



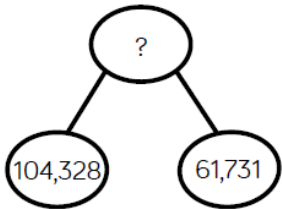
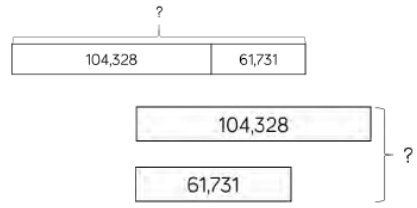
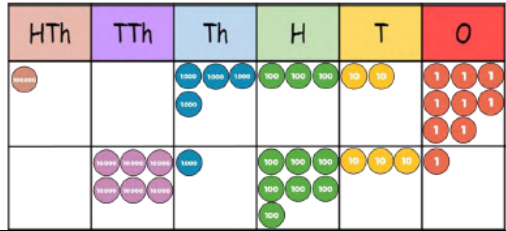
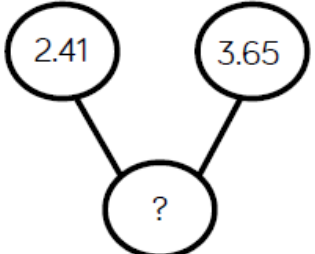
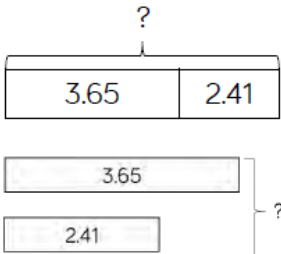
SARUM HALL SCHOOL

MATHS CALCULATION POLICY (Year 5 & 6)

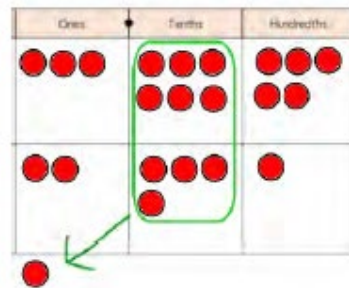
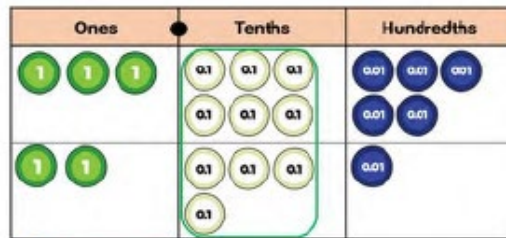
Date: July 2024
Next Review Due: September 2025
Reviewed by: Chen Lee

This policy has been largely adapted from the White Rose Maths Calculation Policy with further material added.
It is a working document and will be revised and amended as necessary.

ADDITION

Skill	Representations and Models	Vocabulary																								
Add numbers with more than 4 digits	<p>Example: $104,328 + 61,731 = 166,059$</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%; text-align: center;"> <p>Part-whole model</p>  </div> <div style="width: 45%; text-align: center;"> <p>Bar Model</p>  </div> </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="width: 45%; text-align: center;"> <p>Place value counters</p>  </div> <div style="width: 45%; text-align: center;"> <p>Column addition</p> <table border="1" style="margin: auto; border-collapse: collapse;"> <tr><td>1</td><td>0</td><td>4</td><td>3</td><td>2</td><td>8</td></tr> <tr><td>+</td><td>6</td><td>1</td><td>7</td><td>3</td><td>1</td></tr> <tr style="border-top: 1px solid black;"><td>1</td><td>6</td><td>6</td><td>0</td><td>5</td><td>9</td></tr> <tr><td colspan="6" style="text-align: center;">1</td></tr> </table> </div> </div>	1	0	4	3	2	8	+	6	1	7	3	1	1	6	6	0	5	9	1						<ul style="list-style-type: none"> • Multiples • Partitioning • Hundreds/Thousands/ Ten thousands/one hundred thousand • Numbers to ten million • Negative numbers / integers • Decimal / point • Round • Place value • Compare • 1000 more • Count in steps • Count in multiples • Estimate • Addition/add • Equals • Facts • Missing number • Number bonds • 2/3/4-digit number • Commutative • Column addition • Order of operations
1	0	4	3	2	8																					
+	6	1	7	3	1																					
1	6	6	0	5	9																					
1																										
Add with up to 3 decimal places	<p>Example: $3.65 + 2.41 = 6.06$</p> <div style="display: flex; justify-content: space-around;"> <div style="width: 45%; text-align: center;"> <p>Part-whole model</p>  </div> <div style="width: 45%; text-align: center;"> <p>Bar Model</p>  </div> </div>																									

