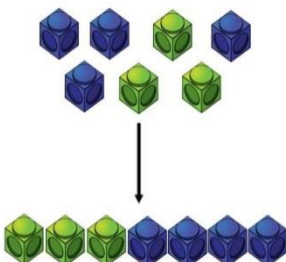
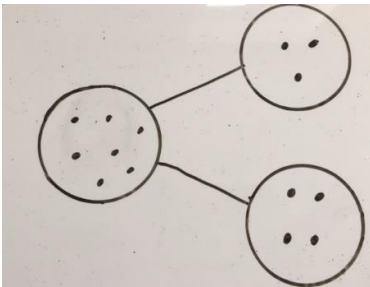
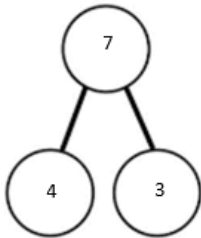
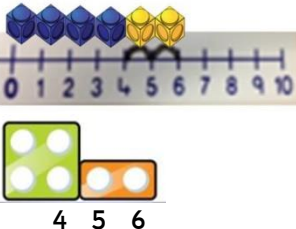
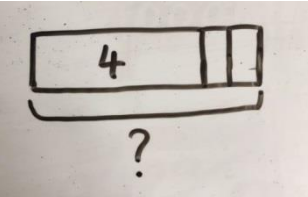

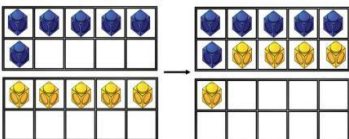
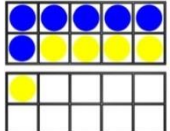


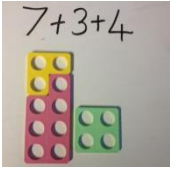
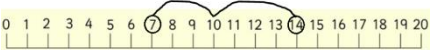
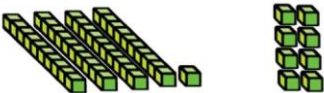
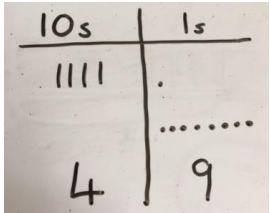
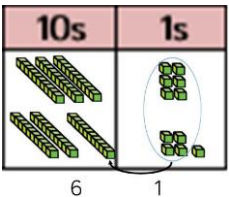
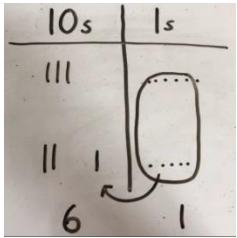
Calculation policy: Guidance

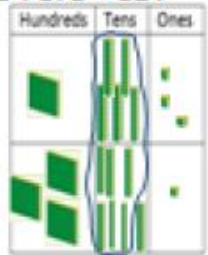
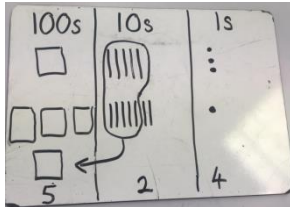
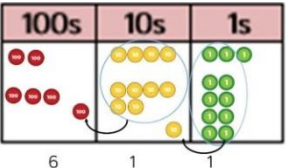
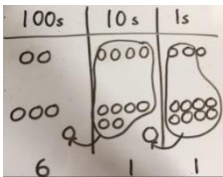
See PA planning document for WAGBA's and a more detailed breakdown of calculation progression.

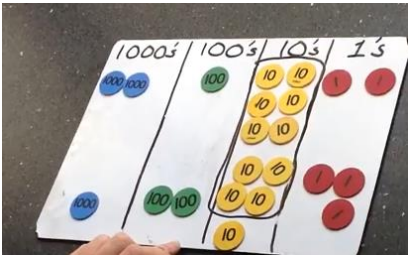
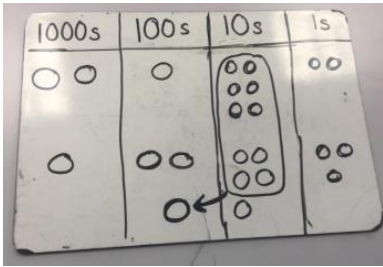
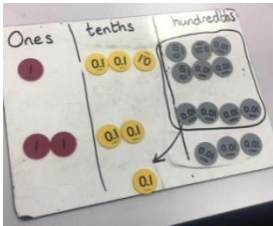
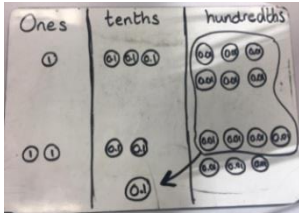
Addition

Key language: sum, total, parts and wholes, plus, add, altogether, more, 'is equal to', 'is the same as' and regrouping.

