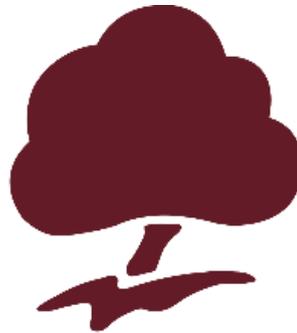

CALCULATION POLICY



**BUTTSBURY
PRIMARY SCHOOL**

AN ACADEMY SCHOOL

Approved by:	Full Trust Board
Last reviewed on:	Autumn 2025
Next review due by:	Autumn 2028

About our Calculation Policy

This policy has been written in response to the National Curriculum September 2014 and aims to ensure consistency in the mathematical written methods and approaches to calculation across the school.

At **Buttsbury Primary School** we believe that children should be introduced to the processes of calculation through practical, oral and mental activities. As children begin to understand the underlying concepts, they develop ways of recording their workings to support their thinking and calculation methods, use particular methods that apply to special cases and learn to interpret and use the signs and symbols involved.

Strategies

Choosing the appropriate strategy and recording jottings in Mathematics is an important tool both for furthering the understanding of ideas and for communicating these ideas to others. The aim is that children use mental methods when appropriate, but for calculations that they cannot do in their heads, they use an efficient written method accurately and with confidence. A useful written method is one that helps children carry out a calculation and can be understood by others. Written methods are complementary to mental methods and should not be seen as separate from them. It is important children acquire secure mental methods of calculation and one efficient written method each for calculation for addition, subtraction, multiplication and division, which they know they can rely on when mental methods are not appropriate.

Progression

The majority of children will move through the policy at broadly the same pace. However, decisions about when to progress should always be based on the security of children's understanding and their readiness to progress to the next stage (stage before age). Children who grasp concepts rapidly should be challenged through being offered deepening problems that are thought stimulating and applicable to real life. However, those who are not sufficiently fluent at a particular stage should not be progressed. It is essential that children's mental methods in all four operations are secure and they are able to use a variety of strategies as appropriate.

This document is organised according to age related expectation; however it may be necessary for teachers to consult with lower year groups for children in order to meet their needs at the stage these children are working at. By the end of Year 6, children are expected to use the formal methods for the four operations.

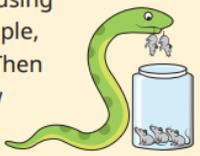
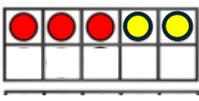
Addition

Reception

- Use addition to understand numbers to 10.

Addition

$$3 + 2 = 5$$

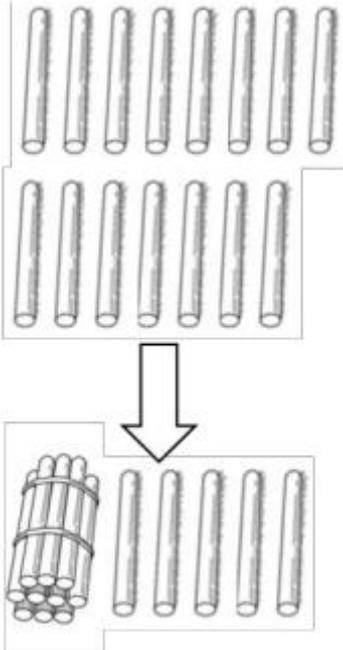
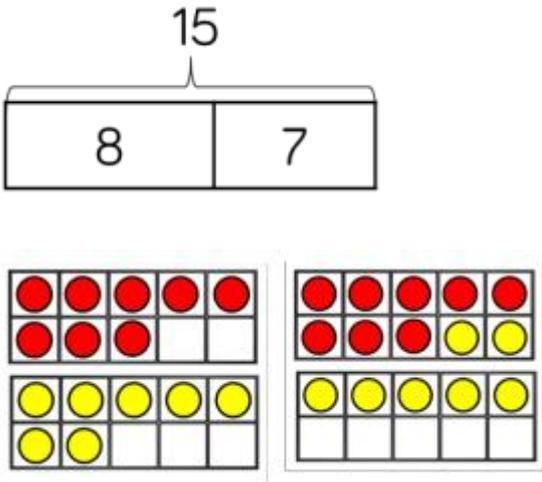
Concrete	Pictorial	Abstract
<p>Read stories such as <i>Mouse Count</i> by Ellen Stoll Walsh with children, which demonstrate adding more than one. Enact 'first, then, now' stories using props linked to the story. For example, "First there were 3 mice in the jar. Then the snake added 2 more mice. How many mice are in the jar now?"</p> 		<ul style="list-style-type: none"> First there were ____ Now there are ____ ____ were added. I added ____

Year 1

- Add one- and two-digit numbers up to 20, using formal written methods.

