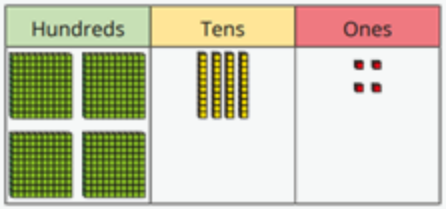
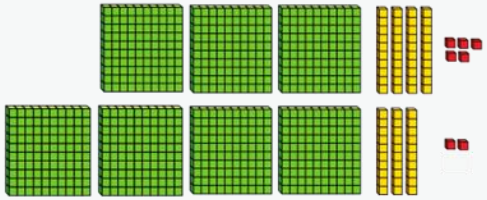
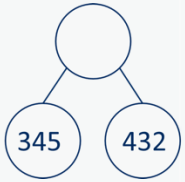
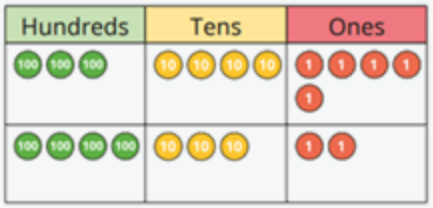
Addition

Year 3	• Add numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. • Add numbers with up to three digits, using formal written methods of columnar addition. • Add fractions with the same denominator within 1 whole. • Calculate the time taken by particular events or tasks.	
Progression of skills	**Key representations**	
Add 1s, 10s or 100s to a 3-digit number Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.	The ones/tens/hundreds column will increase by …  444 + 5 = 444 + 50 = 444 + 500 = 777 + 2 = 777 + 20 = 777 + 200 =	What patterns do you notice? 235 + 3 = 235 + 30 = 235 + 300 = 604 + 20 = 604 + 50 = 604 + 90 = 111 + ☐ = 118 111 + ☐ = 181 111 + ☐ = 811
Add two numbers (no exchange) Mental strategies and introduction of formal written method.	… ones + … ones = … ones … tens + … tens = … tens … hundreds + … hundreds = … hundreds    	

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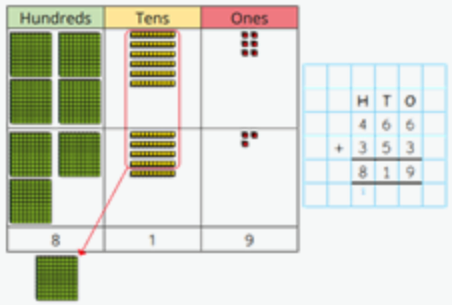
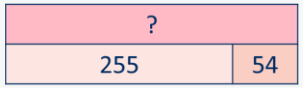
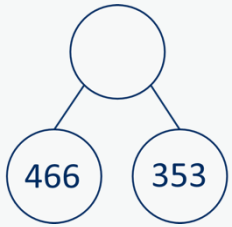
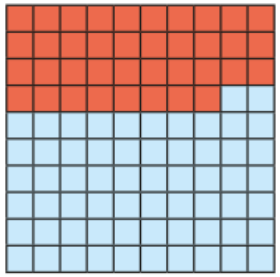
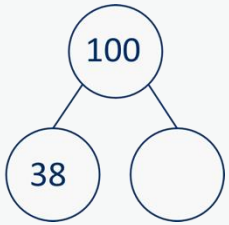
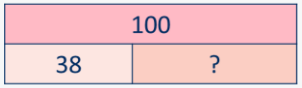
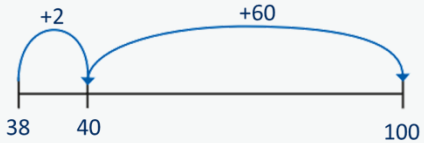
Addition

Progression of skills	Key representations
Add two numbers across a 10 or 100 Formal written method involving up to 2 exchanges including 3-digit plus 2-digit numbers.	There are … ones, so I do/do not need to make an exchange. There are … tens, so I do/do not need to make an exchange. … ones = … ten and … ones. … tens = … hundred and … tens.   
Complements to 100 Pairs of numbers which total 100	… plus … is equal to 100    I add … to get to the next 10, then … to get to 100  $38 + 62 = 100$ $62 + 38 = 100$ $100 = 38 + 62$ $100 = 62 + 38$