Place value counters



Column addition

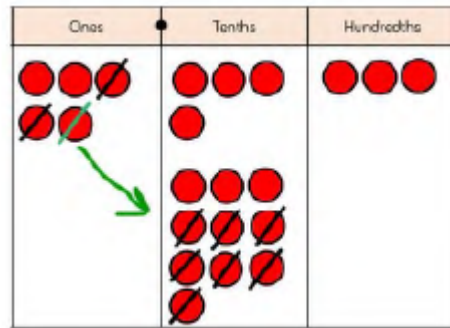
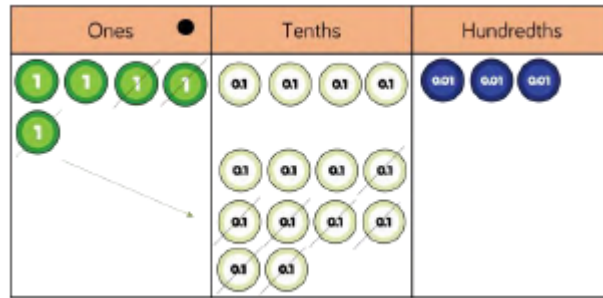
$$\begin{array}{r}
 3.65 \\
 + 2.41 \\
 \hline
 6.06 \\
 \hline
 1
 \end{array}$$

1

SUBTRACTION

Skill	Representations and Models	Vocabulary																				
Subtract numbers with more than 4 digits	Example: $294,382 - 182,501 = 111,881$	<ul style="list-style-type: none"> • Multiples • Partitioning • Hundreds/Thousands/ Ten thousands/one hundred thousand • Numbers to ten million • Negative numbers / integers • Decimal / point • Round • Place value • Compare • 1000 less • Count in steps • Count in multiples • Estimate • Subtraction/subtract • Take away • Equals • Facts • Missing number • Number bonds • 2/3/4-digit number • Column subtraction • Exchange 																				
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Part-whole model </div> <div style="text-align: center;"> Bar Model </div> </div>		<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Place value counters </div> <div style="text-align: center;"> Column subtraction <table border="1" style="border-collapse: collapse; text-align: center; width: 100px;"> <tr> <td></td> <td>2</td> <td>9</td> <td>3</td> <td>¹3</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></td> <td>1</td> <td>1</td> <td>1</td> <td>8</td> <td>8</td> <td>1</td> </tr> </table> </div> </div>		2	9	3	¹ 3	8	2	-	1	8	2	5	0	1		1	1	1	8
	2	9	3	¹ 3	8	2																
-	1	8	2	5	0	1																
	1	1	1	8	8	1																
Subtract with up to 3 decimal places	Example: $5.43 - 2.7 = 2.73$																					
	<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> Part-whole model </div> <div style="text-align: center;"> Bar Model </div> </div>																					

Place value counters

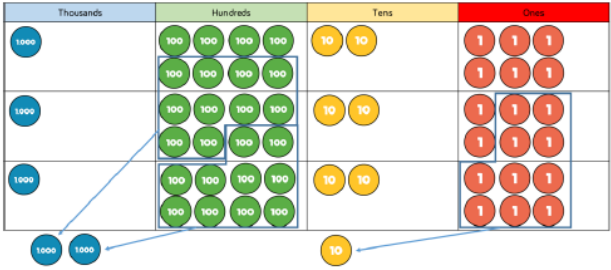
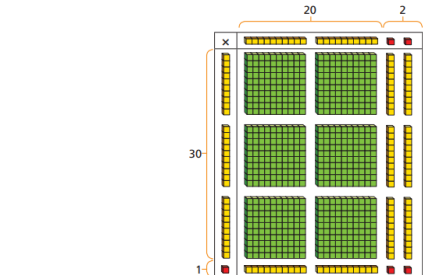