Addition

$$8 + 7 = 15$$

Concrete	Pictorial	Abstract
		$8 + 7 = 15$

Year 2

- Add one- and two-digit number to 100 and record using formal written methods

Addition
 $7 + 6 + 3 = 16$

Concrete	Pictorial	Abstract
		<p>$7 + 6 + 3 = 16$</p>

Year 3

- Add numbers with up to three digits, using formal written methods of columnar addition

Addition
 $265 + 164 = 429$

Concrete	Pictorial	Abstract														
<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th style="background-color: #f4a460;">Hundreds</th> <th style="background-color: #f4a460;">Tens</th> <th style="background-color: #f4a460;">Ones</th> </tr> </thead> <tbody> <tr> <td>100 100</td> <td>10 10 10 10 10 10</td> <td>1 1 1 1</td> </tr> <tr> <td>100</td> <td>10 10 10 10 10 10</td> <td>1 1 1 1</td> </tr> <tr> <td>100</td> <td></td> <td></td> </tr> </tbody> </table> <p><i>(Note: A green arrow points from the 100 in the bottom row to the 100 in the top row, indicating a carry-over.)</i></p>	Hundreds	Tens	Ones	100 100	10 10 10 10 10 10	1 1 1 1	100	10 10 10 10 10 10	1 1 1 1	100			<p style="text-align: center;">?</p> <table border="1" style="width: 100%; text-align: center;"> <tr> <td style="width: 50%;">265</td> <td style="width: 50%;">164</td> </tr> </table>	265	164	$ \begin{array}{r} 265 \\ + 164 \\ \hline 429 \\ \hline 1 \end{array} $
Hundreds	Tens	Ones														
100 100	10 10 10 10 10 10	1 1 1 1														
100	10 10 10 10 10 10	1 1 1 1														
100																
265	164															

Year 4

- Add numbers with up to 4 digits using the formal written methods of columnar addition where appropriate.

Addition

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

Concrete				Pictorial		Abstract																									
Thousands	Hundreds	Tens	Ones	?																											
				<table border="1" style="margin: auto;"> <tr> <td style="width: 50px; height: 40px;">2,138</td> <td style="width: 50px; height: 40px;">1,378</td> </tr> </table>		2,138	1,378	<table border="1" style="margin: auto;"> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">3</td> <td style="width: 20px; height: 20px;">7</td> <td style="width: 20px; height: 20px;">8</td> </tr> <tr> <td style="width: 20px; height: 20px;">+</td> <td style="width: 20px; height: 20px;">2</td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">4</td> <td style="width: 20px; height: 20px;">8</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;">3</td> <td style="width: 20px; height: 20px;">5</td> <td style="width: 20px; height: 20px;">2</td> <td style="width: 20px; height: 20px;">6</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;"></td> </tr> </table>					1	3	7	8	+	2	1	4	8		3	5	2	6			1	1	
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	3	5	2	6																											
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Year 5 and 6

- Add whole numbers with more than 4 digits, including using formal written methods.

Addition

$$104,328 + 61,1731 = 166,059$$

Concrete						Pictorial		Abstract																																	
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						<table border="1" style="margin: auto;"> <tr> <td style="width: 100px; height: 40px;">104,328</td> <td style="width: 100px; height: 40px;"></td> </tr> <tr> <td style="width: 100px; height: 40px;">61,731</td> <td style="width: 100px; height: 40px;"></td> </tr> </table>		104,328		61,731		<table border="1" style="margin: auto;"> <tr> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">0</td> <td style="width: 20px; height: 20px;">4</td> <td style="width: 20px; height: 20px;">3</td> <td style="width: 20px; height: 20px;">2</td> <td style="width: 20px; height: 20px;">8</td> </tr> <tr> <td style="width: 20px; height: 20px;">+</td> <td style="width: 20px; height: 20px;">6</td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">7</td> <td style="width: 20px; height: 20px;">3</td> <td style="width: 20px; height: 20px;">1</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;">6</td> <td style="width: 20px; height: 20px;">6</td> <td style="width: 20px; height: 20px;">0</td> <td style="width: 20px; height: 20px;">5</td> </tr> <tr> <td style="width: 20px; height: 20px;"></td> <td style="width: 20px; height: 20px;">1</td> <td style="width: 20px; height: 20px;"></td> </tr> </table>						1	0	4	3	2	8	+	6	1	7	3	1		1	6	6	0	5					1	
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Year 6

- Add whole numbers with more than 4 digits, including decimals, including using formal written methods.

Addition

$3.65 + 2.41 = 6.06$

Concrete	Pictorial	Abstract

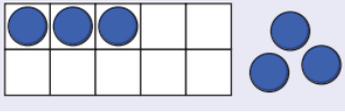
Subtraction

Reception

- Use subtraction to understand numbers to 10. Use subitising to recognise quantities and recall number bonds up to 5.