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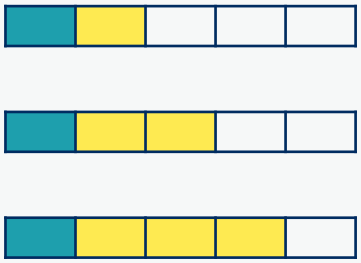
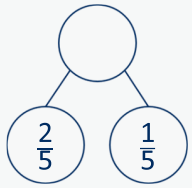
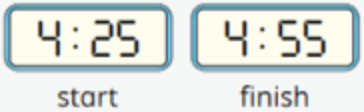
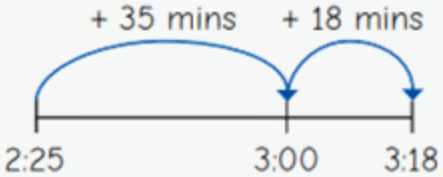
Addition

Progression of skills	Key representations
Add fractions with the same denominator within 1 whole Make links with known facts.	When adding fractions with the same denominator, I only add the numerator. … fifths + … fifths = … fifths  $\frac{1}{5} + \frac{1}{5}$ $\frac{1}{5} + \frac{2}{5}$ $\frac{1}{5} + \frac{3}{5}$ 
Calculate the duration of events Find durations of time between a given start and end point. Children will need to calculate complements to 60	From … to … o'clock is … minutes. From … o'clock to … is … minutes. The total time taken is … minutes.  

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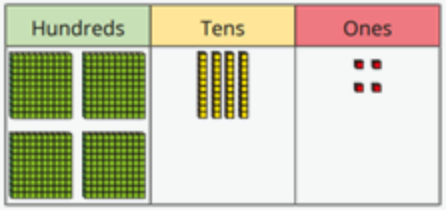
Subtraction

Year 3	• Subtract numbers mentally, including: a three-digit number and ones, a three-digit number and tens, a three-digit number and hundreds. • Subtract numbers with up to three digits, using formal written methods. • Subtract fractions with the same denominator within 1 whole.
Progression of skills	**Key representations**

Subtract 1s, 10s and 100s from a 3-digit number

Emphasis on mental strategies including number bonds and related facts. Prompt children to notice which digit changes.

The ones/tens/hundreds column will decrease by …



444 – 2 =
444 – 20 =
444 – 200 =

777 – 4 =
777 – 40 =
777 – 400 =

What patterns do you notice?

235 – 3 =
235 – 30 =
235 – 300 =

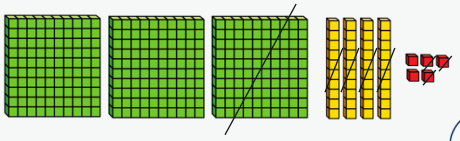
624 – 20 =
654 – 50 =
694 – 90 =

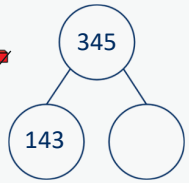
118 – ☐ = 111
181 – ☐ = 111
811 – ☐ = 111

Subtract two numbers (no exchange)

Mental strategies and introduction of formal written method.

… ones – … ones = … ones
… tens – … tens = … tens
… hundreds – … hundreds = … hundreds





769	
147	?

