing)

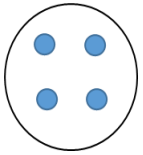
Step: 1/2





There are 20 apples altogether.
They are shared equally between 5 bags.
How many apples are in each bag?



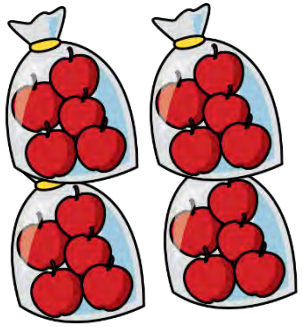
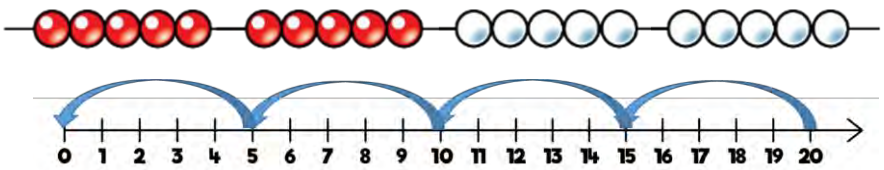
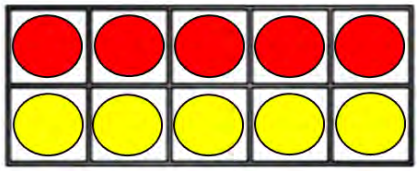
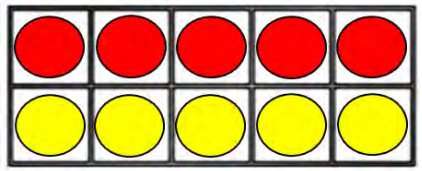
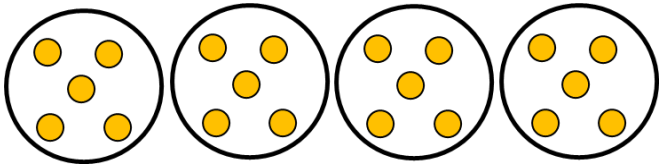
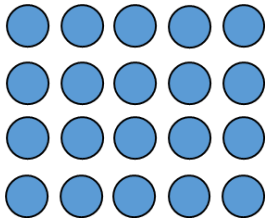


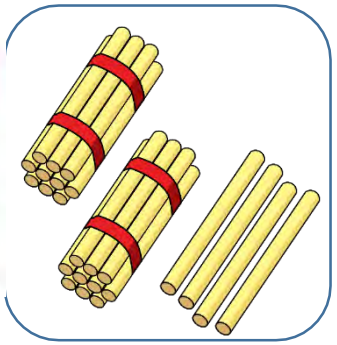
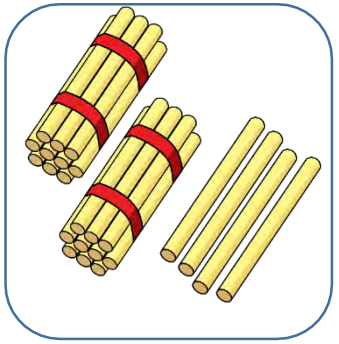
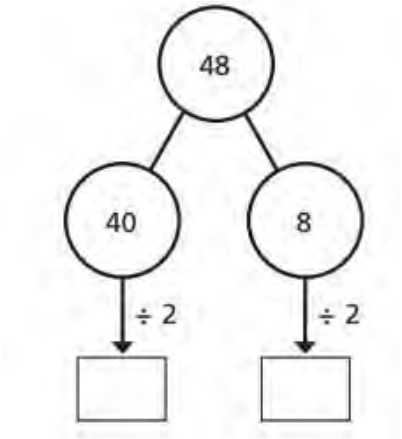
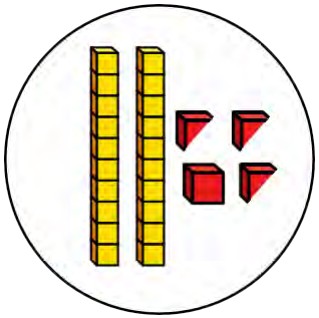
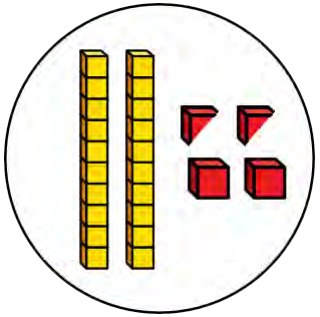
$20 \div 5 = 4$

Children solve problems by sharing amounts into equal groups.

