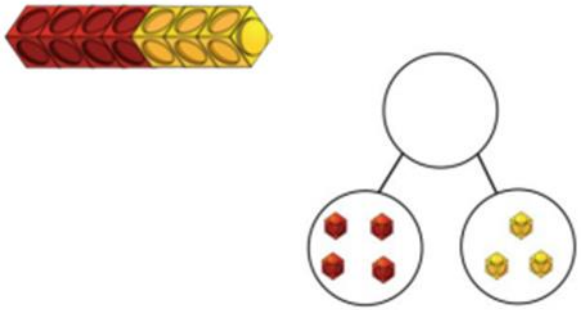
Bude Primary Academy – Juniors

Calculation Policy

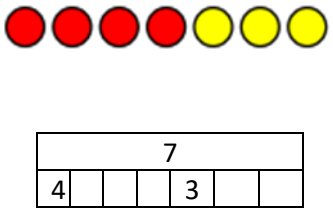
Addition

Year 1 - Addition — Add 1-digit numbers within 10 (aggregation)

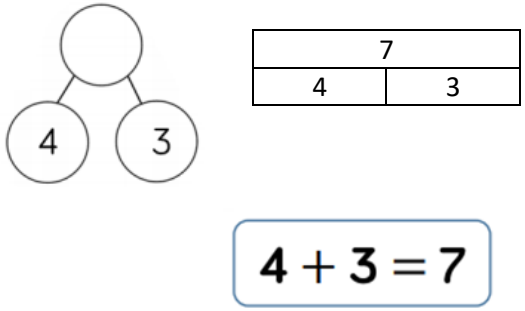
Concrete



Pictorial

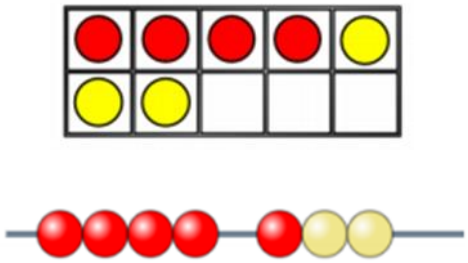


Abstract

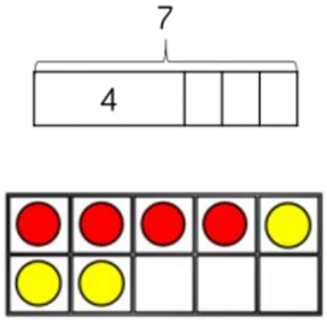


Year 1 - Addition — Add 1-digit numbers within 10 (augmentation)

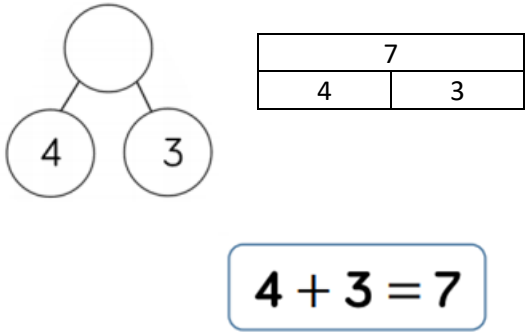
Concrete

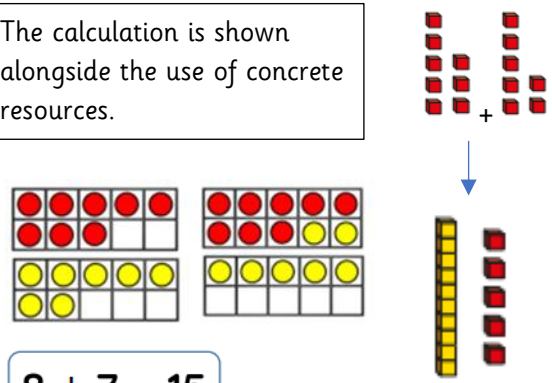
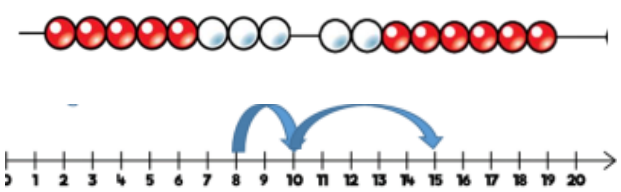
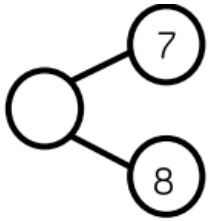
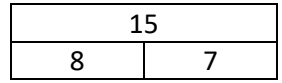


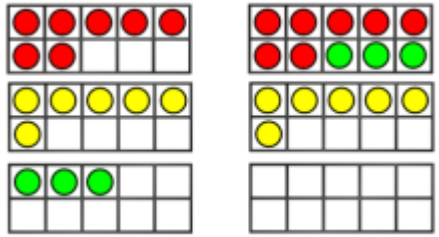
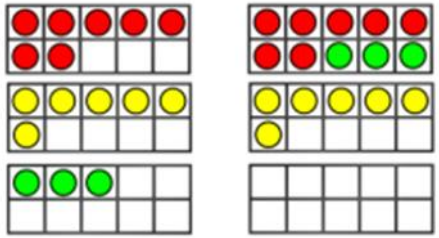
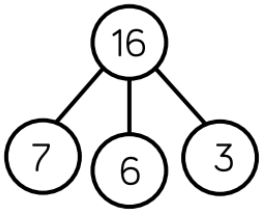
Pictorial

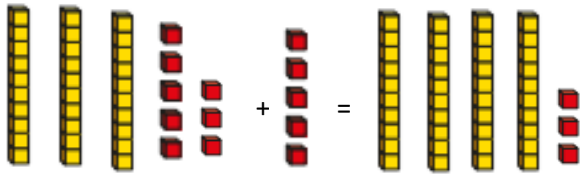
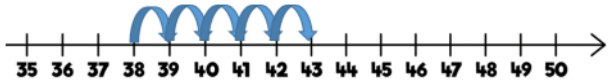
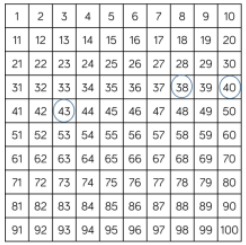
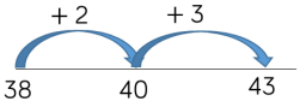
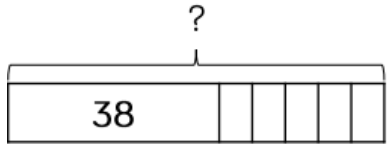
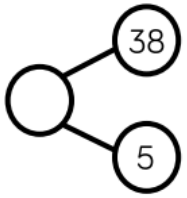


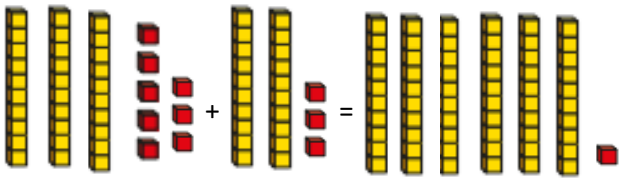
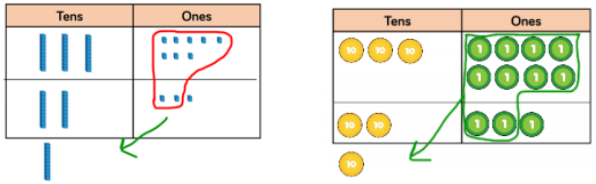
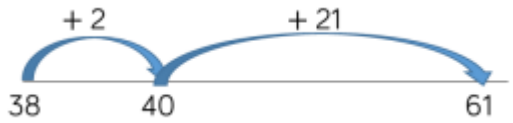
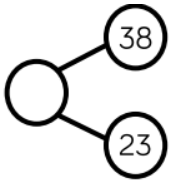
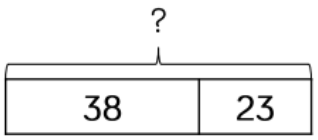
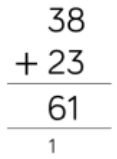
Abstract

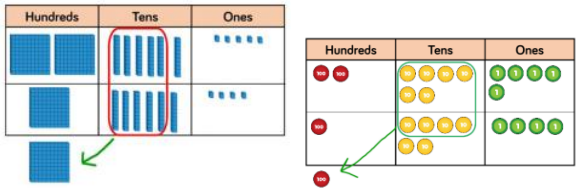
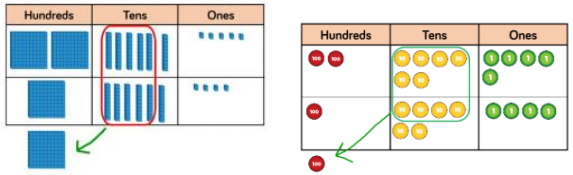
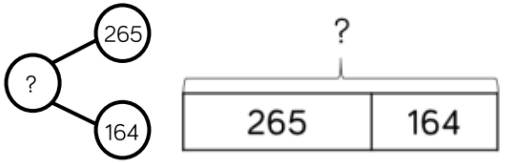