EYFS / Year 1	Progression	Concrete	Pictorial	Abstract
	1.1 Combining two parts to make a whole. https://www.youtube.com/watch?v=5DgHrfUPVfg		$4 + 3 = 7$ Four is a part, 3 is a part and the whole is seven. 	$4 + 3 = 7$ Four is a part, 3 is a part and the whole is seven. 
	1.2 Starting at the bigger number and counting on https://www.youtube.com/watch?v=BBQNVdXgMM	Counting on using number lines, cubes or Numicon. 	A bar model which encourages the children to count on, rather than count all. 	The abstract number line: $4 + 2 = 6$ 
	1.3 Regrouping to make 10 using ten frames or Numicon. https://www.youtube.com/watch?v=mWPgqkO6BTk	$6 + 5$ 	Children to draw the ten frame and counters/cubes. 	Children to develop an understanding of equality e.g. $6 + \square = 11$ $6 + 5 = 5 + \square$ $6 + 5 = \square + 4$

<p>2.1 Adding three single digits.</p> <p>https://www.youtube.com/watch?v=f_Gv07qomhE</p>	<p>Using Numicon or ten frames.</p> 	<p>Using pictures of ten frames or number line.</p> <p>$7 + 3 + 4$</p> 	<p>Use number bonds to make ten.</p> <p>$6 + 7 + 4 = 6 + 4 + 7 = 17$</p>
<p>2.2 Use dienes to add two numbers. (2 digit + 1 digit and 2 digit + 2 digit)</p> <p>https://www.youtube.com/watch?v=e0WrQKR_V_8</p>	<p>Continue to develop understanding of partitioning and place value.</p> <p>$41 + 8$</p> 	<p>Children to represent the dienes e.g. lines for tens and dot/crosses for ones.</p> 	<p>$41 + 8$</p> <p>Add the ones: $1 + 8 = 9$ Add the tens: $40 + 9 = 49$</p>
<p>2.3 Use dienes to add two numbers with regrouping. (2 digit + 1 digit and digit + 2 digit)</p> <p>https://www.youtube.com/watch?v=edfj5ac1xzQ</p>	<p>$36 + 25$ (regrouping in the ones)</p> 	<p>$36 + 25$</p> 	<p>Expanded method: $36 + 25$</p> <p>Add the ones: $6 + 5 = 11$ Add the tens: $30 + 20 = 50$ $50 + 11 = 61$</p>

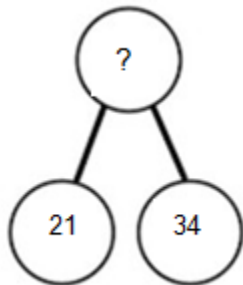
<p>3.1 Column method- regrouping (up to 3 digits). Using dienes.</p> <p>https://www.youtube.com/watch?v=7qOQm17tP5w</p>	<p>$153 + 371 = 524$</p> 	<p>$153 + 371 = 524$</p> 	<p>Introduce formal method:</p> $\begin{array}{r} 153 \\ + 371 \\ \hline 524 \\ 1 \end{array}$
<p>3.2 Column method- regrouping (up to 3 digits). Using place value counters.</p> <p>https://www.youtube.com/watch?v=Uklrv3KIgo</p>	<p>$243 + 368 = 611$</p> 	<p>$243 + 368 = 611$</p> 	$\begin{array}{r} 243 \\ + 368 \\ \hline 611 \\ 1 \quad 1 \end{array}$

Year 4	<p>4.1 Column method- regrouping (up to 4 digits). Using place value counters.</p> <p>https://www.youtube.com/watch?v=I_nhABeknc</p>	<p>2162 + 1253</p> 	<p>2162 + 1253</p> 	$\begin{array}{r} 2162 \\ + 1253 \\ \hline 3515 \\ 1 \end{array}$
Year 5	<p>5.1 Column method- regrouping with more than 4 digits</p>	<p>See Year 4 if required.</p>	<p>See Year 4 if required.</p>	$\begin{array}{r} 1720\text{cm} \\ 750\text{cm} \\ + 1500\text{cm} \\ \hline 3970\text{cm} \\ 1 \end{array}$
	<p>5.2 Column method – decimals (up to 2 d.p.). Use place value counters.</p> <p>https://www.youtube.com/watch?v=vxK4rC26Gig</p>	<p>1.36 + 2.37</p> 	<p>1.36 + 2.37</p> 	$\begin{array}{r} £1.36 \\ + £2.37 \\ \hline £3.73 \\ 1 \end{array}$
Year 6	<p>6. 1 Column method- regrouping with more than 4 digits</p>	<p>See Year 4 if required.</p>	<p>See Year 4 if required.</p>	$\begin{array}{r} 1720\text{cm} \\ 750\text{cm} \\ + 1500\text{cm} \\ \hline 3970\text{cm} \\ 1 \end{array}$
	<p>6.2 Column method – decimals (up to 2 d.p.). Use place value counters.</p>	<p>See Year 5 if required.</p>	<p>See Year 5 if required.</p>	$\begin{array}{r} £1.36 \\ + £2.37 \\ \hline £3.73 \\ 1 \end{array}$

Conceptual variation; different ways to ask children to solve $21 + 34$

Visual representations:

Part-part-whole diagrams and bar models.



?	
21	34

Word problems:

In year 3, there are 21 children and in year 4, there are 34 children. How many children in total?

Calculate the sum of twenty-one and thirty-four.