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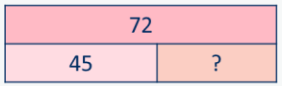
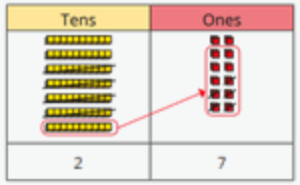
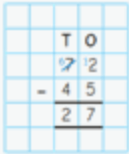
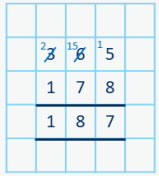
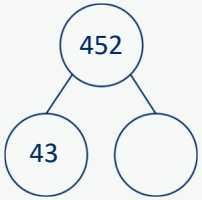
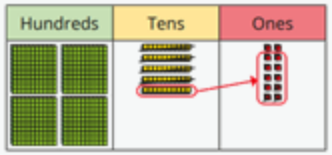
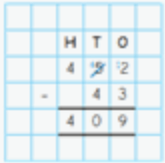
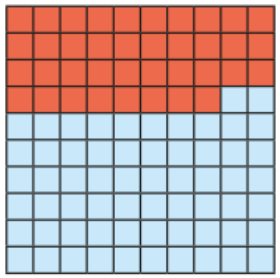
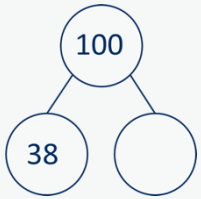
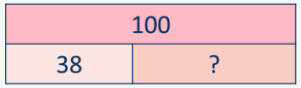
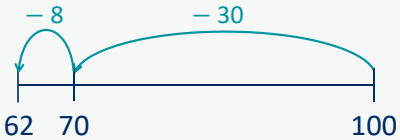
Subtraction

Progression of skills	Key representations	
Subtract two numbers across a 10 or 100 Formal written method involving up to 2 exchanges including 3-digit subtract 2-digit numbers.	I need to subtract … ones. I do/do not need to make an exchange. I need to subtract … tens. I do/do not need to make an exchange. I can exchange 1 … for 10 …        	
Complements to 100 Focus on subtraction facts. Encourage children to notice patterns.	100 minus … is equal to …    	I subtract … tens, then I subtract … ones. $100 - 38 = 62$ $100 - 62 = 38$ $62 = 100 - 38$ $38 = 100 - 62$ 

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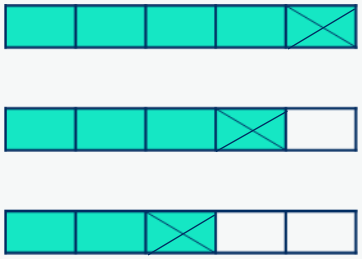
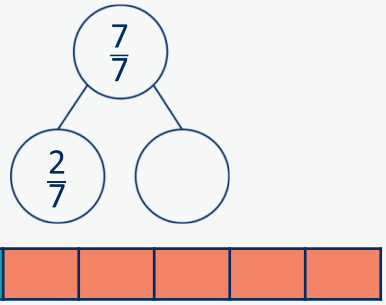
Subtraction

Progression of skills	Key representations
Subtract fractions with the same denominator within 1 whole Make links with known facts.	When subtracting fractions with the same denominator, I only subtract the numerator. … fifths − … fifths = … fifths  $\frac{5}{5} - \frac{1}{5}$ $\frac{4}{5} - \frac{1}{5}$ $\frac{3}{5} - \frac{1}{5}$ 

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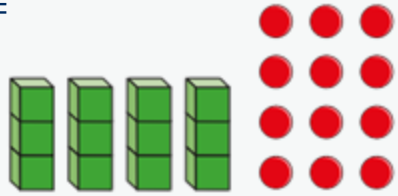
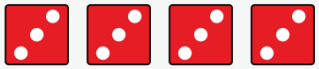
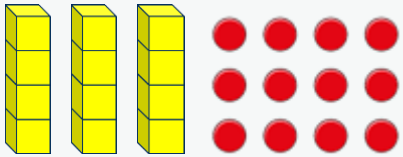
Multiplication

Year 3	• Recall and use multiplication facts for the 3, 4 and 8 multiplication tables. • Write and calculate mathematical statements for multiplication using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. • Solve problems, including missing number problems, involving multiplication, including positive integer scaling problems and correspondence problems in which n objects are connected to m objects.	
Progression of skills	**Key representations**	
The 3 times-table Encourage daily counting in multiples both forwards and back.	… groups of 3 = … × 3 = 3, … times = 3 × … =   3 3 3 3	… times 3 is equal to … 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 4 × 3 = 12 12 = 4 × 3 0 3 6 9 12 15 18 21 24 27 30 33 36
The 4 times-table Encourage daily counting in multiples both forwards and back. Encourage children to notice links between the 2 and 4 times-tables.	… groups of 4 = … × 4 = 4, … times = 4 × … =  4 4 4	… times 4 is equal to … 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 3 × 4 = 12 12 = 3 × 4 0 4 8 12 16 20 24 28 32 36 40 44 48