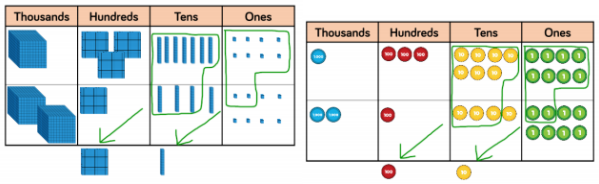
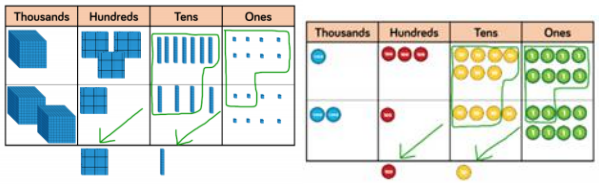
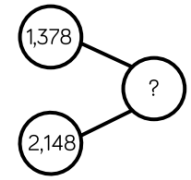
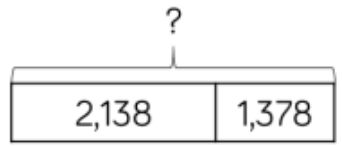
<table>
<tr><th colspan="2">Year 1/2 - Addition</th><th colspan="2">Add 1 and 2-digit numbers to 20</th></tr>
<tr><th>Concrete</th><th colspan="2">Pictorial</th><th>Abstract</th></tr>
<tr><td>The calculation is shown alongside the use of concrete resources.
 
8 + 7 = 15</td><td colspan="2">  </td><td> 
 
8 + 7 = 15</td></tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td>Key skills and concepts</td><td colspan="3">When adding 1-digit numbers that cross 10:
• Show the calculation next to concrete and pictorial representations
• Highlight the importance of ten ones equalling one ten ‘ten ones makes one ten’
• Use different manipulatives to represent the exchange
• Use concrete resources alongside number lines to support children’s understanding in how to partition their jumps</td></tr>
</table>

Year 2 - Addition	Add three 1-digit numbers	
Concrete	**Pictorial**	**Abstract**
 $7 + 6 + 3 = 16$ 10 The calculation is shown alongside the use of concrete resources.	 $7 + 6 + 3 = 16$ 10 Alongside the use of concrete resources, images and drawings of these resources are used.	 16 7 6 3 $7 + 6 + 3 = 16$
Key skills and concepts	When adding three 1-digit numbers: • Encourage children to look for **number bonds to 10** or **doubles** • This skill supports children's **understanding of commutativity** • Manipulatives that show number bonds to 10 are effective to use	

Year 2/3 - Addition	Add 1-digit and 2-digit numbers to 100	
Concrete	**Pictorial**	**Abstract**
 **38 + 5 = 43**	  	  **38 + 5 = 43**
Key skills and concepts	When adding single digits to a two-digit number: • Encourage children to **count on from the larger number** • Apply their **knowledge of number bonds** to add efficiently e.g., 8 + 5 = 13 so 38 + 5 = 43 • Hundred square and base 10 can be used for support	

Year 2/3 - Addition	Add two 2-digit numbers to 100	
Concrete	**Pictorial**	**Abstract**
 38 + 23 = 61	 	  38 + 23 = 61 
Key skills and concepts	When adding two 2-digit numbers to 100: **Column method** • Encourage children to **use the formal method alongside base 10 or place value counters** **Counting on** • **A blank number line** can be used **to count on** to find the total • Encourage children **to jump to multiples of 10** for efficiency	

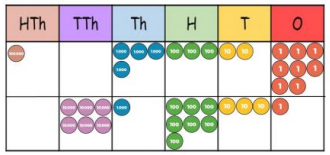
Year 3 - Addition	Add numbers with up to 3 digits	
Concrete	**Pictorial**	**Abstract**
 265 + 164 429 1 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	 265 + 164 = 429 265 + 164 429 1
Key skills and concepts	When adding numbers with up to 3 digits: • **Base 10** and **place value counters** are the most effective manipulatives • As **number sizes increase, place value counters** are more efficient • Children **write the calculation alongside any concrete resources** so the links to the written column method can be seen • **Plain counters** on a place value grid can be used as **concrete resources and for images / children's drawings**	

Year 4 - Addition	Add numbers with up to 4 digits	
Concrete	**Pictorial**	**Abstract**
 1 3 7 8 + 2 1 4 8 3 5 2 6 1 1 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	  1 3 7 8 + 2 1 4 8 3 5 2 6 1 1 1,378 + 2,148 = 3,526
Key skills and concepts	When adding numbers with up to 4 digits: • **Base 10** and **place value counters** are the most effective manipulatives • As **number sizes increase, place value counters** are more efficient • Children **write the calculation alongside any concrete resources** so the links to the written column method can be seen • **Plain counters** on a place value grid can be used as **concrete resources and for images / children's drawings**	

Year 5/6 - Addition

Add numbers with more than 4 digits

Concrete

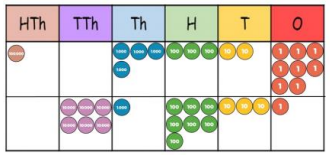


1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9

1

The calculation is shown alongside the use of any concrete resources.

Pictorial

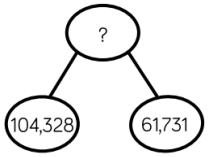


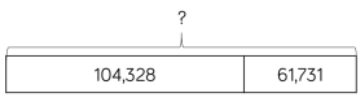
1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9

1

Alongside the use of concrete resources, images and drawings of these resources are used.

Abstract



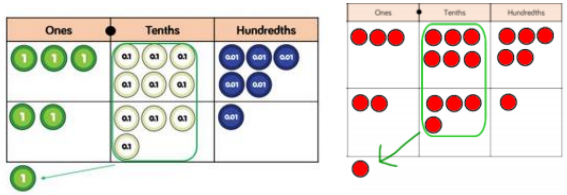
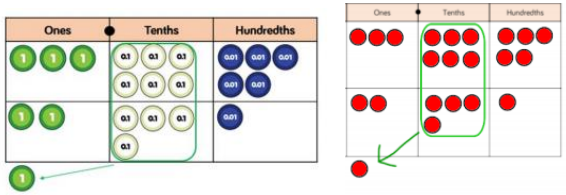
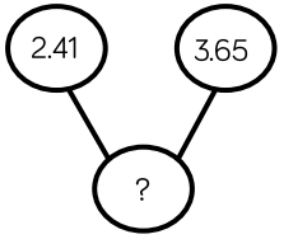


$$104{,}328 + 61{,}731 = 166{,}059$$

1	0	4	3	2	8
+	6	1	7	3	1
1	6	6	0	5	9

1

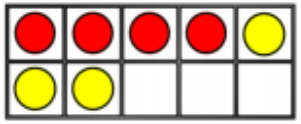
Key skills and concepts	When adding numbers with more than 4 digits: • **Place value counters or plain counters on a place value grid** are the most effective manipulatives • At this stage **children should be encouraged to work in the abstract, using the column method** to add larger numbers efficiently

Year 5 - Addition	Add numbers with up to 3 decimal places	
Concrete	**Pictorial**	**Abstract**
 3.65 + 2.41 6.06 1 The calculation is shown alongside the use of any concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	 3.65 + 2.41 6.06 1 ? 3.65 | 2.41 **3.65 + 2.41 = 6.06**
Key skills and concepts	When adding numbers with up to 3 decimal places: • **Place value counters or plain counters on a place value grid** are the most effective manipulatives • Ensure children have experience of **adding decimals with a variety of decimal places** • Ensure children have experience **putting this skill into context** when **adding money and measures**	

Subtraction

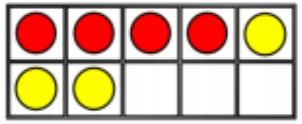
Year 1 - Subtraction — Subtract 1-digit within 10 (partitioning)

Concrete



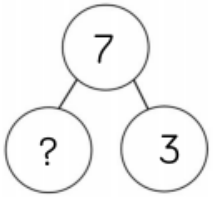
$7 - 3 = 4$

Pictorial



Alongside the use of concrete resources, images and drawings of these resources are used.