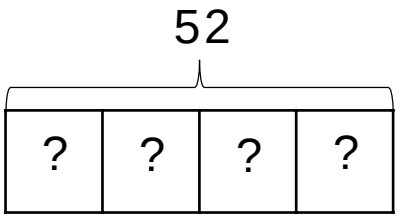
In Step 1, children use concrete and pictorial representations to solve problems. They are not expected to record division formally.

In Step 2, children are introduced to the division symbol.

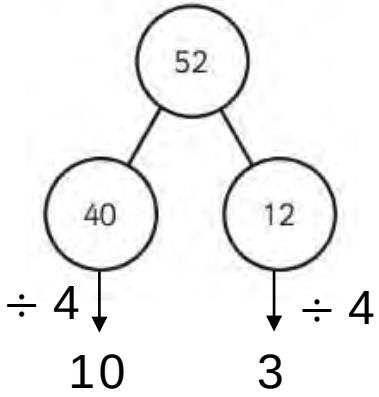
Skill: Solve 1-step problems using division (grouping)	Step: 1/2
   There are 20 apples altogether. They are put in bags of 5. How many bags are there?     $20 \div 5 = 4$	Children solve problems by grouping and counting the number of groups. Grouping encourages children to count in multiples and links to repeated subtraction on a number line. They can use concrete representations in fixed groups such as number shapes which helps to show the link between multiplication and division.

Skill: Divide 2-digits by 1-digit (sharing with no exchange)	Step: 3
    $48 \div 2 = 24$  	When dividing larger numbers, children can use manipulatives that allow them to partition into tens and ones. Straws, Base 10 and place value counters can all be used to share numbers into equal groups. Part-whole models can provide children with a clear written method that matches the concrete representation.

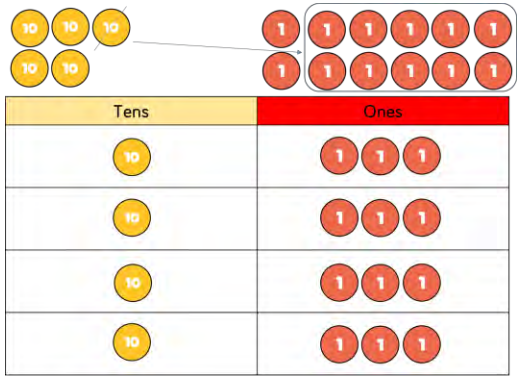
Skill: Divide 2-digits by 1-digit (sharing with exchange)



$$52 \div 4 = 13$$



10 + 3 = 13



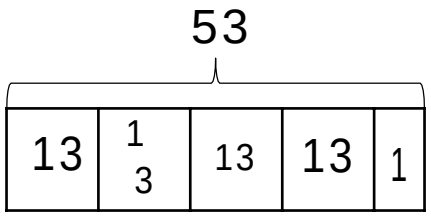
Step: 3/4

When dividing numbers involving an exchange, children can use Base 10 and place value counters to exchange one ten for ten ones.
Children should start with the equipment outside the place value grid before sharing the tens and ones equally between the rows.

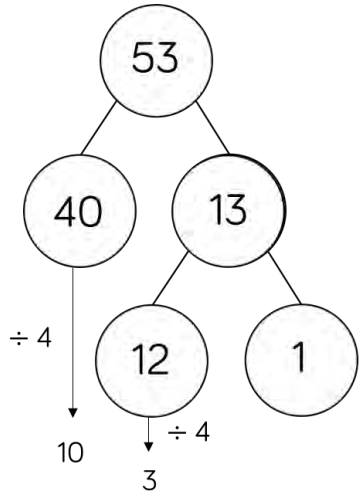
Flexible partitioning in a part-whole model supports this method.