Subtraction

$$6 - 3 = 3$$

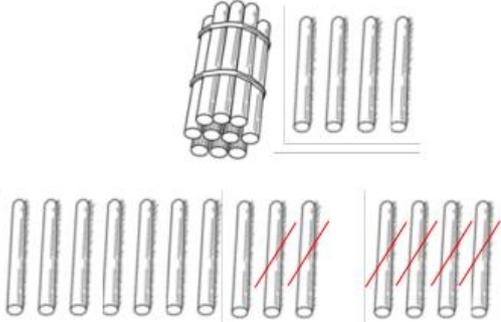
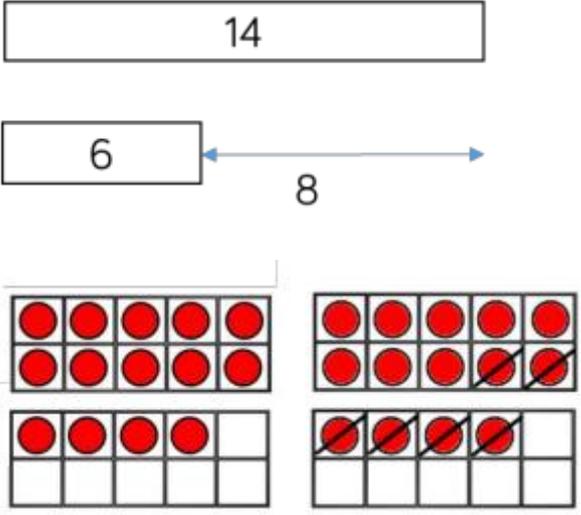
Concrete	Pictorial	Abstract
<p>Ask children to show you 5 fingers and then show you 4 fingers by putting one finger or thumb down. Prompt them to notice that 1 less is the same as taking away one. Repeat this and encourage children to notice how many are left each time.</p> <p>Extend this by showing children a numeral and asking them to represent that number on a ten frame with counters. Then ask them to take away 3 counters. How many are left?</p> <p>Repeat with different numbers.</p>		<ul style="list-style-type: none"> First there were _____ Now there are _____ _____ were taken away. I took away _____ and now there are _____

Year 1

- Subtract one- and two-digit numbers up to 20, using formal written methods.

Subtraction

$$14 - 6 = 8$$

Concrete	Pictorial	Abstract
		$14 - 6 = 8$

Year 2

- Subtract one- and two-digit number to 100 and record using formal written methods.

Subtraction

$$65 - 28 = 37$$

Concrete			Pictorial	Abstract				
<table border="1"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Hundreds	Tens	Ones					$65 - 28 = 37$
Hundreds	Tens	Ones						

Year 3

- Subtract numbers with up to three digits, using formal written methods of columnar subtraction.

Subtraction

$$435 - 273 = 162$$

Concrete			Pictorial	Abstract				
<table border="1"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Hundreds	Tens	Ones					$\begin{array}{r} \overset{3}{4} \overset{1}{3} 5 \\ - 273 \\ \hline 162 \end{array}$
Hundreds	Tens	Ones						

Year 4

Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate.

Subtraction

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

Concrete				Pictorial	Abstract					
<table border="1"> <thead> <tr> <th>Thousands</th> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Thousands	Hundreds	Tens	Ones						
Thousands	Hundreds	Tens	Ones							

Year 5 and 6

- Subtract whole numbers with more than 4 digits, including using formal written methods

Subtraction

$$294,382 - 182,501 = 111,881$$

Concrete						Pictorial	Abstract																										
<table border="1"> <thead> <tr> <th>HTh</th> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	HTh	TTh	Th	H	T	O								<table border="1"> <tbody> <tr> <td>2</td> <td>9</td> <td>3</td> <td>1</td> <td>8</td> <td>2</td> </tr> <tr> <td>-</td> <td>1</td> <td>8</td> <td>2</td> <td>5</td> <td>0</td> <td>1</td> </tr> <tr> <td>1</td> <td>1</td> <td>1</td> <td>8</td> <td>8</td> <td>1</td> </tr> </tbody> </table>	2	9	3	1	8	2	-	1	8	2	5	0	1	1	1	1	8	8	1
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2	9	3	1	8	2																												
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Year 6

- Subtract whole numbers with more than 4 digits, including decimals, including using formal written methods.

Subtraction

$$5.43 - 2.7 = 2.73$$

Concrete	Pictorial	Abstract						
<table border="1"> <thead> <tr> <th>Ones</th> <th>Tenths</th> <th>Hundredths</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	Ones	Tenths	Hundredths					
Ones	Tenths	Hundredths						

Multiplication

Reception

- Double to 10 and make equal groups.