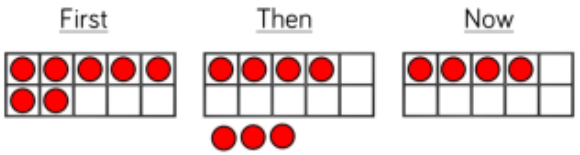
Abstract



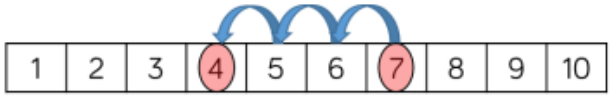
$7 - 3 = 4$

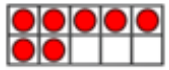
Year 1 - Subtraction — Subtract 1-digit numbers within 10 (reduction)

Concrete

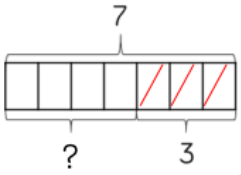


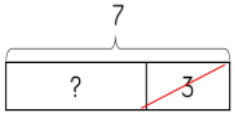
Pictorial





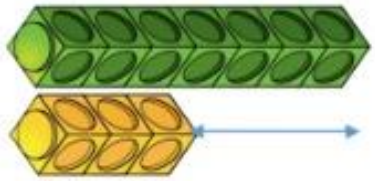
(Cross out on tens frame)

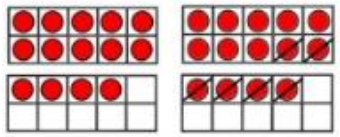
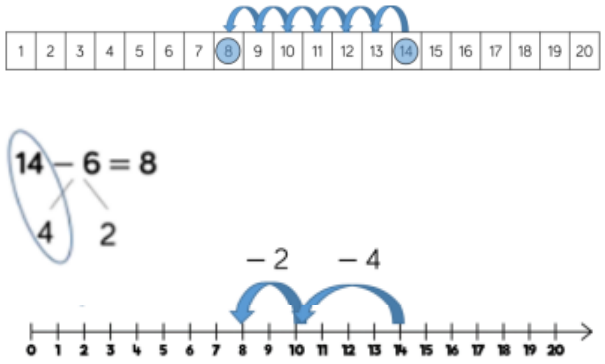
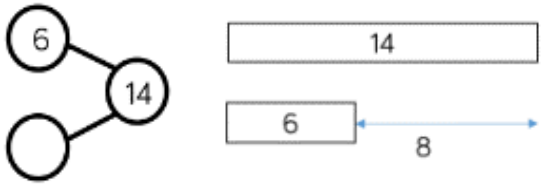


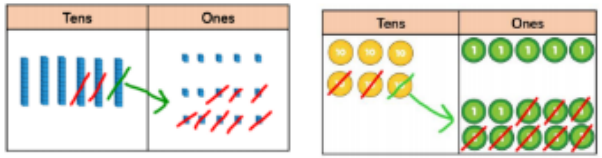
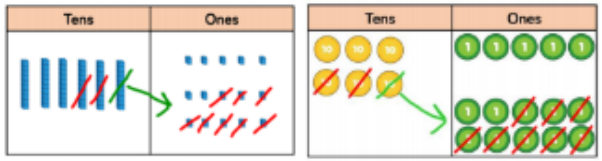
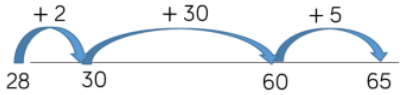
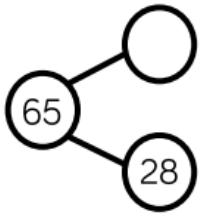
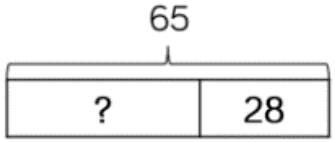


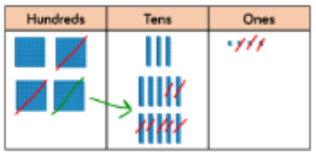
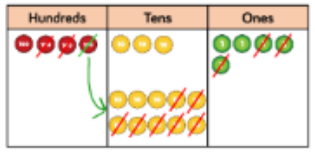
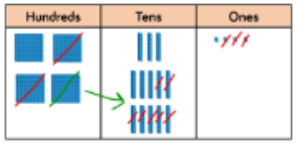
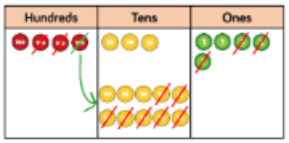
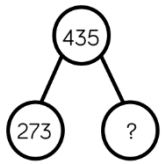
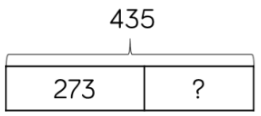
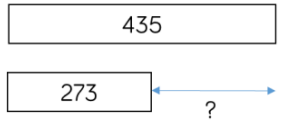
Abstract

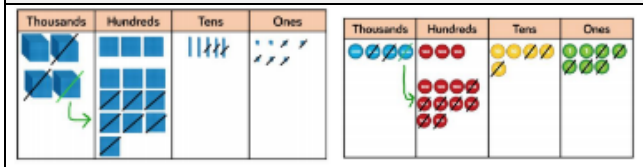
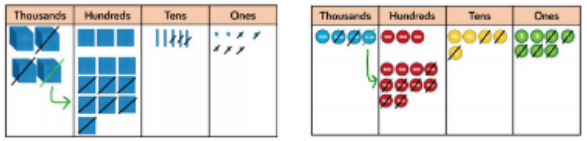
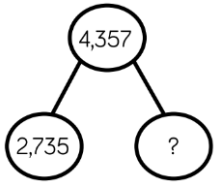
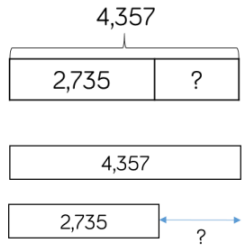
$7 - 3 = 4$

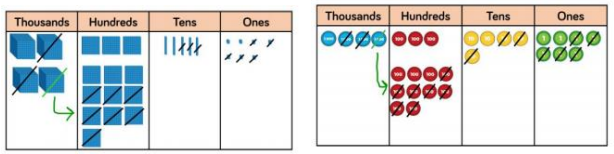
Year 1 - Subtraction	Subtract 1-digit within 10 (finding the difference)	
Concrete	**Pictorial**	**Abstract**
		$7 - 3 = 4$

Year 1/2 - Subtraction	Subtract 1 and 2-digit numbers to 20	
Concrete	**Pictorial**	**Abstract**
 Cubes and bead strings are also used. $14 - 6 = 8$ The calculation is shown alongside the use of concrete resources.		 $14 - 6 = 8$
Key skills and concepts	When subtracting 1 and 2-digit numbers to 20: • Show the calculation next to concrete and pictorial representations • Highlight the importance of **ten ones equalling one ten** when subtracting 1-digit numbers that cross 10 • Encourage children **to find the number bond to 10 when partitioning the subtracted number.** Use ten frames and number lines to support this.	

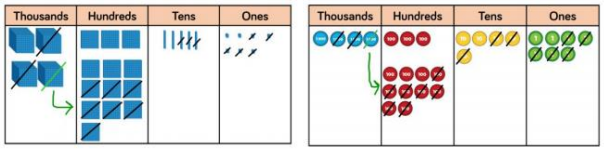
Year 2 - Subtraction	Subtract 1 and 2-digit numbers to 100	
Concrete	**Pictorial**	**Abstract**
 $65 - 28 = 37$ The calculation is shown alongside the use of concrete resources.	 and counting back using a number line  Alongside the use of concrete resources, images and drawings of these resources are used.	  5 1 65 − 28 37 $65 - 28 = 37$
Key skills and concepts	When subtracting 1 and 2-digit numbers to 100: **Column method:** • Encourage children to use the **formal column method alongside base 10 or place value counters** **Counting on:** • Use a **blank number line to count on** to find the difference • **Jump in multiples of 10** for efficiency	

Year 3 - Subtraction	Subtract numbers with up to 3 digits	
Concrete	**Pictorial**	**Abstract**
  $\begin{array}{r} {}^{3}\not{4}^{1}\not{3}5 \\ -\ 273 \\ \hline 262 \end{array}$ The calculation is shown alongside the use of concrete resources.	  Alongside the use of concrete resources, images and drawings of these resources are used.	435 – 273 = 262  $\begin{array}{r} {}^{3}\not{4}^{1}\not{3}5 \\ -\ 273 \\ \hline 262 \end{array}$  
Key skills and concepts	When subtracting numbers with up to 3 digits: • **Base 10** and **place value counters** are the most effective manipulatives • As **number sizes increase, place value counters** are more efficient • Children **write the calculation alongside any concrete resources** so the links to the written column method can be seen • **Plain counters** on a place value grid can be used as **concrete resources and for images / children's drawings**	