Different forms of equations:

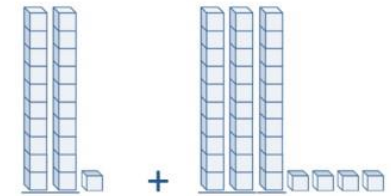
$$\begin{array}{r} 21 \\ +34 \\ \hline \end{array}$$

$$21 + 34 =$$

$$\boxed{} = 21 + 34$$

$$21 + 34 = 55. \text{ Prove it}$$

Concrete representations:



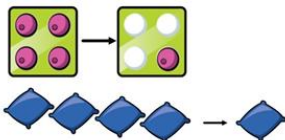
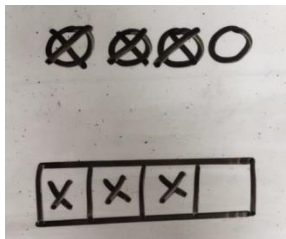
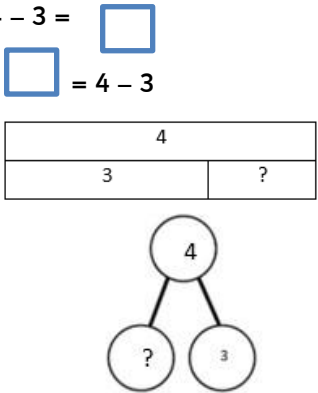

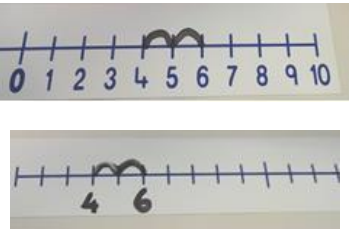
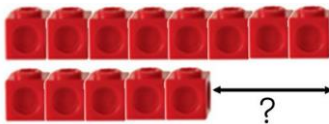
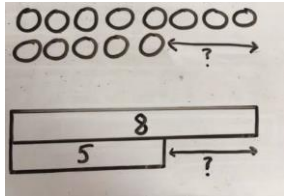
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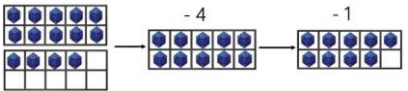
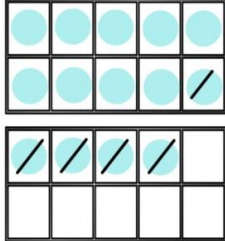

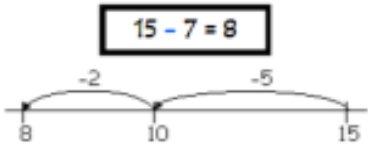
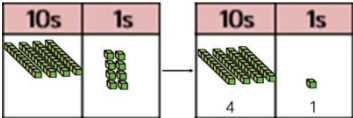
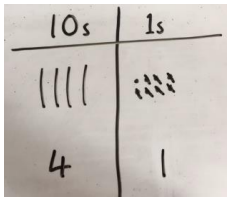
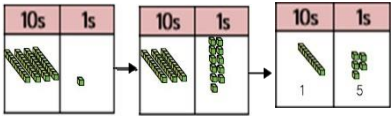
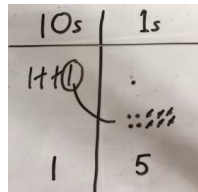
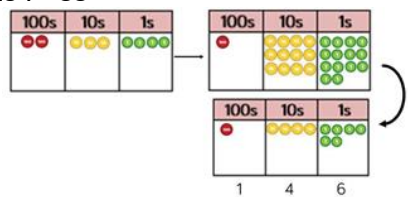
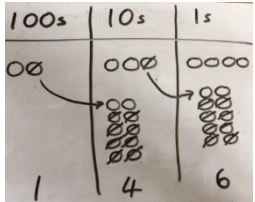
10s	1s
10 10	1
10 10 10	?
?	5

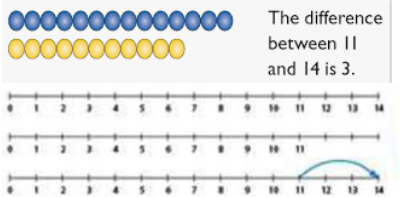
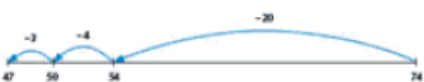
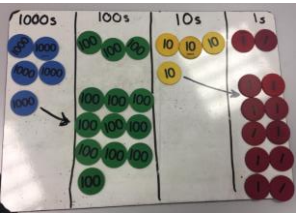
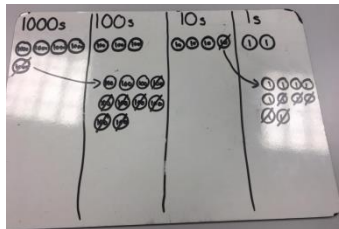
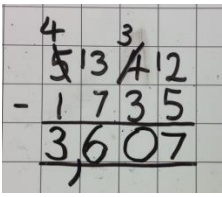
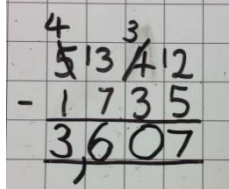
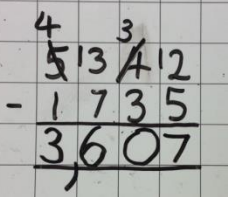
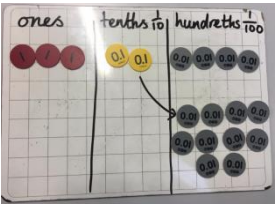
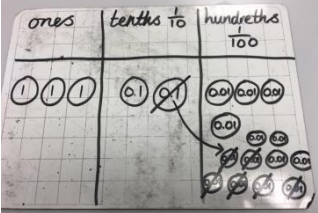
Subtraction

Key language: take away, less than, difference, subtract, minus, fewer, decrease.