Multiplication

Concrete	Pictorial	Abstract

Year 1 and 2

- Solve one step multiplication problems (using concrete objects, pictorial representations, arrays, repeated addition and known multiplication facts)

Multiplication

$$4 \times 5 = 20$$

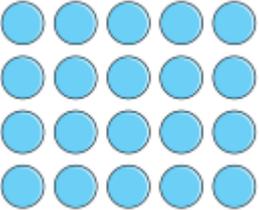
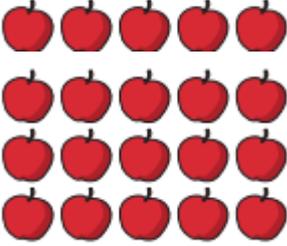
Concrete	Pictorial	Abstract
		<p> $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ $5 \times 4 = 20$ </p>

Year 3

- Multiply using multiplication tables that they know, including 2-digit numbers x 1-digit numbers

Multiplication

$$5 \times 4 = 20$$

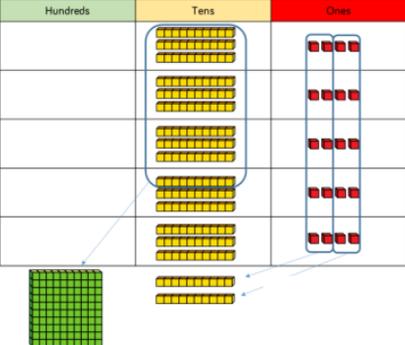
Concrete	Pictorial	Abstract
 <p>Display findings using arrays</p>		$5 \times 4 = 20$

Year 3 and 4

- Multiply 2-digit numbers by 1-digit numbers.

Multiplication

$$34 \times 5 = 170$$

Concrete	Pictorial	Abstract																																			
		<table border="1" style="width: 100%; text-align: center;"> <thead> <tr> <th></th> <th>H</th> <th>T</th> <th>O</th> <th></th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td>3</td> <td>4</td> <td></td> </tr> <tr> <td>x</td> <td></td> <td></td> <td>5</td> <td></td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> <td>(5 × 4)</td> </tr> <tr> <td>+</td> <td>1</td> <td>5</td> <td>0</td> <td>(5 × 30)</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> <td></td> </tr> <tr> <td></td> <td>1</td> <td>7</td> <td>0</td> <td></td> </tr> </tbody> </table>		H	T	O				3	4		x			5						(5 × 4)	+	1	5	0	(5 × 30)							1	7	0	
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				(5 × 4)																																	
+	1	5	0	(5 × 30)																																	
	1	7	0																																		

Year 4

- Multiply 3-digit numbers by 1-digit numbers.

Multiplication

$245 \times 4 = 980$

Concrete	Pictorial	Abstract																								
		<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>4</td> <td>5</td> </tr> <tr> <td>x</td> <td></td> <td></td> <td>4</td> </tr> <tr> <td colspan="4" style="border-top: 1px solid black;"></td> </tr> <tr> <td></td> <td>9</td> <td>8</td> <td>0</td> </tr> <tr> <td></td> <td>1</td> <td>2</td> <td></td> </tr> </tbody> </table>		H	T	O		2	4	5	x			4						9	8	0		1	2	
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x			4																							
	9	8	0																							
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Year 5

- Multiply 4-digit numbers by 1-digit numbers

Multiplication

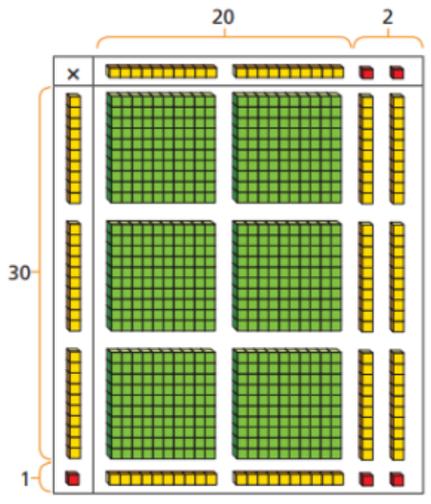
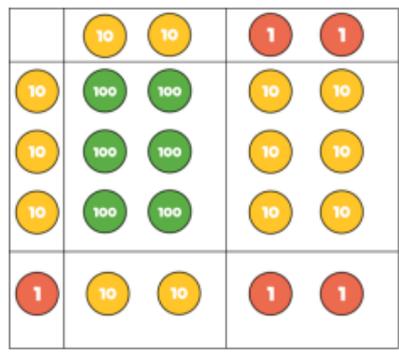
$1,826 \times 3 = 5,478$

Concrete	Pictorial	Abstract																														
		<table border="1" style="margin: auto; border-collapse: collapse;"> <thead> <tr> <th></th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>1</td> <td>8</td> <td>2</td> <td>6</td> </tr> <tr> <td>x</td> <td></td> <td></td> <td></td> <td>3</td> </tr> <tr> <td colspan="5" style="border-top: 1px solid black;"></td> </tr> <tr> <td></td> <td>5</td> <td>4</td> <td>7</td> <td>8</td> </tr> <tr> <td></td> <td>2</td> <td></td> <td>1</td> <td></td> </tr> </tbody> </table>		Th	H	T	O		1	8	2	6	x				3							5	4	7	8		2		1	
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	1	8	2	6																												
x				3																												
	5	4	7	8																												
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- Multiply 2-digit numbers by 2-digit numbers