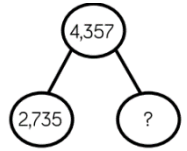
Year 4 - Subtraction	Subtract numbers with up to 4 digits	
Concrete	**Pictorial**	**Abstract**
 3 1 4357 – 2735 1622 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	 3 1 4357 – 2735 1622  4,357 – 2,735 = 1,622
Key skills and concepts	When subtracting numbers with up to 4 digits: • **Base 10** and **place value counters** are the most effective manipulatives • As **number sizes increase, place value counters** are more efficient • Children **write the calculation alongside any concrete resources** so the links to the written column method can be seen • **Plain counters** on a place value grid can be used as **concrete resources and for images and children's drawings**	

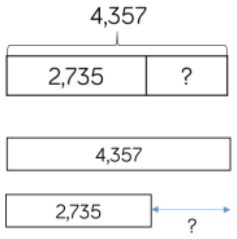
<table>
<tr><th colspan="2">Year 5/6 - Subtraction</th><th colspan="2">Subtract numbers with more than 4 digits</th></tr>
<tr><th>Concrete</th><th>Pictorial</th><th colspan="2">Abstract</th></tr>
<tr>
<td> 

3 1
4357
– 2735
1622

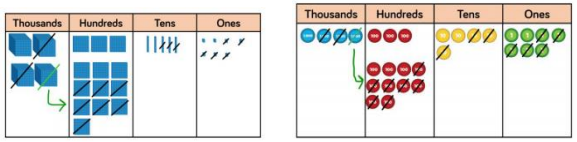
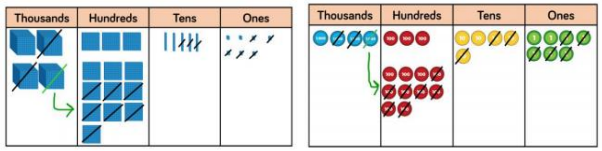
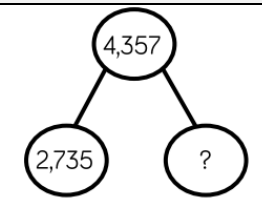
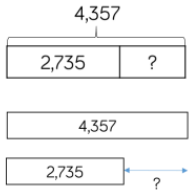
The calculation is shown alongside the use of any concrete resources.</td>
<td> 

Alongside the use of concrete resources, images and drawings of these resources are used.</td>
<td colspan="2">4,357 – 2,735 = 1,622

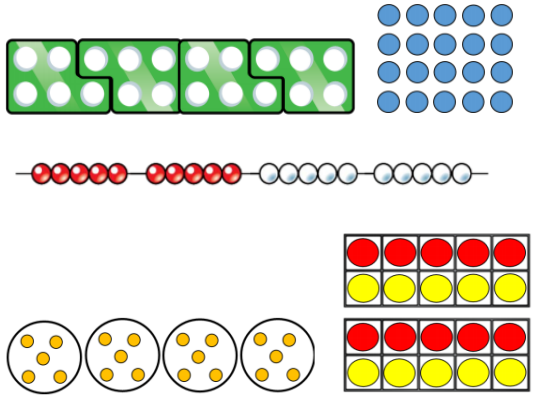
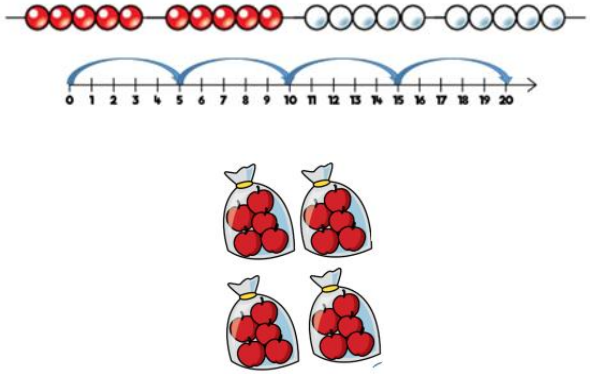
3 1
4357
– 2735
1622</td>
</tr>
<tr><td></td><td colspan="3"></td></tr>
<tr><td>Key skills and concepts</td><td colspan="3">When subtracting numbers with more than 4 digits:
• Place value counters or plain counters on a place value grid are the most effective manipulatives
• Encourage children to work in the abstract, using column method</td></tr>
</table>

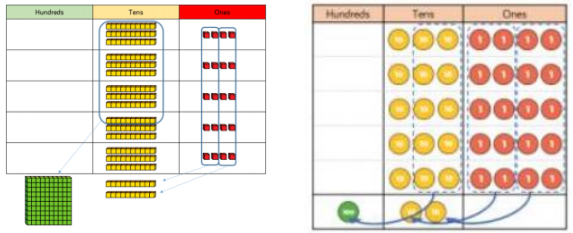
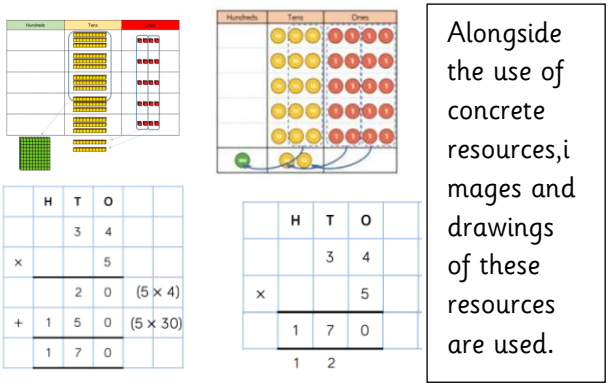
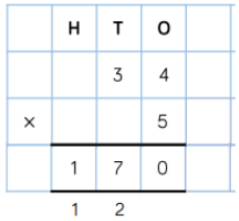
Year 5 - Subtraction	Subtract with up to 3 decimal places	
Concrete	**Pictorial**	**Abstract**
 3 1 4357 – 2735 1622 The calculation is shown alongside the use of any concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	 3 1 4357 – 2735 1622  4,357 – 2,735 = 1,622
Key skills and concepts	When subtracting numbers with up to 3 decimal places: • **Place value counters or plain counters on a place value grid** are the most effective manipulatives • Ensure children have experience of **adding decimals with a variety of decimal places** • Ensure children have experience **putting this skill into context** when **subtracting money and measures**	

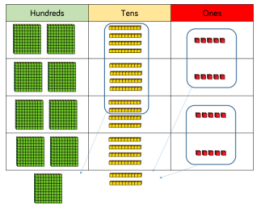
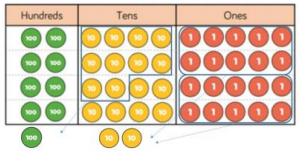
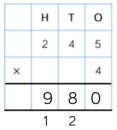
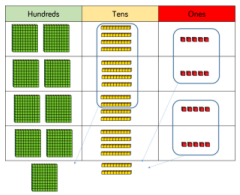
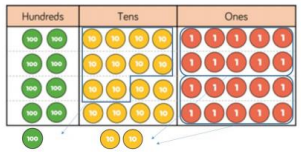
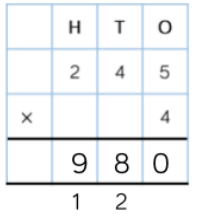
Multiplication

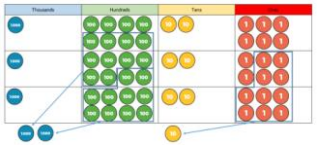
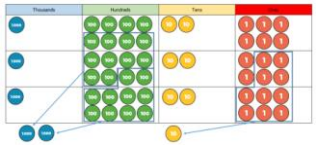
Year 1/2 - Multiplication

Solve 1-step problems using multiplication

Concrete	Pictorial	Abstract
		One bag holds 5 apples. How many apples do 4 bags hold? $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$
Key skills and concepts	When solving 1-step problems using multiplication: • Children represent multiplication as repeated addition in many different ways • In **Year 1** use concrete & pictorial representations to solve problems. Children are **not expected to record multiplication formally.** • In **Year 2** children are introduced to the multiplication symbol	

Year 3/4 - Multiplication	Multiply 2-digit numbers by 1-digit numbers	
Concrete	**Pictorial**	**Abstract**
 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources,i mages and drawings of these resources are used.	$34 \times 5 = 170$ 
Key skills and concepts	When multiplying 2-digit numbers by 1-digit numbers: • The expanded method can be used before moving on to the short multiplication method • Place value counters are used to support the understanding of the method rather than the supporting of multiplication (use smaller calculations to demonstrate the method before moving onto the abstract), children should use their times table knowledge (times table squares can be used to support children with gaps in their knowledge)	