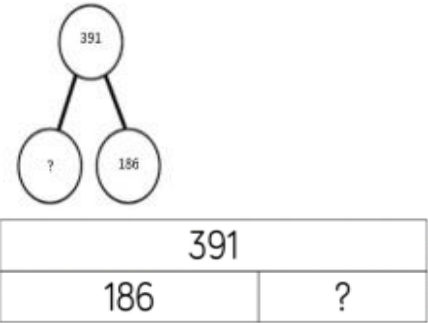

Progression	Concrete	Pictorial	Abstract
<p>1.4 Taking away ones from a whole.</p> <p>https://www.youtube.com/watch?v=iByr97zAVmE</p>	<p>Physically taking away objects from a whole.</p> <p>$4 - 3 = 1$</p> 	<p>Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.</p> 	<p>$4 - 3 =$ <input type="text"/></p> <p><input type="text"/> = $4 - 3$</p> 
<p>1.5 Counting back using a number line.</p> <p>https://www.youtube.com/watch?v=jpkUWF3nnZ4</p>	<p>Counting back (using number lines or number tracks) children start with 6 and count back 2.</p> <p>$6 - 2 = 4$</p> 	<p>$6 - 2 = 4$</p> 	<p>$6 - 2 = 4$</p>
<p>1.6 Find the difference by counting on.</p> <p>https://www.youtube.com/watch?v=ditOPzgaNAo</p>	<p>Finding the difference (using cubes, Numicon or Cuisenaire rods).</p> <p>Find the difference between 8 and 5.</p> 	<p>Children to draw the concrete resources they have used or used a bar model to illustrate what they need to calculate.</p> 	<p>Find the difference between 8 and 5.</p> <p>$5 + 3 = 8$</p>

	<p>1.7 Make 10 using the ten frame</p> <p>https://www.youtube.com/watch?v=gEgyUQXbbKA</p>	<p>Making 10 using a ten frame. 14 - 5</p> 	<p>Children to present the ten frame pictorially and discuss what they did to make ten.</p> 	<p>Children to show how they can make ten by partitioning the smaller number.</p> $\begin{array}{r} 14 - 5 = 9 \\ \swarrow \quad \searrow \\ 4 \quad 1 \end{array}$ $14 - 4 = 10$ $10 - 1 = 9$
Year 2	<p>2.4 Counting back using a number line.</p> <p>https://www.youtube.com/watch?v=rGZGcw5Vc7Q</p>	<p>15 - 7</p> 		<p>15 - 7 = 8</p>
	<p>2.5 Use dienes to subtract numbers up to 2 digits (without regrouping).</p> <p>https://www.youtube.com/watch?v=E4otyifoQeg</p>	<p>Column method using dienes. 48 - 7</p> 	<p>Children to represent dienes pictorially.</p> 	<p>48 - 7 = 41</p>
	<p>2.6 Use dienes to subtract numbers up to 2 digits (with regrouping).</p> <p>https://www.youtube.com/watch?v=Dyj7hvjblmU</p>	<p>Column method using dienes. 41 - 26</p> 	<p>41-26</p> 	<p>41 - 26 = 15</p>
Year 3	<p>3.3 Column method with regrouping- with place value counters and dienes up to 3 digits.</p> <p>https://www.youtube.com/watch?v=2Rv1TaN-J0w</p> <p>https://www.youtube.com/watch?v=nqVjoR1yXdY</p>	<p>Column method using place value counters. 234 - 88</p> 	<p>234-88</p> 	<p>Formal column method.</p> $\begin{array}{r} ^2^1 \\ 234 \\ - 88 \\ \hline 6 \end{array}$

	<p>3.4 Finding the difference</p>	<p>Begin to find the difference by counting on or back.</p>  <p>The difference between 11 and 14 is 3.</p>	<p>$74 - 47 = 27$</p> 	<p>$74 - 47 = 27$</p>
<p>Year 4</p>	<p>4.2 Column method with regrouping (including regrouping thousands, hundreds, tens and ones). Up to 4 digits using place value counters.</p> <p>https://www.youtube.com/watch?v=Eo53ukbSxPQ</p>	<p>5342 – 1735</p> 	<p>5342 – 1735</p> 	<p>5342 – 1735</p> 
<p>Year 5</p>	<p>5.3 Abstract column method with regrouping (including numbers with more than 4 digits).</p>	<p>See Year 4 if required.</p>	<p>See Year 4 if required.</p>	<p>5342 – 1735</p> 
<p>Year 6</p>	<p>6.3 Abstract column method with regrouping (including numbers with more than 4 digits).</p>	<p>See Year 4 if required.</p>	<p>See Year 4 if required.</p>	<p>5342 – 1735</p> 
<p>Year 5</p>	<p>5.4 Column method for decimals up to 2 decimal places with place value counters.</p> <p>https://www.youtube.com/watch?v=HRaiSEvQ9AQ</p>	<p>3.24 – 1.16</p> 	<p>3.24 – 1.16</p> 	<p>$\pounds 3.18^4$ $-\pounds 1.16$ $\pounds 2.08$</p>

	6.4 Column method for decimals up to 2 decimal places with place value counters	See Year 5 if required.	See Year 5 if required.	See Year 5 if required.
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Conceptual variation; different ways to ask children to solve 391 - 186