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Multiplication

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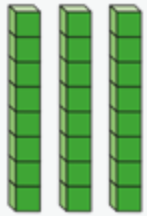
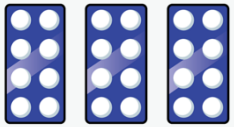
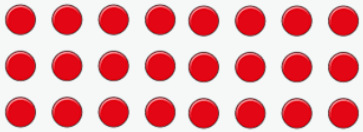
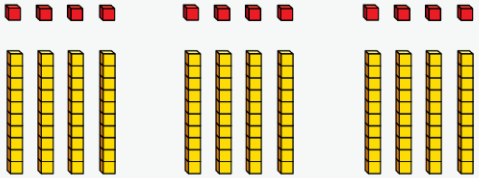
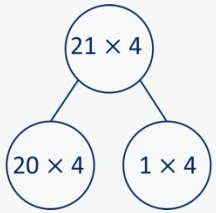
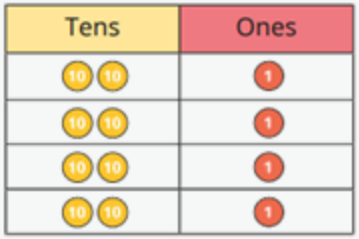
Progression of skills	Key representations
The 8 times-table Encourage daily counting in multiples both forwards and back. Encourage children to notice links between the 2, 4 and 8 times-tables.	… lots of 8 = × 8 = 8, … times = 8 × … =    … times 8 is equal to … 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 3 × 8 = 24 24 = 3 × 8 0 8 16 24 32 40 48 56 64 72 80 88 96
Related facts Use knowledge of multiplying by 10 to scale times-table facts.	… × … ones is equal to … ones so … × … tens is equal to … tens.  3 × 4 = 12 3 × 40 = 120
Multiply a 2-digit number by a 1-digit number - no exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.	… tens multiplied by … is equal to … tens. …ones multiplied by … is equal to … ones. 30 × 2 = 60 2 × 2 = 4 32 × 2 = 64  

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Multiplication

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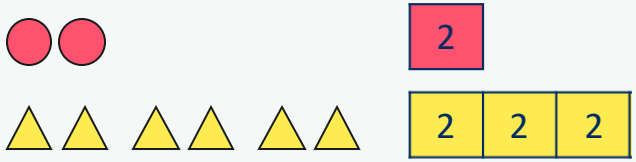
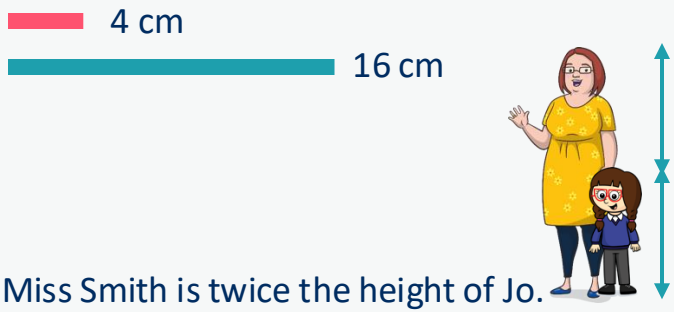
Progression of skills	Key representations	
Multiply a 2-digit number by a 1-digit number - with exchange Children apply their understanding of partitioning to represent and solve calculations using the expanded method.	… tens multiplied by … is equal to … tens. … ones multiplied by … is equal to … ones. $20 \times 4 = 80$ $4 \times 4 = 16$ $24 \times 4 = 96$	
Scaling Children focus on multiplication as scaling (…. times the size) as opposed to repeated addition.	There are …. times as many … as …  There are 3 times as many triangles as circles.	… is … times the size of … … is … times the length/height of …  Miss Smith is twice the height of Jo.