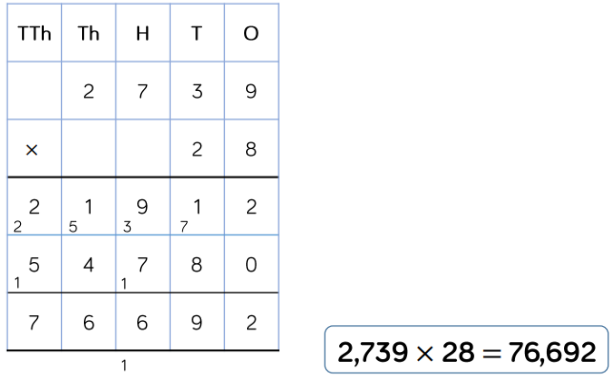
Year 3/4 - Multiplication	Multiply 3-digit numbers by 1-digit numbers	
Concrete	**Pictorial**	**Abstract**
   The calculation is shown alongside the use of concrete resources.	  Alongside the use of concrete resources images and drawings of these resources are used.	 $245 \times 4 = 980$
Key skills and concepts	When multiplying 3-digit numbers by 1-digit numbers: • When moving to 3-digit by 1-digt multiplication encourage children to move towards the short, formal written method. • Base 10 & place value counters support the understanding of the written method. • Limit the number of exchanges needed & move children away from using resources when multiplying larger numbers.	

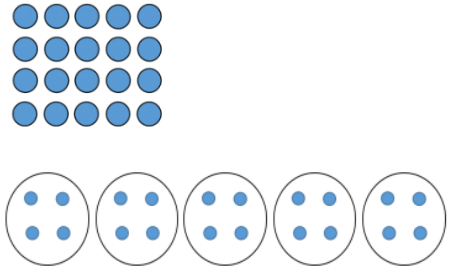
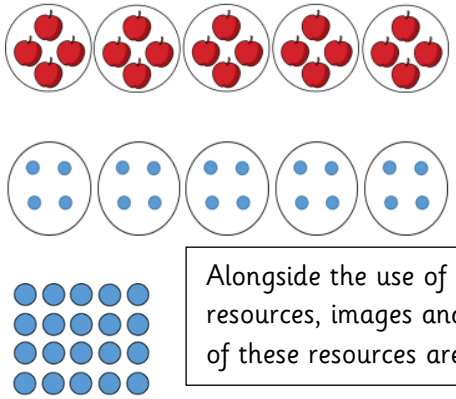
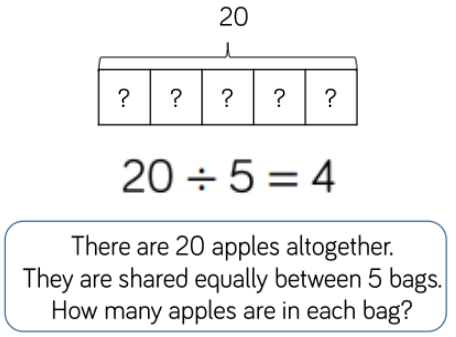
Year 5 - Multiplication	Multiply 4-digit numbers by 1-digit numbers	
Concrete	**Pictorial**	**Abstract**
 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	$1,826 \times 3 = 5,478$
Key skills and concepts	When multiplying 4-digit numbers by 1-digit numbers: • **Place value counters** are the most effective manipulatives • Place value counters are used to support the understanding of the method rather than the supporting of multiplication, as children should use their times table knowledge (times table squares can be used to support children with gaps in their knowledge). • Ensure exchanged digits are placed underneath and keep this consistent.	

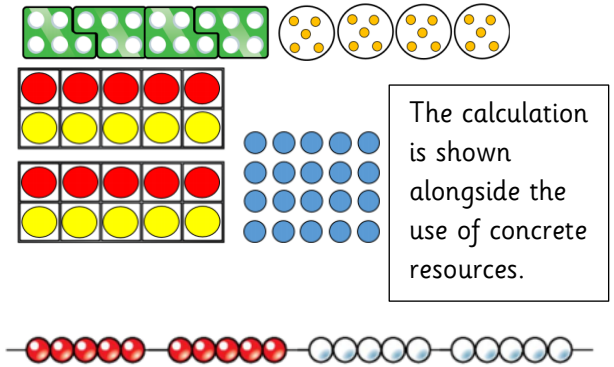
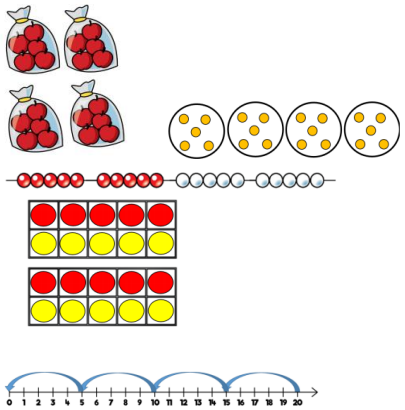
<table>
<tr><th colspan="2">Year 5 - Multiplication</th><th colspan="2">Multiply 2-digit numbers by 2-digit numbers</th></tr>
<tr><th>Concrete</th><th>Pictorial</th><th colspan="2">Abstract</th></tr>
<tr><td></td><td></td><td colspan="2">$22 \times 31 = 682$
<table><tr><td></td><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td></td><td>2</td><td>2</td></tr><tr><td>×</td><td></td><td>3</td><td>1</td></tr><tr><td></td><td></td><td>2</td><td>2</td></tr><tr><td></td><td>6</td><td>6</td><td>0</td></tr><tr><td></td><td>6</td><td>8</td><td>2</td></tr></table></td></tr>
<tr><td></td><td></td><td colspan="2"></td></tr>
<tr><td>Key skills and concepts</td><td colspan="3">When multiplying 2-digit numbers by 2-digit numbers:

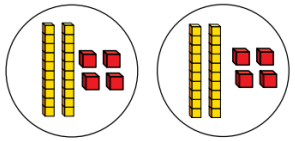
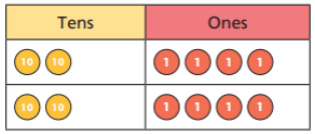
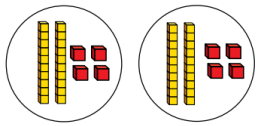
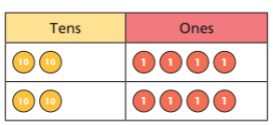
• Written methods are the most accurate & efficient as concrete and pictorial representations become less effective
• If they are struggling with times tables, provide multiplication grids
• Ensure exchanged digits are placed underneath and keep this consistent.</td></tr>
</table>

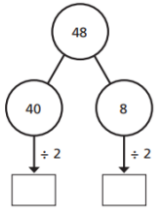
<table>
<tr><th colspan="2">Year 5 - Multiplication</th><th colspan="2">Multiply 3-digit numbers by 2-digit numbers</th></tr>
<tr><th>Concrete</th><th>Pictorial</th><th colspan="2">Abstract</th></tr>
<tr><td></td><td></td><td colspan="2">234 × 32 = 7,488
<table><tr><td>Th</td><td>H</td><td>T</td><td>O</td></tr><tr><td></td><td>2</td><td>3</td><td>4</td></tr><tr><td>×</td><td></td><td>3</td><td>2</td></tr><tr><td></td><td>4</td><td>6</td><td>8</td></tr><tr><td>1 7</td><td>1 0</td><td>2</td><td>0</td></tr><tr><td>7</td><td>4</td><td>8</td><td>8</td></tr></table></td></tr>
<tr><td></td><td></td><td colspan="2"></td></tr>
<tr><td>Key skills and concepts</td><td colspan="3">When multiplying 3-digit numbers by 2-digit numbers:
• Written methods are the most accurate & efficient as concrete and pictorial representations become less effective
• If they are struggling with times tables, provide multiplication grids
• Ensure exchanged digits are placed underneath and keep this consistent.</td></tr>
</table>

Year 5/6 - Multiplication	Multiply 4-digit numbers by 2-digit numbers	
Concrete	**Pictorial**	**Abstract**
		
Key skills and concepts	When multiplying 4-digit numbers by 2-digit numbers: • **Written methods are the most accurate & efficient** as concrete and pictorial representations become less effective • Children should already be confident with the written method • If they are struggling with times tables, provide multiplication grids • Ensure exchanged digits are placed underneath and keep this consistent.	