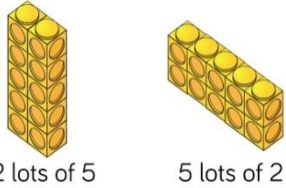

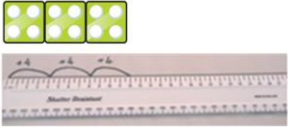
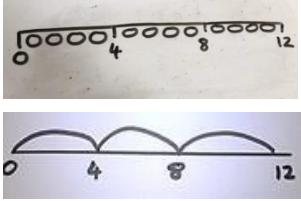
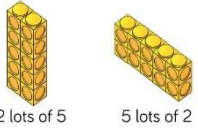
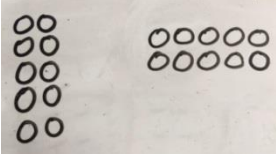
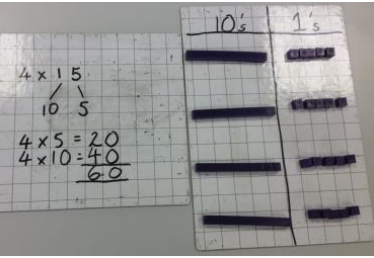
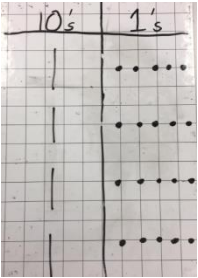
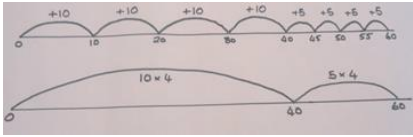
<p><u>Visual representations:</u></p> <p>Part-part-whole diagrams and bar models.</p> 	<p><u>Word problems:</u></p> <p>Raj spent £391, Timmy spent £186. How much more did Raj spend?</p> <p>Calculate the difference between 391 and 186.</p>	<p><u>Different forms of equations:</u></p> <p>391 -186 —</p> <p>What is 186 less than 391?</p> <p>Missing digit calculations</p> $\begin{array}{r} 39\Box \\ - \Box\Box6 \\ \hline \Box05 \end{array}$ <p>$\Box = 391 - 186$</p>	<p><u>Concrete representations:</u></p> 
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Multiplication

Key language: double, times, multiplied by, the product of, groups of, lots of, equal groups, factors, regroup.

Year 1/ EYFS

Progression	Concrete	Pictorial	Abstract
1.8 Counting in multiples (skip count in 2's, 5's and 10's)			"5, 10, 15, 20, 25..."
1.9 Doubling https://www.youtube.com/watch?v=gwDkWu8mgfo			$3 + 3 = 6$
1.10 Repeated addition. https://www.youtube.com/watch?v=EoEIxmyRf9M	Repeated addition 3×4 $4 + 4 + 4$ There are 3 equal groups, with 4 in each group. 	Children to represent the practical resources in a picture and use a bar model. 	$3 \times 4 = 12$ $4 + 4 + 4 = 12$

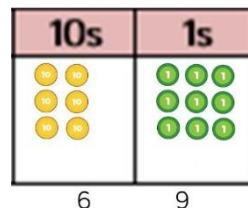
	<p>1.11 Arrays</p> <p>https://www.youtube.com/watch?v=f3p4_5ast-4</p>	<p>Putting objects into arrays.</p> <p>$2 \times 5 = 5 \times 2$</p>  <p>2 lots of 5 5 lots of 2</p>	<p>Children describe arrays in different ways.</p> <p>2 groups of 5 5 groups of 2</p> 	<p>Children to be able to use an array to write a range of calculations e.g.</p> <p>$5 \times 2 = 10$</p> <p>$2 \times 5 = 10$</p>
Year 2	<p>2.7 Number line to show repeated addition</p> <p>https://www.youtube.com/watch?v=RsB1rg1ujgc</p>	<p>Number lines to show repeated groups. E.g. 3×4</p>  <p>Cuisenaire rods and Numicon can be used too.</p>	<p>Represent this pictorially alongside a number line</p> 	<p>$4 + 4 + 4 = 12$</p> <p>$3 \times 4 = 12$</p>
	<p>2.8 Arrays - showing commutative multiplication</p> <p>https://www.youtube.com/watch?v=t2q9ePsDwDg</p>	<p>Use arrays to illustrate commutativity counters and pegs can be used.</p> <p>$2 \times 5 = 5 \times 2$</p>  <p>2 lots of 5 5 lots of 2</p>	<p>Children to represent the arrays pictorially.</p> <p>2×5 5×2</p> 	<p>Children to be able to use an array to write a range of calculations e.g.</p> <p>$10 = 2 \times 5$</p> <p>$5 \times 2 = 10$</p> <p>$2 + 2 + 2 + 2 + 2 = 10$</p> <p>$10 = 5 + 5$</p>
Year 3	<p>3.5 Multiplication by partitioning $2d \times 1d$ using dienes</p> <p>https://www.youtube.com/watch?v=uY7w48WVK6k</p>	<p>Partition to multiply using dienes of Numicon.</p> 	<p>4×15</p>  <p>A number line should also be used</p> 	<p>Children to be encouraged to show the steps they have taken.</p> <p>4×15</p> <p>10 5</p> <p>$4 \times 5 = 20$</p> <p>$4 \times 10 = 40$</p> <p><u>60</u></p>

3.6 Short multiplication (2 digit X 1 digit)

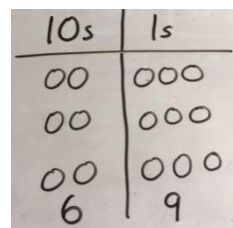
<https://www.youtube.com/watch?v=vhH-xViOfQ>

Short multiplication method.
Use counters or dienes.

$$3 \times 23$$



$$3 \times 23$$



Children to be encouraged to show the steps they have taken.