Multiplication

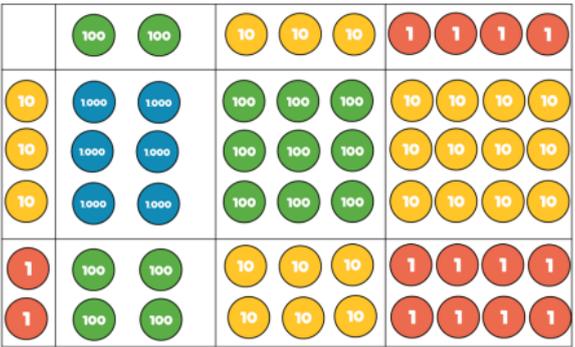
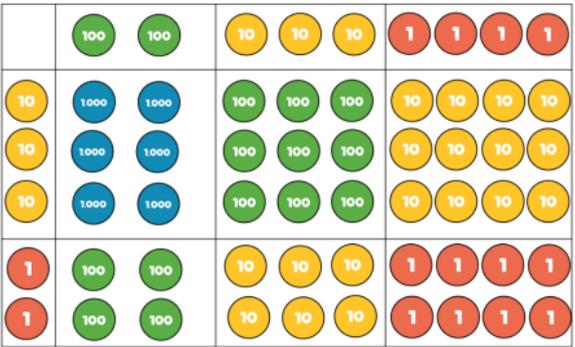
$$22 \times 31 = 682$$

Concrete	Pictorial	Abstract																																	
 <p>(Area model – to support mental calculations)</p>		<p>Method 1:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>×</td><td>20</td><td>2</td></tr> <tr><td>30</td><td>600</td><td>60</td></tr> <tr><td>1</td><td>20</td><td>2</td></tr> </table> <p>Method 2:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr><th></th><th>H</th><th>T</th><th>O</th></tr> </thead> <tbody> <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> </tbody> </table> <p>There is an expectation that all children move onto the Formal Written method (Method 2)</p>	×	20	2	30	600	60	1	20	2		H	T	O			2	2	×		3	1			2	2		6	6	0		6	8	2
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	6	8	2																																

- Multiply 3-digit numbers by 2-digit numbers

Multiplication

$$234 \times 32 = 7,488$$

Concrete	Pictorial	Abstract																																				
		<p>Method 1:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td>×</td><td>200</td><td>30</td><td>4</td></tr> <tr><td>30</td><td>6,000</td><td>900</td><td>120</td></tr> <tr><td>2</td><td>400</td><td>60</td><td>8</td></tr> </table> <p>Method 2:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <thead> <tr><th>Th</th><th>H</th><th>T</th><th>O</th></tr> </thead> <tbody> <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>17</td><td>10</td><td>2</td><td>0</td></tr> <tr><td>7</td><td>4</td><td>8</td><td>8</td></tr> </tbody> </table>	×	200	30	4	30	6,000	900	120	2	400	60	8	Th	H	T	O		2	3	4	×		3	2		4	6	8	17	10	2	0	7	4	8	8
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	4	6	8																																			
17	10	2	0																																			
7	4	8	8																																			

		There is an expectation that all children move onto the Formal Written method (Method 2)
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Year 5 & 6

- Multiply 4-digit numbers by 2-digit numbers

Multiplication

$$2,739 \times 28 = 76,692$$

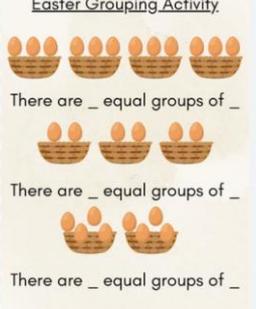
Concrete	Pictorial	Abstract																																								
		<table border="1" data-bbox="1018 663 1366 1104"> <thead> <tr> <th>TTh</th> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td></td> <td>2</td> <td>7</td> <td>3</td> <td>9</td> </tr> <tr> <td>x</td> <td></td> <td></td> <td>2</td> <td>8</td> </tr> <tr> <td>2</td> <td>1</td> <td>9</td> <td>1</td> <td>2</td> </tr> <tr> <td>₂</td> <td>₅</td> <td>₃</td> <td>₇</td> <td></td> </tr> <tr> <td>5</td> <td>4</td> <td>7</td> <td>8</td> <td>0</td> </tr> <tr> <td>₁</td> <td></td> <td>₁</td> <td></td> <td></td> </tr> <tr> <td>7</td> <td>6</td> <td>6</td> <td>9</td> <td>2</td> </tr> </tbody> </table> <p data-bbox="1007 1122 1484 1227">When multiplying 4-digits by 2-digits, children should be confident in using the formal written method.</p>	TTh	Th	H	T	O		2	7	3	9	x			2	8	2	1	9	1	2	₂	₅	₃	₇		5	4	7	8	0	₁		₁			7	6	6	9	2
TTh	Th	H	T	O																																						
	2	7	3	9																																						
x			2	8																																						
2	1	9	1	2																																						
₂	₅	₃	₇																																							
5	4	7	8	0																																						
₁		₁																																								
7	6	6	9	2																																						

Division

Reception

- Make equal groups.