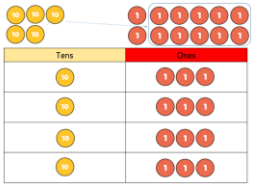
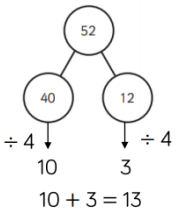
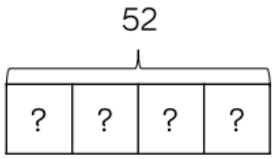
<table>
<tr><th colspan="3">Division</th></tr>
<tr><th>Year 1/2 - Division</th><th colspan="2">Solve 1-step problems using division (sharing)
Divide 2-digits by 1-digit (sharing with no exchange)</th></tr>
<tr><th>Concrete</th><th>Pictorial</th><th>Abstract</th></tr>
<tr>
<td>  </td>
<td> 
</td>
<td> 
</td>
</tr>
<tr><td></td><td colspan="2"></td></tr>
<tr>
<td>Key skills and concepts</td>
<td colspan="2">When solving 1-step problems using division (sharing):
• Children solve problems by sharing amounts into equal groups
• In Year 1 use concrete & pictorial representations to solve problems. Children are not expected to record division formally.
• In Year 2 children are introduced to the division symbol</td>
</tr>
</table>

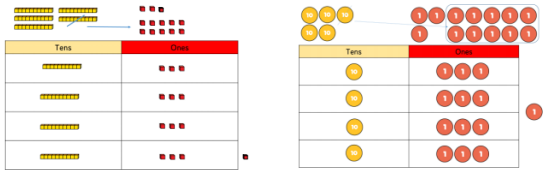
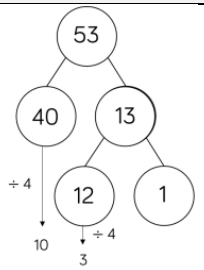
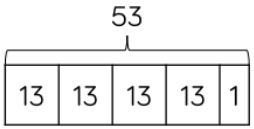
Year 1/2 - Division	Solve 1-step problems using division (grouping)	
Concrete	**Pictorial**	**Abstract**
 The calculation is shown alongside the use of concrete resources.	 Alongside the use of concrete resources, images and drawings of these resources are used.	There are 20 apples altogether. They are put in bags of 5. How many bags are there? $20 \div 5 = 4$
Key skills and concepts	When solving 1-step problems using division (grouping): • Children **solve problems by grouping** & counting the number of groups • Grouping encourages **counting in multiples** and links to repeated subtraction • **Use concrete representations** in fixed groups to show the link between multiplication & division.	

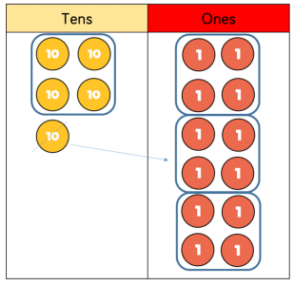
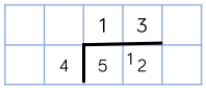
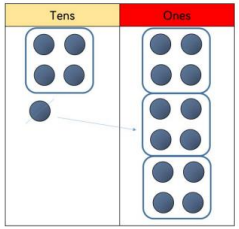
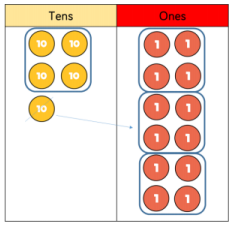
<table>
<tr><th colspan="2">Year 2/3 - Division</th><th colspan="2">Divide 2-digits by 1-digit (sharing with no exchange)</th></tr>
<tr><th>Concrete</th><th colspan="2">Pictorial</th><th>Abstract</th></tr>
<tr>
<td> 

</td>
<td colspan="2"> 


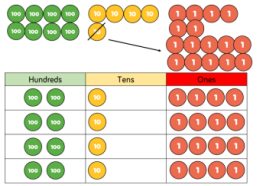
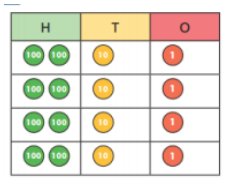
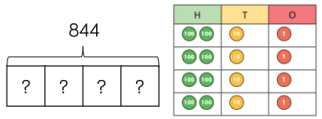
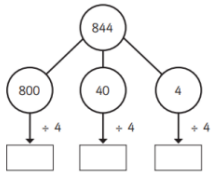
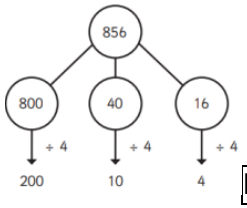


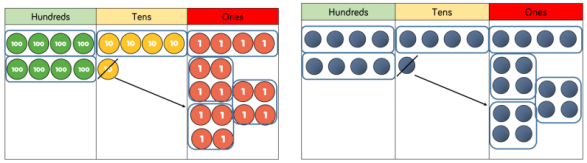
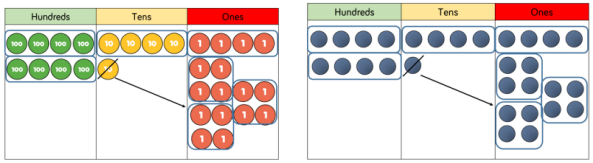
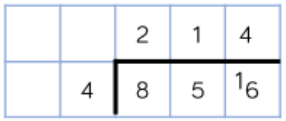
Alongside the use of concrete resources, images and drawings of these resources are used.</td>
<td>$48 \div 2 = 24$</td>
</tr>
<tr><td></td><td colspan="3"></td></tr>
<tr>
<td>Key skills and concepts</td>
<td colspan="3">When dividing 2-digits by 1-digit (sharing with no exchange):
• Use manipulatives which allow children to partition into tens and ones
• Base 10 & place value counters can be used to share numbers into equal groups
• Use part-whole models to show a clear written method that matches the concrete representation</td>
</tr>
</table>

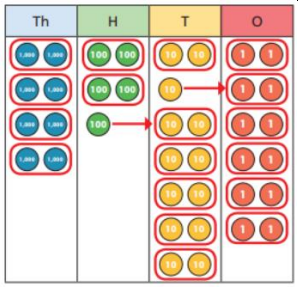
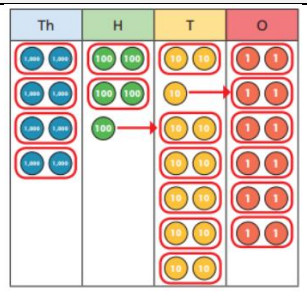
Year 3/4 - Division	Divide 2-digits by 1-digit (sharing with exchange)	
Concrete	**Pictorial**	**Abstract**
  The calculation is shown alongside the use of concrete resources. $52 \div 4 = 13$	  Alongside the use of concrete resources, images and drawings of these resources are used.	$52 \div 4 = 13$
Key skills and concepts	When dividing 2-digits by 1-digit (sharing with exchange): • **Use place value counters or Base 10** to exchange one ten for ten ones when dividing numbers involving an exchange • **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	

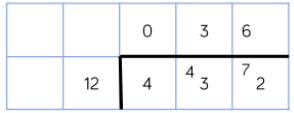
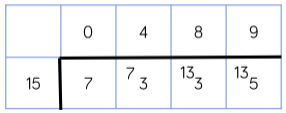
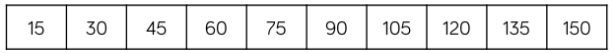
Year 3/4 - Division	Divide 2-digits by 1-digit (sharing with remainders)	
Concrete	**Pictorial**	**Abstract**
 53 ÷ 4 = 13 r1 The calculation is shown alongside the use of concrete resources	  Alongside the use of concrete resources, images and drawings of these resources are used.	53 ÷ 4 = 13 r1
Key skills and concepts	When dividing 2-digits by 1-digit (sharing with remainders): • **Use place value counters or Base 10** to exchange one ten for ten ones when dividing numbers involving an exchange • **Starting with the equipment outside the place value grid** will highlight the remainders as they will be left outside the grid once the equal groups have been made • **Flexible partitioning** in a part-whole model supports this method	

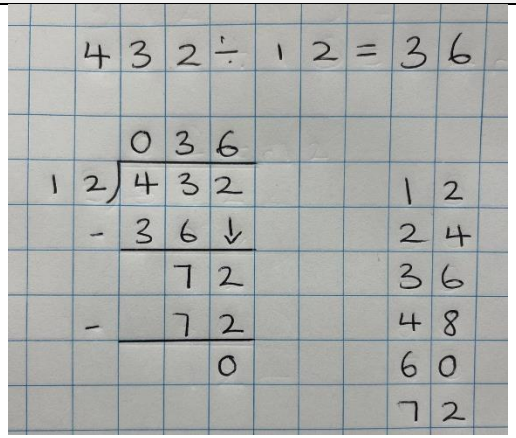
Year 4/5 - Division	Divide 2-digits by 1-digit (grouping)	
Concrete	**Pictorial**	**Abstract**
 The calculation is shown alongside the use of any concrete resources. 	  Alongside the use of concrete resources, images and drawings of these resources are used.	$52 \div 4 = 13$ 
Key skills and concepts	When dividing 2-digits by 1-digit (grouping): • When using the short division method, **use grouping**. Starting with the largest place value, group by the divisor • **Language is important.** Children consider 'How many groups of 4 tens can we make?' and 'How many groups of 4 ones can we make?' • **Remainders** can be seen clearly as they are left ungrouped	