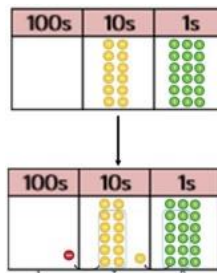
$$\begin{array}{r} 3 \times 3 = 9 \\ 3 \times 20 = 60 \\ \hline 69 \end{array} \quad \begin{array}{r} 23 \\ \times 3 \\ \hline 69 \end{array}$$

3.7 Short multiplication with regrouping (2 digit X 1 digit)

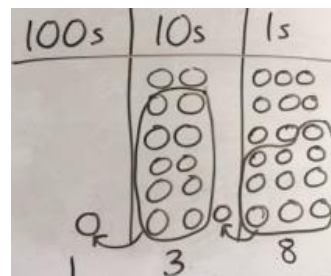
<https://www.youtube.com/watch?v=DPHXev2lb2I>

Formal column method with place value counters.

$$6 \times 23$$



$$6 \times 23$$



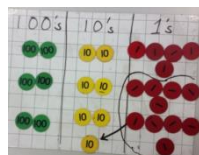
Formal written method

$$\begin{array}{r} 6 \times 23 = \\ 23 \\ \times 6 \\ \hline 138 \\ 11 \end{array}$$

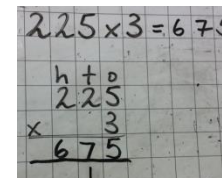
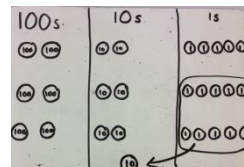
4.3 Short multiplication- place value counters. (2 and 3 digit X 1 digit)

https://www.youtube.com/watch?v=G3gRW-2ZB_k

$$225 \times 3 = 675$$



$$225 \times 3 = 675$$



4.4 Grid method to expanded method. (for 2- digit X 2-digit)

<https://www.youtube.com/watch?v=anh2w0vrz8>

Use abstract methods.

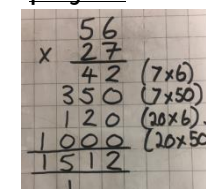
Use abstract methods.

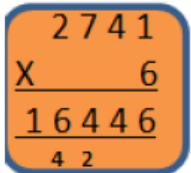
First introduce children to the grid method.

$$56 \times 27 = 1512$$

x	20	7	
50	1000	350	1350
6	120	42	162
			1512

Then progress to the expanded method.



Year 5	5.5 Short multiplication Abstract only but might need a repeat of year 4 first (up to 4 digit X 1 digit) https://www.youtube.com/watch?v=3YScfFlbWsQ	See Year 4 if required	See Year 4 if required	
	5.6 Long multiplication Abstract only but might need a repeat of year 4 first (up to 4 digit X 2 digits)	See year 4 if required.	See year 4 if required.	$\begin{array}{r} 132 \\ \times 56 \\ \hline 792 \\ 6600 \\ \hline 7392 \end{array}$ <div style="display: flex; justify-content: space-between; width: 100%;"> (132 × 6) (132 × 50) </div>
Year 6	6.5 Long multiplication Abstract method (up to 4 digits by a 2 digit number) https://www.youtube.com/watch?v=9gHHTOL5514	See year 4 if required.	See year 4 if required.	$\begin{array}{r} 132 \\ \times 56 \\ \hline 792 \\ 6600 \\ \hline 7392 \end{array}$ <div style="display: flex; justify-content: space-between; width: 100%;"> (132 × 6) (132 × 50) </div>

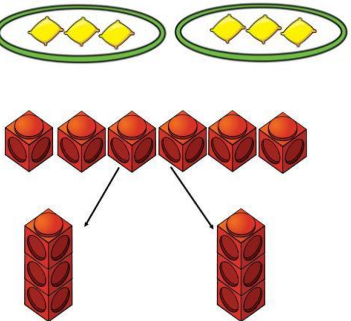
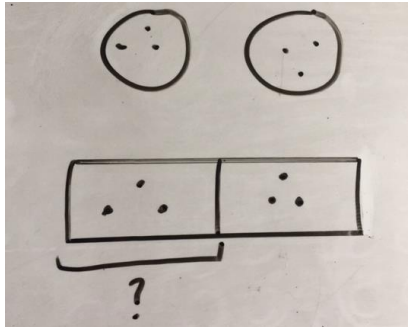


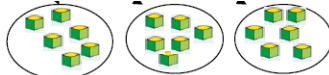
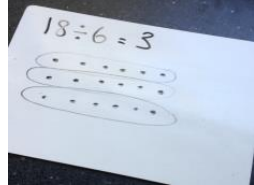

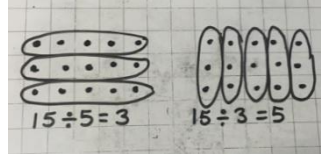
Conceptual variation; different ways to ask children to solve 6×23