Division

Concrete	Pictorial	Abstract
		

Year 1 and 2

- Solve one step division problems (using concrete objects, pictorial representations, arrays, repeated addition and known multiplication facts)

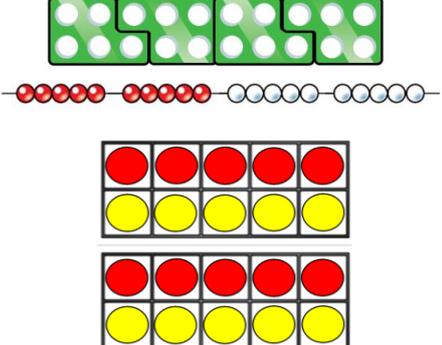
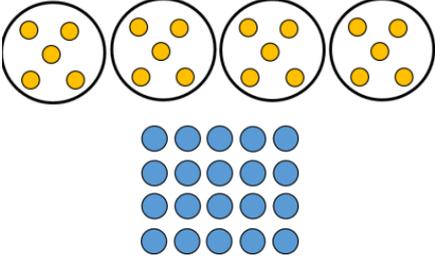
Division (Sharing)

$$20 \div 5 = 4$$

Concrete	Pictorial	Abstract
		$20 \div 5 = 4$ <p>(Division symbol introduced in Year 2)</p>

Division (Grouping)

$$20 \div 5 = 4$$

Concrete	Pictorial	Abstract
		$20 \div 5 = 4$ <p>(Division symbol introduced in Year 2)</p>

Year 3

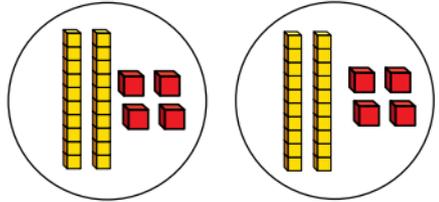
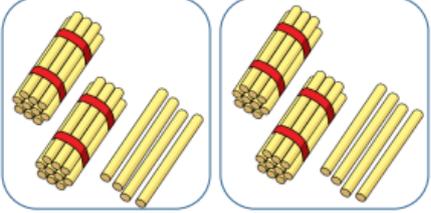
- Divide using multiplication tables that they know.

Division
 $18 \div 3 = 6$

Concrete	Pictorial	Abstract
<p>Arrange the counters in groups of 3 and complete the division.</p> 		$18 \div 3 = 6$

- Divide 2-digits by 1-digit (sharing and no exchange)

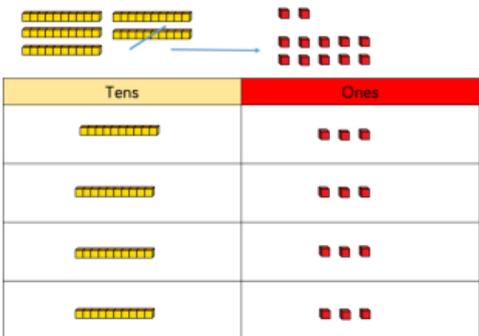
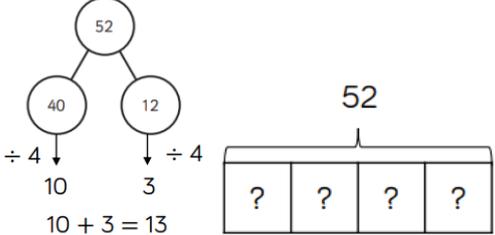
Division
 $48 \div 2 = 24$

Concrete	Pictorial	Abstract						
 <table border="1" data-bbox="103 1288 486 1444"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>10 10</td> <td>1 1 1 1</td> </tr> <tr> <td>10 10</td> <td>1 1 1 1</td> </tr> </tbody> </table>	Tens	Ones	10 10	1 1 1 1	10 10	1 1 1 1	 <pre> graph TD 48((48)) --> 40((40)) 48 --> 8((8)) 40 -- ÷ 2 --> box1[] 8 -- ÷ 2 --> box2[] </pre>	$48 \div 2 = 24$
Tens	Ones							
10 10	1 1 1 1							
10 10	1 1 1 1							

Year 3 and 4

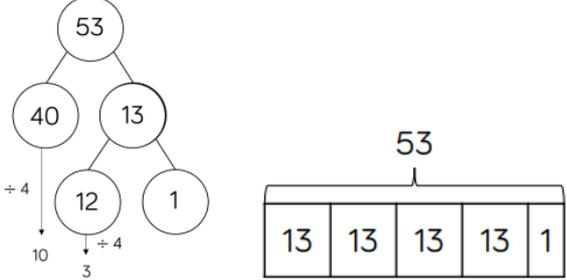
- Divide 2-digits by 1-digit (sharing with exchange)