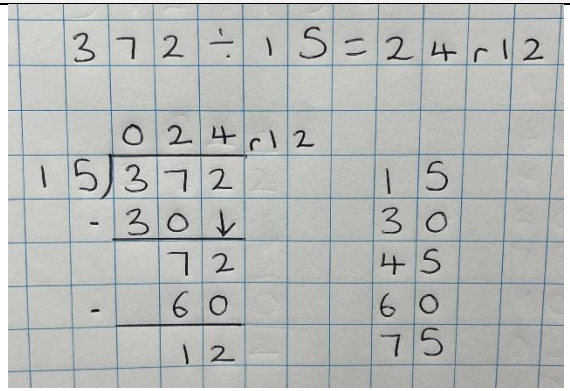
Year 4 - Division	Divide 3-digits by 1-digit (sharing)	
Concrete	**Pictorial**	**Abstract**
  844 ÷ 4 = 211 The calculation can be shown alongside the use of place value counters to link to previous learning.	844 ÷ 4 = 211    Flexible partitioning	844 ÷ 4 = 211
Key skills and concepts	When dividing 3-digits by 1-digit (sharing) • **Place value counters** can be used to share 3-digit numbers into groups • **Start with the equipment outside the place value grid** before sharing the hundreds, tens and ones equally between the rows. This will also help highlight remainders • **Flexible partitioning** in a part-whole model supports this method	

Year 5 - Division	Divide 3-digits by 1-digit (grouping)	
Concrete	**Pictorial**	**Abstract**
  The calculation can be shown alongside the use of place value counters to link to previous learning.	 Alongside the use of concrete resources images and drawings of these resources are used.	 $856 \div 4 = 214$
Key skills and concepts	When dividing 3-digits by 1-digit (grouping) • Children can **continue to use grouping to support their understanding** of short division • **Place value counters and plain counters** can be used on a place value grid to support understanding • Children can **draw their own counters** & group them through a more pictorial approach	

Year 5 - Division	Divide 4-digits by 1-digit (grouping)	
Concrete	**Pictorial**	**Abstract**
 The calculation is shown alongside the use of any concrete resources	 Alongside the use of concrete resources images and drawings of these resources are used.	$8{,}532 \div 2 = 4{,}266$
Key skills and concepts	When dividing 4-digits by 1-digit (grouping): • **Place value counters and plain counters** can be used on a place value grid to support understanding • Children can **draw their own counters** & group them through a more pictorial approach • Encourage children to **move away from the concrete & pictorial when dividing numbers with multiple exchanges**	

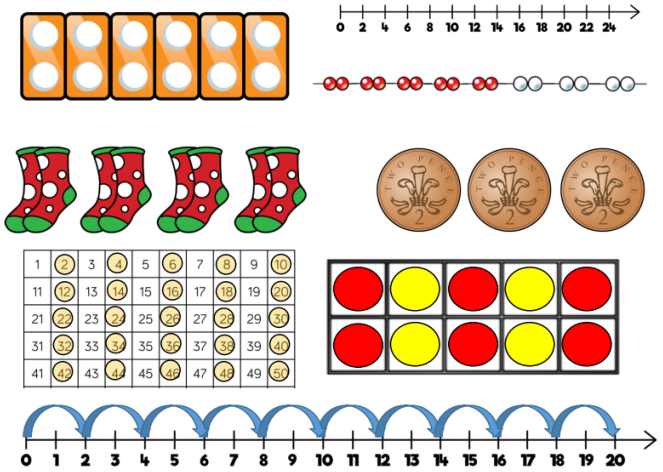
Year 6 - Division	Divide multi-digits by 2-digits (short division)	
Concrete	**Pictorial**	**Abstract**
		 $432 \div 12 = 36$ $7{,}335 \div 15 = 489$  
Key skills and concepts	When dividing multi-digits by 2-digits (short division): • **Written methods are the most accurate & efficient** as concrete and pictorial representations become less effective • Children can **write out multiples** to support calculations with larger remainders • Children can **solve problems** with remainders where the **quotient can be rounded** as appropriate	

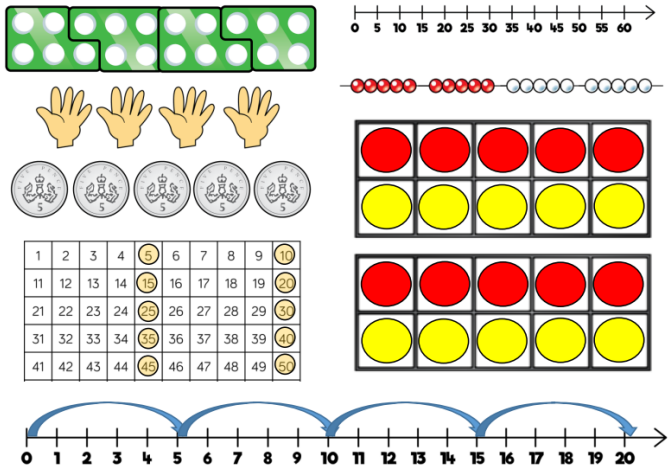
Year 6 - Division	Divide multi-digits by 2-digits (long division)	
Concrete	**Pictorial**	**Abstract**
		
Key skills and concepts	When dividing multi-digits by 2-digits (long division): • **Written methods are the most accurate & efficient** as concrete and pictorial representations become less effective • Children can also **divide by 2-digit** numbers using **long division** • Children can **write out multiples** to support calculations with larger remainders • Children can **solve problems** with remainders where the **quotient can be rounded** as appropriate	

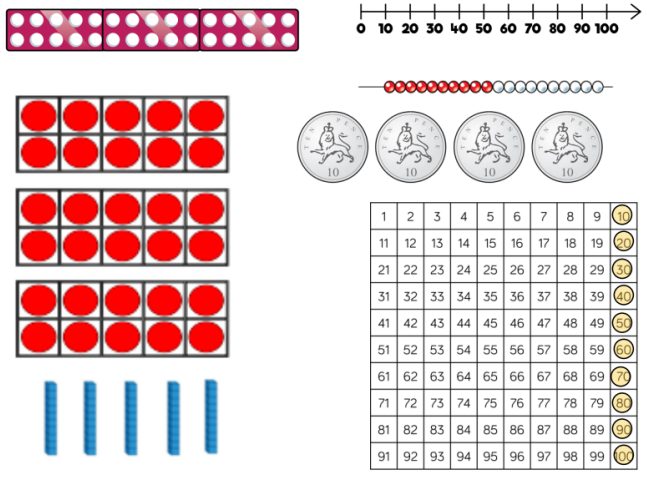
Year 6 - Division	Divide multi-digits by 2-digits (long division with remainders)	
Concrete	**Pictorial**	**Abstract**
		
Key skills and concepts	When dividing multi-digits by 2-digits (long division with remainders): • **Written methods are the most accurate & efficient** as concrete and pictorial representations become less effective • When a remainder is left at the end of the calculation, **either leave it as a remainder or convert it to a fraction**. This will depend on the context of the question • Questions can be answered where the **quotient needs to be rounded** according to the context.	