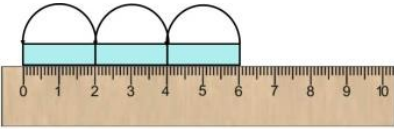
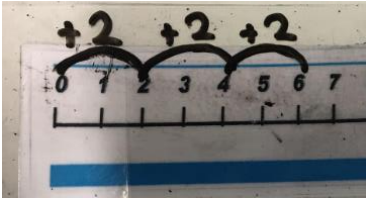


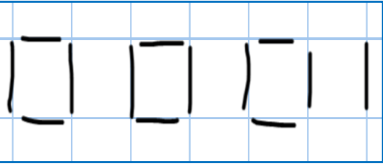
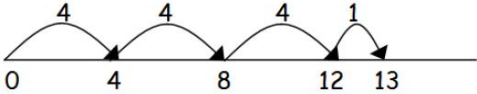
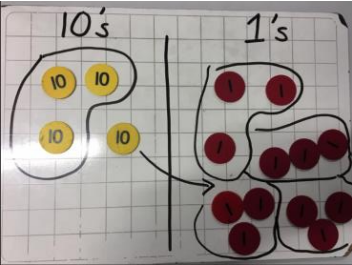
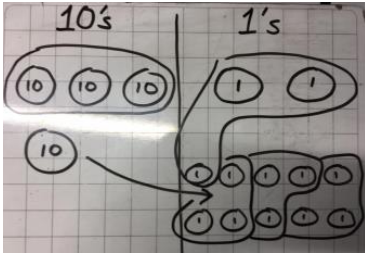
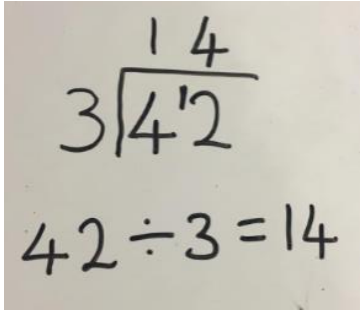
Visual representations:	Word problems:	Different forms of equation:	Concrete representations:																																																																								
<div><table><tr><td>23</td><td>23</td><td>23</td><td>23</td><td>23</td><td>23</td></tr></table><div></div><p>?</p><p>This image shows 4 x 6</p><div><table><tr><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td></tr><tr><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td></tr><tr><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td></tr><tr><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td><td>★</td></tr></table></div><p>Change the image to show 4 x 7</p></div>	23	23	23	23	23	23	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	★	<p>Mai had to swim 23 lengths, 6 times a week.</p> <p>How many lengths did she swim in one week?</p> <p>Using place value counters, prove that 6 x 23 = 138</p>	<p>Find the product of 6 and 23</p> <div><div></div> = 6 x 23</div> <div><table><tr><td>6</td><td>23</td></tr><tr><td>x 23</td><td>x 6</td></tr><tr><td>—</td><td>—</td></tr></table></div>	6	23	x 23	x 6	—	—	<p>What is the calculation?</p> <p>What is the product?</p> <table><tr><th>100s</th><th>10s</th><th>1s</th></tr><tr><td></td><td><table><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr></table></td><td><table><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr></table></td></tr></table>	100s	10s	1s		<table><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td></tr></table>	●	●	●	●	●	●	●	●	●	●	<table><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr><tr><td>●</td><td>●</td><td>●</td><td>●</td></tr></table>	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
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Division



Key language: share, group, groups of, lots of, regroup divide, divided by, remainder divisor, dividend.

	Progression	Concrete	Pictorial	Abstract		
EYFS / Year 1	1.12 Division by sharing objects into groups. https://www.youtube.com/watch?v=a7RB-gesqAU	Sharing using a range of objects. $6 \div 2$ 	Represent the sharing pictorially. 	$6 \div 2 = 3$ <table border="1"><tr><td>3</td><td>3</td></tr></table>	3	3
	3	3				
1.13 Division by making groups. https://www.youtube.com/watch?v=l3f0526wC8	 I have 12 strawberries and put them in groups of 3, how many groups?	Pictures of objects Each pot needs three pencils in. How many pots do we need? 	$12 \div 3 = 4$			
Year 2	2.9 Division by making groups. https://www.youtube.com/watch?v=9aicYLZiL2A	18 in groups of 6. 		There are 3 groups of 6 in 18. $18 \div 6 = 3$		
	2.10 Division within arrays- linking to multiplication. (Sharing and grouping) https://www.youtube.com/watch?v=95Y4UCivcww	15 shared between 3. 15 in groups of 5. 		$15 \div 5 = 3$ $15 \div 3 = 5$		