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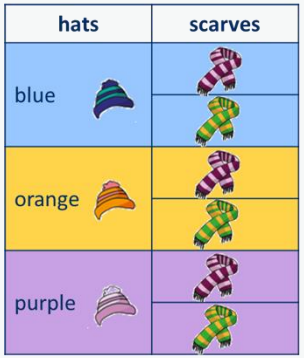
Multiplication

Progression of skills	Key representations
Correspondence problems (How many ways?) Encourage children to work systematically to find all the different possible combinations.	For every … , there are … possible … There are … × … possibilities altogether.  For every hat, there are two possible scarves. $3 \times 2 = 6$ There are 6 possibilities altogether.

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Division

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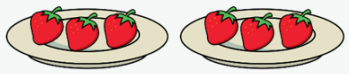
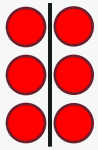
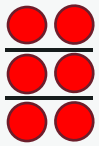
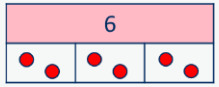
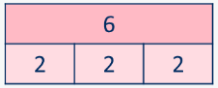
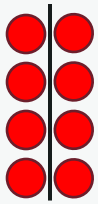
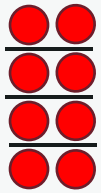
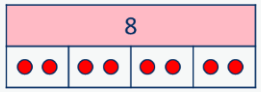
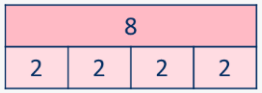
Year 3	• Recall and use division facts for the 3, 4 and 8 multiplication tables. • Write and calculate mathematical statements for division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods. • Recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators.	
Progression of skills	**Key representations**	
Divide by 3 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are … groups of 3 in … … ÷ 3 =  2 × 3 = 6 6 ÷ 3 = 2  	… has been shared equally into 3 equal groups. … ÷ 3 = 2 × 3 = 6 6 ÷ 3 = 2   
Divide by 4 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are … groups of 4 in … … ÷ 4 = 2 × 4 = 8 8 ÷ 4 = 2  	… has been shared equally into 4 equal groups. … ÷ 4 = 2 × 4 = 8 8 ÷ 4 = 2   

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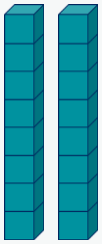
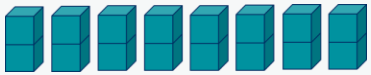
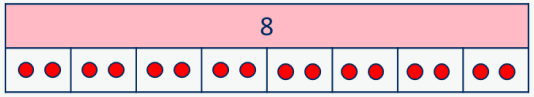
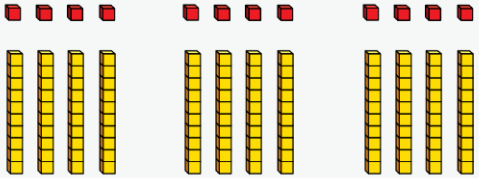
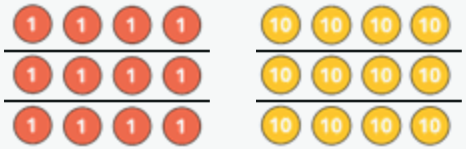
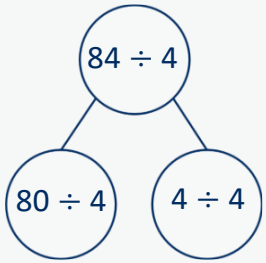
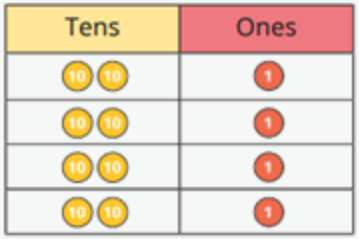
Division