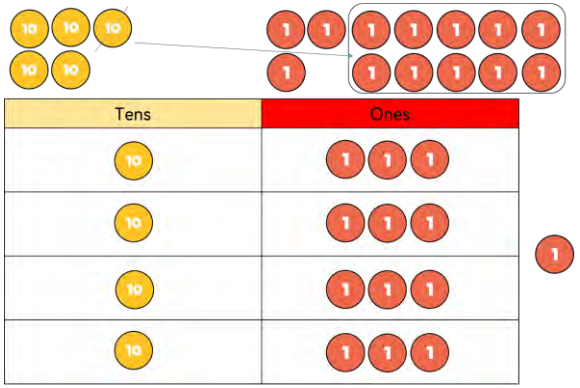
Skill: Divide 2-digits by 1-digit (sharing with remainders)

Step: 3/4



53 ÷ 4 = 13 r1





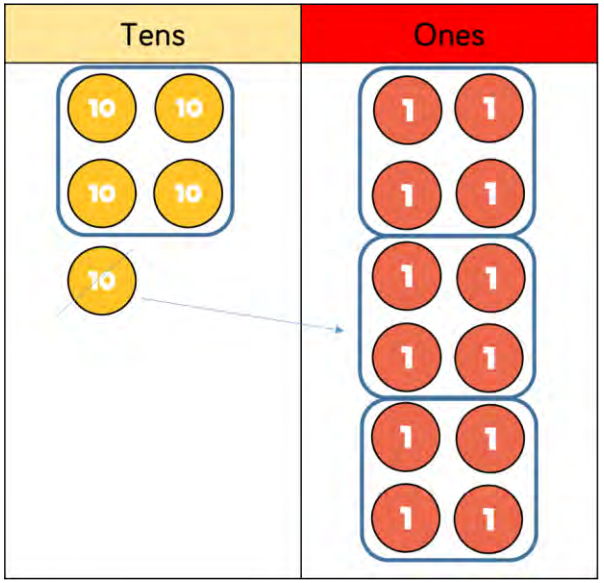
When dividing numbers with remainders, children can use Base 10 and place value counters to exchange one ten for ten ones.

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.

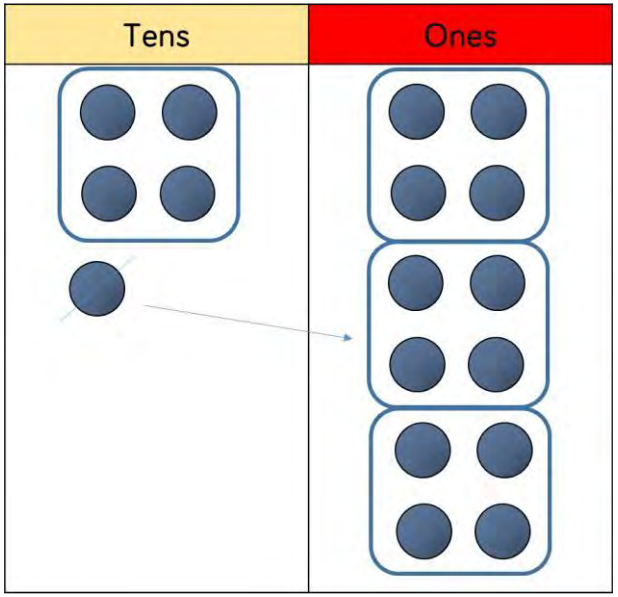
Skill: Divide 2-digits by 1-digit (grouping)

Step: 5



		1	3	
	4	5	1 2	

$52 \div 4 = 13$



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

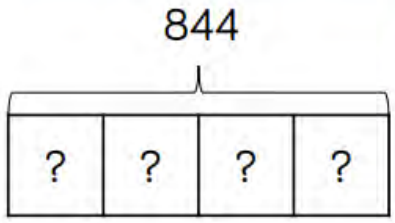
Language is important here. Children should consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?'

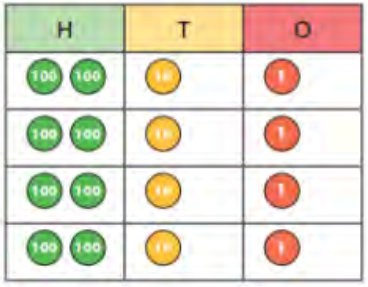
Remainders can also be seen as they are left ungrouped.