Division
 $52 \div 4 = 13$

Concrete	Pictorial	Abstract										
		<p>$52 \div 4 = 13$</p> <table border="1" data-bbox="1252 504 1460 593"> <tr> <td></td> <td></td> <td>1</td> <td>3</td> <td></td> </tr> <tr> <td></td> <td>4</td> <td>5</td> <td>12</td> <td></td> </tr> </table>			1	3			4	5	12	
		1	3									
	4	5	12									

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

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

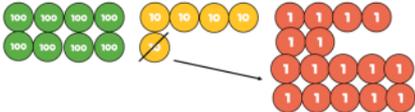
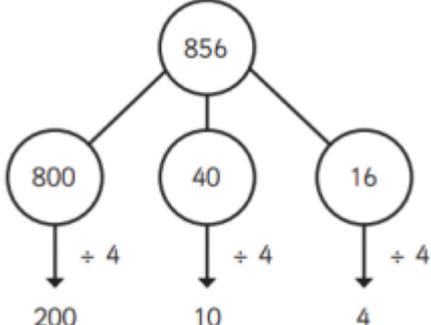
Concrete	Pictorial	Abstract										
		<p>$53 \div 4 = 13 \text{ r } 1$</p> <table border="1" data-bbox="1220 1153 1492 1232"> <tr> <td></td> <td></td> <td>1</td> <td>3</td> <td>r1</td> </tr> <tr> <td></td> <td>4</td> <td>5</td> <td>3</td> <td></td> </tr> </table>			1	3	r1		4	5	3	
		1	3	r1								
	4	5	3									

Year 4

- Divide 3-digit numbers by 1-digit numbers (sharing)

Division

$$856 \div 4 = 214$$

Concrete	Pictorial	Abstract																									
 <table border="1" data-bbox="108 604 523 784"> <thead> <tr> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>100 100</td> <td>10</td> <td>1 1 1 1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1 1 1 1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1 1 1 1</td> </tr> <tr> <td>100 100</td> <td>10</td> <td>1 1 1 1</td> </tr> </tbody> </table>	Hundreds	Tens	Ones	100 100	10	1 1 1 1	100 100	10	1 1 1 1	100 100	10	1 1 1 1	100 100	10	1 1 1 1		$856 \div 4 = 214$ <table border="1" data-bbox="1133 504 1420 577"> <tr> <td></td> <td></td> <td>2</td> <td>1</td> <td>4</td> </tr> <tr> <td></td> <td>4</td> <td>8</td> <td>5</td> <td>6</td> </tr> </table>			2	1	4		4	8	5	6
Hundreds	Tens	Ones																									
100 100	10	1 1 1 1																									
100 100	10	1 1 1 1																									
100 100	10	1 1 1 1																									
100 100	10	1 1 1 1																									
		2	1	4																							
	4	8	5	6																							

Year 5

- Divide 4-digits by 1-digit (grouping)

Division

$$8532 \div 2 = 4266$$

Concrete	Pictorial	Abstract																																						
<table border="1" data-bbox="103 1108 534 1512"> <thead> <tr> <th>Th</th> <th>H</th> <th>T</th> <th>O</th> </tr> </thead> <tbody> <tr> <td>1,000 1,000</td> <td>100 100</td> <td>10 10</td> <td>1 1</td> </tr> <tr> <td>1,000 1,000</td> <td>100 100</td> <td>10 → 1 1</td> <td>1 1</td> </tr> <tr> <td>1,000 1,000</td> <td>100 → 10 10</td> <td>10 10</td> <td>1 1</td> </tr> <tr> <td>1,000 1,000</td> <td></td> <td>10 10</td> <td>1 1</td> </tr> <tr> <td></td> <td></td> <td>10 10</td> <td>1 1</td> </tr> <tr> <td></td> <td></td> <td>10 10</td> <td>1 1</td> </tr> </tbody> </table>	Th	H	T	O	1,000 1,000	100 100	10 10	1 1	1,000 1,000	100 100	10 → 1 1	1 1	1,000 1,000	100 → 10 10	10 10	1 1	1,000 1,000		10 10	1 1			10 10	1 1			10 10	1 1		<table border="1" data-bbox="1157 1108 1476 1243"> <tr> <td></td> <td>4</td> <td>2</td> <td>6</td> <td>6</td> </tr> <tr> <td>2</td> <td>8</td> <td>5</td> <td>13</td> <td>12</td> </tr> </table>		4	2	6	6	2	8	5	13	12
Th	H	T	O																																					
1,000 1,000	100 100	10 10	1 1																																					
1,000 1,000	100 100	10 → 1 1	1 1																																					
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		10 10	1 1																																					
		10 10	1 1																																					
	4	2	6	6																																				
2	8	5	13	12																																				

Year 6

- Divide 4-digit numbers by 2-digit numbers.