Progression of skills	Key representations	
Divide by 8 Encourage children to compare the grouping and sharing structures of division and to make links with times-table facts.	There are … groups of 8 in … … ÷ 8 =  2 × 8 = 16 16 ÷ 8 = 2 	… has been shared equally into 8 equal groups. … ÷ 8 =   2 × 8 = 16 16 ÷ 8 = 2
Related facts Link to known times-table facts.	… ÷ … is equal to …, so … tens ÷ … is equal to … tens.   12 ÷ 3 = 4 120 ÷ 3 = 40	
Divide a 2-digit number by a 1-digit number - no exchange Partition into tens and ones to divide and then recombine.	… tens divided by … is equal to … tens. … ones divided by … is equal to … ones. 60 ÷ 2 = 30 4 ÷ 2 = 2 64 ÷ 2 = 32  	

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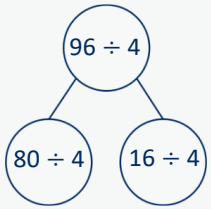
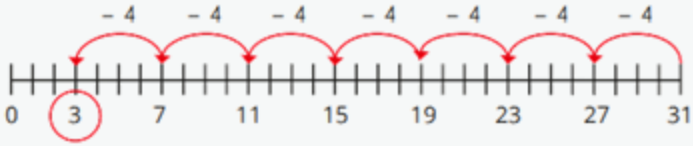
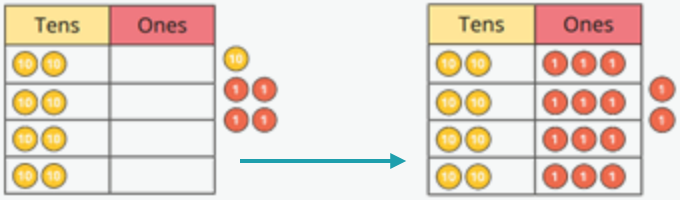
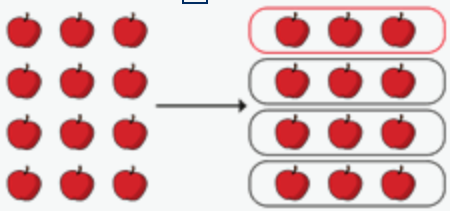
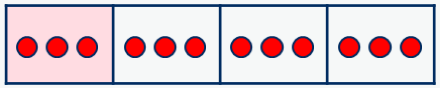
Division

Progression of skills	Key representations	
Divide a 2-digit number by a 1-digit number - with remainders Encourage children to partition numbers flexibly to help them to divide more efficiently.	… tens divided by … is equal to … tens. … ones divided by … is equal to … ones.  80 ÷ 4 = 20 16 ÷ 4 = 4 96 ÷ 4 = 24	There are … groups of … There are … remaining. 31 ÷ 4 = 7 r3  94 ÷ 4 = 23 r2 
Unit fractions of a set of objects Bar models are useful to show the link between division and fractions, for example, dividing by 3 and finding a third.	The whole is divided into … equal parts. Each part is $\frac{1}{\square}$ of the whole.  $\frac{1}{4}$ of 12 apples is 3 apples.	One … of … is … $\frac{1}{4}$ of 12 is 3  $\frac{1}{3}$ of 36 is 12

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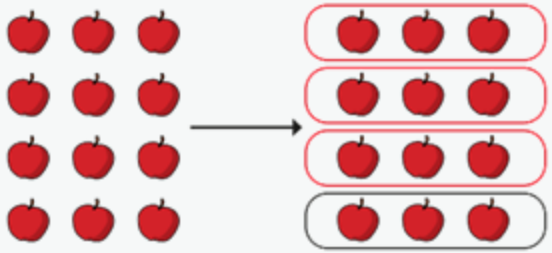
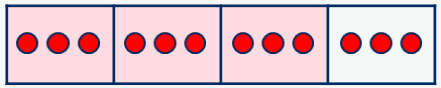
Division

Progression of skills	Key representations	
Non-unit fractions of a set of objects Bar models are a useful representation and show the links with division and multiplication.	The whole is divided into … equal parts. Each part is $\frac{1}{\square}$ of the whole.  $\frac{3}{4}$ of 12 apples is 9 apples.	$\frac{1}{\square}$ of … is …, so $\frac{\square}{\square}$ of … is … $\frac{3}{4}$ of 12 is 9  $\frac{2}{3}$ of 36 is 24