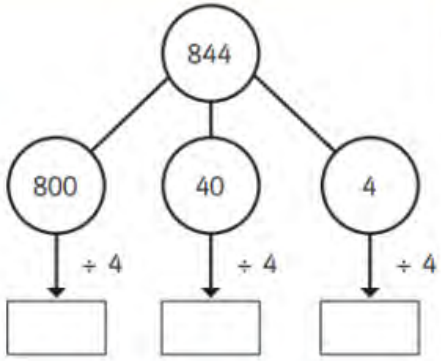
Skill: Divide 3-digits by 1-digit (sharing)

Step 4

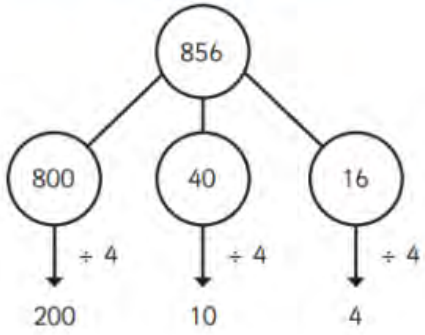
844 ÷ 4 = 211

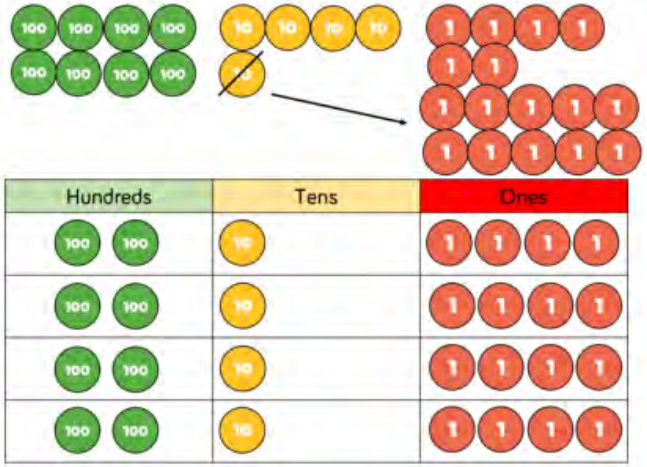






856 ÷ 4 = 214

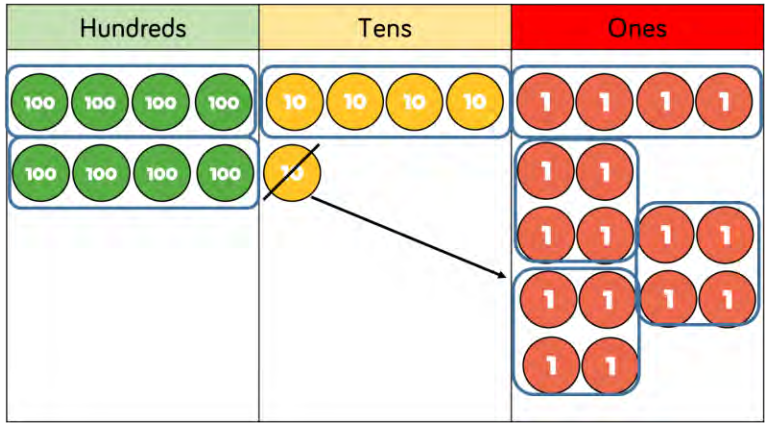




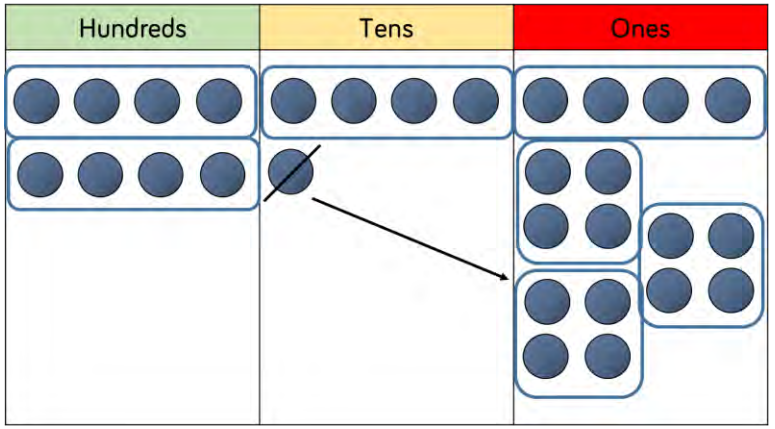
Children can continue to use place value counters to share 3-digit numbers into equal groups.
Children should start with the equipment outside the place value grid before sharing the hundreds, tens and ones equally between the rows.
This method can also help to highlight remainders.
Flexible partitioning in a part-whole model supports this method.