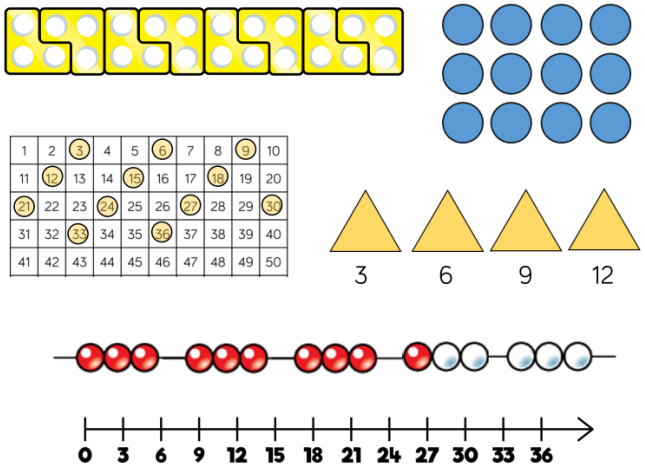
Times tables		
Skill	**Year**	**Representation and models**
Recall and use multipication and division facts for the 2-times table	2	Bar model Number shapes Counters Everyday objects Ten frames Bead strings Number lines Money
Recall and use multipication and division facts for the 5-times table	2	Bar model Number shapes Counters Everyday objects Ten frames Bead strings Number lines Money
Recall and use multipication and division facts for the 10-times table	2	Hundred square Number shapes Counters Money Ten frames Bead strings Number lines Base 10
Recall and use multipication and division facts for the 3-times table	3	Hundred square Number shapes Counters Bead strings Number lines Everyday objects
Recall and use multipication and division facts for the 4-times table	3	Hundred square Number shapes Counters Bead strings Number lines Everyday objects
Recall and use multipication and division facts for the 8-times table	3	Hundred square Number shapes Everyday objects Bead strings Number lines

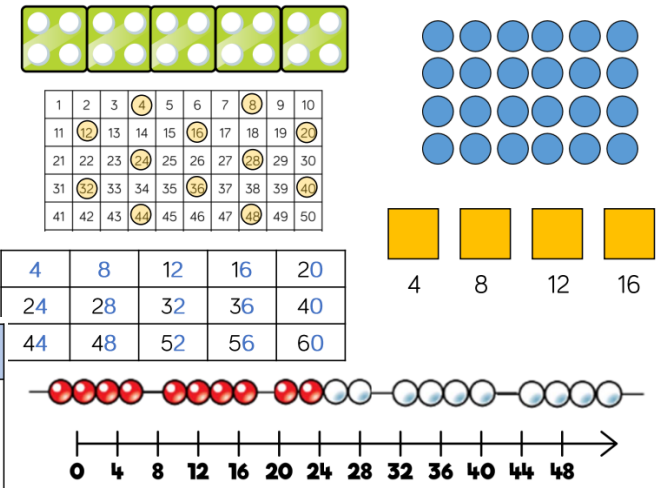
Recall and use multipication and division facts for the 6-times table	4	Hundred square Bead strings Number shapes Number lines Everyday objects
Recall and use multipication and division facts for the 7-times table	4	Hundred square Bead strings Number shapes Number lines
Recall and use multipication and division facts for the 9-times table	4	Hundred square Bead strings Number shapes Number lines
Recall and use multipication and division facts for the 11-times table	4	Hundred square Base 10 Place value counters Number lines
Recall and use multipication and division facts for the 12-times table	4	Hundred square Base 10 Place value counters Number lines

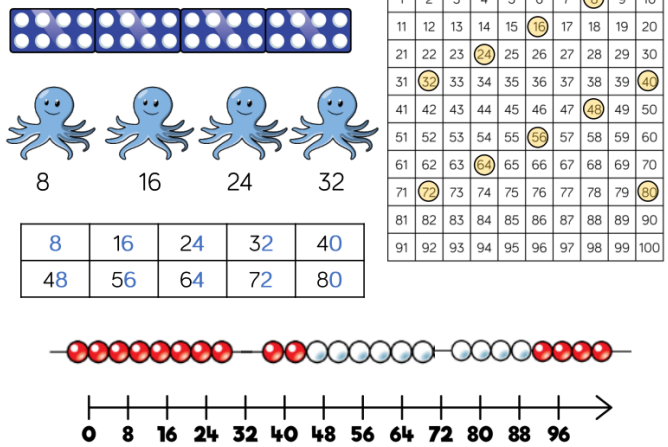
Skill: 2 times table	Year: 2
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the two times table, using concrete manipulatives to support. Notice how all the numbers are even and there is a pattern in the ones. Use different models to develop fluency.

Skill: 5 times table	Year: 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 five times table, using concrete manipulatives to support. Notice the pattern in the ones as well as highlighting the odd, even, odd, even pattern.

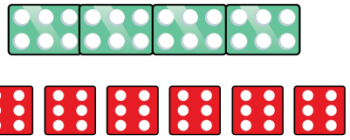
Skill: 10 times table	Year: 2
	Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the ten times table, using concrete manipulatives to support. Notice the pattern in the digits- the ones are always 0, and the tens increase by 1 ten each time.

Skill: 3 times table	Year: 3
	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 three times table using concrete manipulatives to support. Notice the odd, even, odd, even pattern using numbe shapes to support. Highlight the pattern in the ones using a hundred square.

Skill: 4 times table	Year: 3
	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the four times table, using manipulatives to support. Make links to the 2 times table, seeing how each multiple is double the twos. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

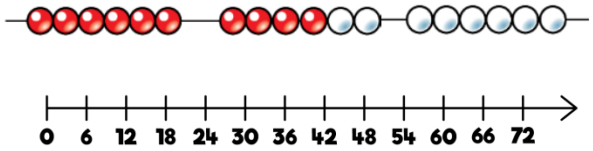
Skill: 8 times table	Year: 3
	Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the eight times table, using manipulatives to support. Make links to the 4 times table, seeing how each multiple is double the fours. Notice the pattern in the ones within each group of five multiples. Highlight that all the multiples are even using number shapes to support.

Skill: 6 times table	Year: 4



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

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

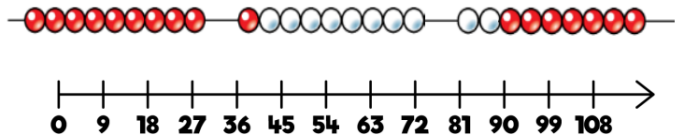


Encourage daily counting in multiples, supported by a number line or a hundred square. Look for patterns in the six times table, using manipulatives to support. Make links to the 3 times table, seeing how each multiple is double the threes. Notice the pattern in the ones within each group of five multiples.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

Skill: 9 times table	Year: 4

9	18	27	36	45
54	63	72	81	90

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



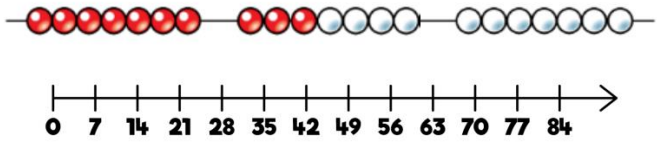
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square. Look for patterns in the nine times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support as well as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

Skill: 7 times table

Year: 4

7	14	21	28	35
42	49	56	63	70

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



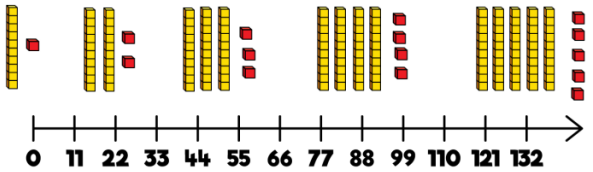
Encourage daily counting in multiples both forwards and backwards, supported by a number line or a hundred square.
The seven times table can be trickier to learn due to the lack of obvious pattern in the numbers, howev they already know several facts due to commutativity. Children can still see the odd,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

Skill: 11 times table

Year: 4

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

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



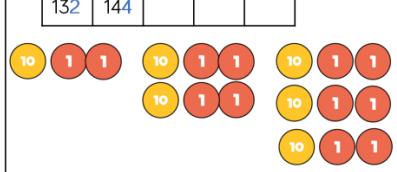
Encourage daily counting in multiples both forwards and backwards. This can be supported using a number line or a hundred square.

Look for patterns in the eleven times table, using concrete manipulatives to support. Notice the pattern in the tens and ones using the hundred square to support. Also consider the pattern after crossing 100

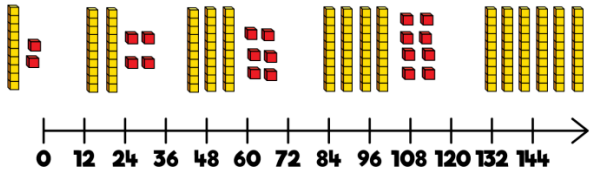
Skill: 12 times table

Year: 4

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



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



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

Glossary

Addend - A number to be added to another.

Aggregation - combining two or more quantities or measures to find a total.

Augmentation - increasing a quantity or measure by another quantity.

Commutative – numbers can be added in any order.

Complement – in addition, a number and its complement make a total e.g. 300 is the complement to 700 to make 1,000

Difference – the numerical difference between two numbers is found by comparing the quantity in each group.

Exchange – Change a number or expression for another of an equal value.

Minuend – A quantity or number from which another is subtracted.

Partitioning – Splitting a number into its component parts.

Reduction – Subtraction as take away.

Subitise – Instantly recognise the number of objects in a small group without needing to count.

Subtrahend - A number to be subtracted from another.

Sum - The result of an addition.

Total – The aggregate or the sum found by addition.