	<p>2.11 Division as counting up</p> <p>https://www.youtube.com/watch?v=2c3FwEcCpyc</p>	<p>How many groups of 2 in 6?</p> <p>Use number line or Cuisenaire rods on a ruler.</p> <p>$6 \div 2$</p>  <p>3 groups of 2</p>	<p>Children to represent division by counting up</p> 	<p>$6 \div 2 = 3$</p>
	<p>3.8 To divide a two digit number by a one digit number with and without remainders.</p> <p>https://www.youtube.com/watch?v=d0mB9lprpwQ</p>	<p>Cuisenaire rods, above a ruler can also be used.</p> <p>$13 \div 4$</p> <p>Use of lollipop sticks to form wholesquares are made because we are dividing by 4.</p>  <p>There are 3 whole squares, with 1 remainder.</p> <p>Use of numicon. How many groups of 3 in 20?</p> <p>$20 \div 3$</p> 	<p>Children to represent the lollipop sticks pictorially.</p>  <p>There are 3 whole squares, with 1 left over.</p>	<p>$13 \div 4 = 3 \text{ remainder } 1$</p> <p>Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line.</p> <p>'3 groups of 4, with 1 left over'</p> <p>$13 \div 4 = 3 \text{ r } 1$</p> 
	<p>3.9 Short Division</p> <p>To divide a two digit number by a one digit number with regrouping of tens and ones (no remainders)</p> <p>https://www.youtube.com/watch?v=xEOgkVhATJg</p>	<p>Short division using place value counters and dienes to group.</p> <p>$42 \div 3 = 14$</p> 	<p>Children to represent the place value counters/dienes pictorially.</p> <p>$42 \div 3 = 14$</p> 	

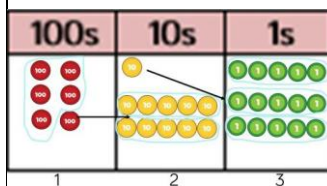
Year 4

4.5 Short division

To divide a 3 digit number by a 1 digit number with regrouping in hundreds, tens and ones

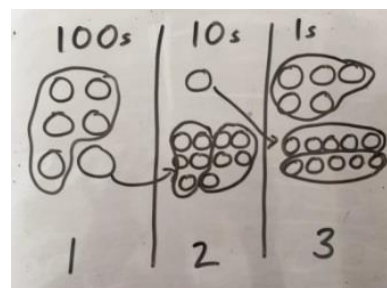
<https://www.youtube.com/watch?v=HwX6PG0SSJQ>

Short division using place value counters to group. $615 \div 5$



How many groups of 5 hundreds can you make with 6 hundred counters?

Represent the place value counters pictorially.



Children progress to the calculation using the short division scaffold.

$$\begin{array}{r} 123 \\ 5 \overline{) 615} \end{array}$$

Year 5

5.7 Short division

Dividing a 4 digit number by a 1 digit number including remainders

See Year 4 if required.

See Year 4 if required.

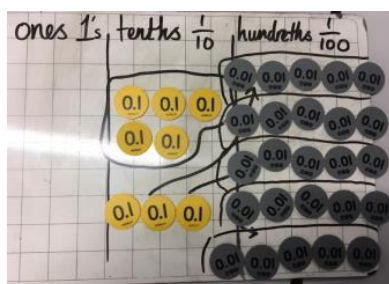
$$\begin{array}{r} 0658. \\ 4 \overline{) 2634} \end{array} \quad \text{Remainder 2}$$

5.8 Short division

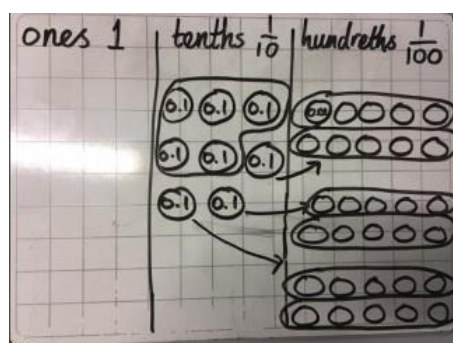
Division problems with decimal numbers (up to 2 d.p)

<https://www.youtube.com/watch?v=Jzolg7iqNog>

$$0.8 \div 5$$



$$0.8 \div 5$$



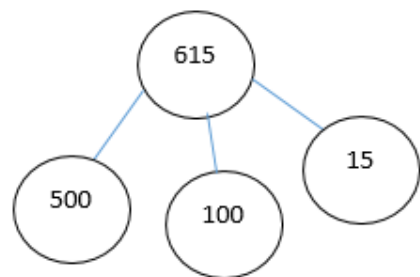
$$\begin{array}{r} 0.16 \\ 5 \overline{) 0.80} \end{array}$$

Year 6	6.6 Short division	See Year 4 if required.	See Year 4 if required.	$\begin{array}{r} 0658. \\ 4 \overline{) 2^2 6^2 3^3 4} \end{array}$
	6.7 Long division/ chunking method (up to 4 digit by a 2 digit number) https://www.youtube.com/watch?v=y6TmqkHIoOQ			<div> $\begin{array}{r} 203 \\ 14 \overline{) 2842} \\ \underline{2800} - (200 \times 14) \\ 0042 \\ \underline{0042} - (3 \times 14) \\ 0000 \end{array}$ <div> Help Box $1 \times 14 = 14$ $2 \times 14 = 28$ $3 \times 14 = 42$ $4 \times 14 = 56$ $5 \times 14 = 70$ $6 \times 14 = 84$ $7 \times 14 = 98$ $8 \times 14 = 112$ $9 \times 14 = 126$ $10 \times 14 = 140$ </div> </div>

Conceptual variation; different ways to ask children to solve

Visual representations:

Using the part whole model below, how can you divide 615 by 5 without using short division?



Word problems:

I have £615 and share it equally between 5 bank accounts. How much will be in each account?

615 pupils need to be put into 5 groups. How many will be in each group?

Different forms of equation:

$$5 \overline{) 615}$$

$$615 \div 5 =$$

$$\square = 615 \div 5$$

Concrete representations:

What is the calculation?
What is the answer?