Division

$432 \div 12 = 36$ and $7335 \div 15 = 489$

Concrete	Pictorial	Abstract																																								
		<p>3-digits by 2-digits</p> <table border="1" style="margin-left: 20px;"> <tr> <td></td> <td></td> <td>0</td> <td>3</td> <td>6</td> </tr> <tr> <td></td> <td>12</td> <td>4</td> <td>4₃</td> <td>7₂</td> </tr> </table> <p>4-digits by 2-digits</p> <table border="1" style="margin-left: 20px;"> <tr> <td>15</td> <td>30</td> <td>45</td> <td>60</td> <td>75</td> <td>90</td> <td>105</td> <td>120</td> <td>135</td> <td>150</td> </tr> <tr> <td></td> <td>0</td> <td>4</td> <td>8</td> <td>9</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>15</td> <td>7</td> <td>7₃</td> <td>13₃</td> <td>13₅</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> </table>			0	3	6		12	4	4 ₃	7 ₂	15	30	45	60	75	90	105	120	135	150		0	4	8	9						15	7	7 ₃	13 ₃	13 ₅					
		0	3	6																																						
	12	4	4 ₃	7 ₂																																						
15	30	45	60	75	90	105	120	135	150																																	
	0	4	8	9																																						
15	7	7 ₃	13 ₃	13 ₅																																						

- Divide multi-digits by 2-digit numbers (long division – chunking)

Division

$7,335 \div 15 = 489$

Concrete	Pictorial	Abstract																																																
		<table border="1" style="margin-left: 20px;"> <tr> <td></td> <td>0</td> <td>4</td> <td>8</td> <td>9</td> <td></td> </tr> <tr> <td>15</td> <td>7</td> <td>3</td> <td>3</td> <td>5</td> <td></td> </tr> <tr> <td>–</td> <td>6</td> <td>0</td> <td>0</td> <td>0</td> <td>(x400)</td> </tr> <tr> <td></td> <td>1</td> <td>3</td> <td>3</td> <td>5</td> <td></td> </tr> <tr> <td>–</td> <td>1</td> <td>2</td> <td>0</td> <td>0</td> <td>(x80)</td> </tr> <tr> <td></td> <td></td> <td>1</td> <td>3</td> <td>5</td> <td></td> </tr> <tr> <td>–</td> <td></td> <td>1</td> <td>3</td> <td>5</td> <td>(x9)</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>0</td> <td></td> </tr> </table> <div style="margin-left: 20px;"> <p>$1 \times 15 = 15$</p> <p>$2 \times 15 = 30$</p> <p>$3 \times 15 = 45$</p> <p>$4 \times 15 = 60$</p> <p>$5 \times 15 = 75$</p> <p>$10 \times 15 = 150$</p> </div>		0	4	8	9		15	7	3	3	5		–	6	0	0	0	(x400)		1	3	3	5		–	1	2	0	0	(x80)			1	3	5		–		1	3	5	(x9)					0	
	0	4	8	9																																														
15	7	3	3	5																																														
–	6	0	0	0	(x400)																																													
	1	3	3	5																																														
–	1	2	0	0	(x80)																																													
		1	3	5																																														
–		1	3	5	(x9)																																													
				0																																														

- Divide multi-digits by 2-digit numbers (long division – chunking) with remainders

Division

$$372 \div 15 = 24 \text{ r}12 \text{ or } 24\frac{4}{5}$$

Concrete	Pictorial	Abstract																																																																																				
		<table border="1" style="display: inline-table; margin-bottom: 20px;"> <tr><td></td><td></td><td></td><td>2</td><td>4</td><td>r</td><td>1</td><td>2</td></tr> <tr><td>1</td><td>5</td><td>3</td><td>7</td><td>2</td><td></td><td></td><td></td></tr> <tr><td></td><td>-</td><td>3</td><td>0</td><td>0</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td><td></td><td></td><td></td></tr> <tr><td></td><td>-</td><td></td><td>6</td><td>0</td><td></td><td></td><td></td></tr> <tr><td></td><td></td><td></td><td>1</td><td>2</td><td></td><td></td><td></td></tr> </table> <div style="display: inline-block; vertical-align: top; margin-left: 20px;"> $1 \times 15 = 15$ $2 \times 15 = 30$ $3 \times 15 = 45$ $4 \times 15 = 60$ $5 \times 15 = 75$ $10 \times 15 = 150$ </div> <table border="1" style="display: inline-table;"> <tr><td></td><td></td><td></td><td>2</td><td>4</td><td>$\frac{4}{5}$</td></tr> <tr><td>1</td><td>5</td><td>3</td><td>7</td><td>2</td><td></td></tr> <tr><td></td><td>-</td><td>3</td><td>0</td><td>0</td><td></td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td><td></td></tr> <tr><td></td><td>-</td><td></td><td>6</td><td>0</td><td></td></tr> <tr><td></td><td></td><td></td><td>1</td><td>2</td><td></td></tr> </table>				2	4	r	1	2	1	5	3	7	2					-	3	0	0							7	2					-		6	0							1	2							2	4	$\frac{4}{5}$	1	5	3	7	2			-	3	0	0					7	2			-		6	0					1	2	
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