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

Step: 5



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

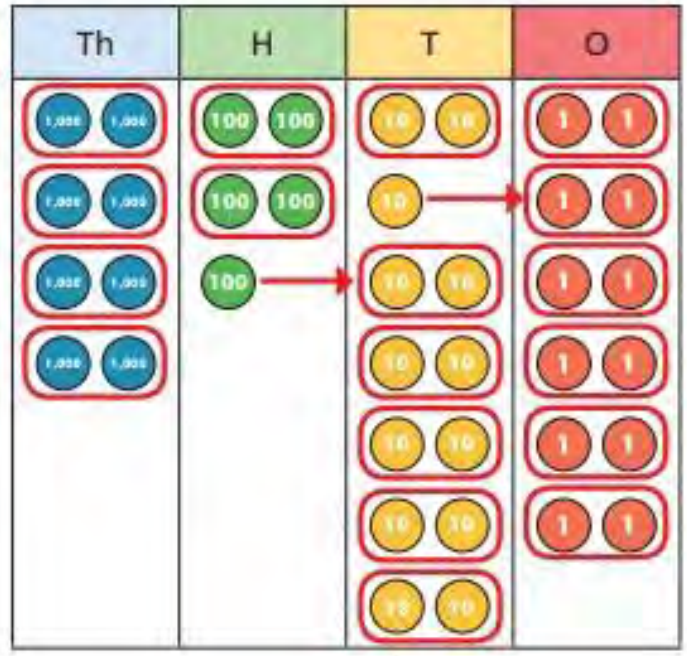


856 ÷ 4 = 214

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

Place value countersor plain counters canbe used on a place value grid to supportthis understanding.

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

Skill: Divide 4-digits by 1-digit (grouping)	Step: 5
 8,532 ÷ 2 = 4,266	Place value counters or plain counters can be used on a place value grid to support children to divide 4-digits by 1-digit. Children can also draw their own counters and group them through a more pictorial method. Children should be encouraged to move away from the concrete and pictorial when dividing numbers with multiple exchanges.

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

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

Step: 6

		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 children begin to divide up to 4-digits by 2-digits, written methods become the most accurate as concrete and pictorial representations become less effective. Children can write out multiples to support their calculations with larger remainders. Children will also solve problems with remainders where the quotient can be rounded as appropriate.

Skill: Divide multi-digits by 2-digits (long division)	Step: 6

		0	3	6	
1	2	4	3	2	
	–	3	6	0	(×30)
			7	2	
	–		7	2	(×6)
				0	

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

$432 \div 12 = 36$

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

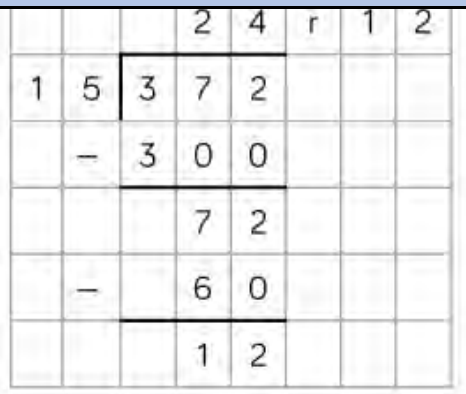
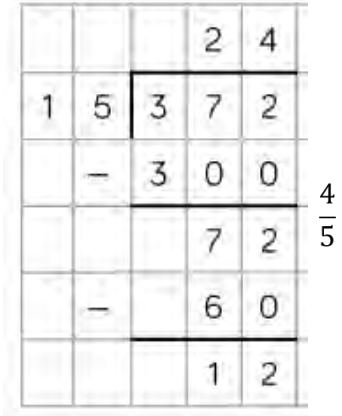
	0	4	8	9	
15	7	3	3	5	
–	6	0	0	0	(×400
	1	3	3	5	
–	1	2	0	0	(×80)
		1	3	5	
–		1	3	5	(×9)
				0	

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

Children can also divide by 2-digit numbers using long division.

Children can write out multiples to support their calculations with larger remainders.

Children will also solve problems with remainders where the quotient can be rounded as appropriate.

Skill: Divide multi digits by 2-digits (long division)	Step: 6
$372 \div 15 = 24$ r12  $1 \times 15 = 15$ $2 \times 15 = 30$ $3 \times 15 = 45$ $4 \times 15 = 60$ $5 \times 15 = 75$ $10 \times 15 = 150$  $\frac{4}{5}$ $372 \div 15 = 24\frac{4}{5}$	When a remainder is left at the end of a calculation, children can either leave it as aremainder or convert it to a fraction. This will depend on the context of the question. Children can also answer questions where the quotient needs to be rounded according to the

	context.