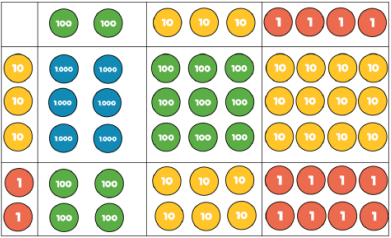
Column subtraction

$$\begin{array}{r}
 4 \quad 1 \\
 5.43 \\
 - 2.7 \\
 \hline
 2.73 \\
 \hline
 \end{array}$$

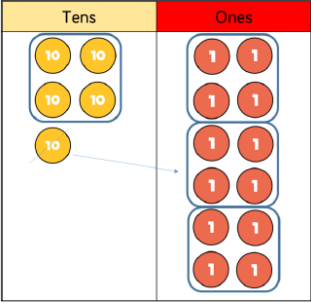
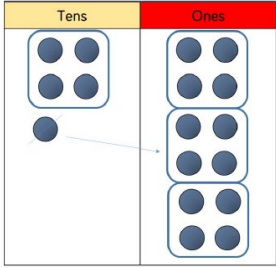
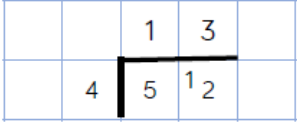
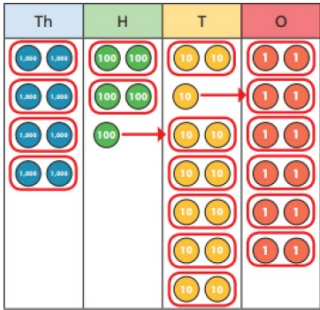
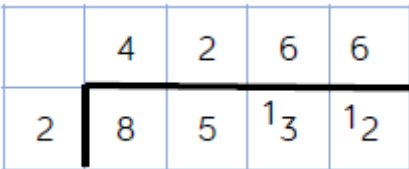
- Order of operations

MULTIPLICATION

Skill	Representations and Models		Vocabulary																														
Multiply 4-digit numbers by 1-digit numbers	<p>Example: $1,826 \times 3 = 5,478$</p> <div style="display: flex; justify-content: space-around;"> <div> <p>Place value counters</p>  </div> <div> <p>Short written method</p> <table border="1"> <tr> <td></td> <td>Th</td> <td>H</td> <td>T</td> <td>O</td> </tr> <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></td> <td colspan="4"><hr/></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> </table> </div> </div>			Th	H	T	O		1	8	2	6	x				3		<hr/>					5	4	7	8		2		1		<ul style="list-style-type: none"> • Partitioning • Hundreds/Thousands/ Ten thousands/one hundred thousand • Numbers to ten million • Negative numbers / integers • Decimal / point • Round • Place value • Estimate • Multiplication • Multiply • Arrays • Times • Common factors • Common multiples • Product • 2/3/4-digit number • Prime numbers • Square numbers • Cube numbers
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	1	8	2	6																													
x				3																													
	<hr/>																																
	5	4	7	8																													
	2		1																														
Multiply 2-digit numbers by 2-digit numbers	<p>Example: $22 \times 31 = 682$</p> <div style="display: flex; justify-content: space-around;"> <div> <p>Base 10</p>  </div> <div> <p>Place value counters</p> <table border="1"> <tr> <td></td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>10</td> <td>100</td> <td>100</td> <td>10</td> <td>10</td> </tr> <tr> <td>1</td> <td>10</td> <td>10</td> <td>1</td> <td>1</td> </tr> </table> </div> </div>			10	10	1	1	10	100	100	10	10	10	100	100	10	10	10	100	100	10	10	1	10	10	1	1						
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	<p style="text-align: center;">Grid method</p> <table border="1" style="margin: 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>	×	20	2	30	600	60	1	20	2	<p style="text-align: center;">Short written method</p> <table border="1" style="margin: auto;"> <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 colspan="4"><hr/></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>		H	T	O			2	2	×		3	1	<hr/>						2	2		6	6	0		6	8	2													
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	6	8	2																																																	
<p>Multiply 3-digit numbers by 2-digit numbers</p>	<p>Example: $234 \times 32 = 7,488$</p>																																																			
<p>Multiply 4-digit numbers by 2-digit numbers</p>	<p style="text-align: center;">Place value counters</p> 	<p style="text-align: center;">Grid method</p> <table border="1" style="margin: 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>	×	200	30	4	30	6,000	900	120	2	400	60	8	<p style="text-align: center;">Short written method</p> <table border="1" style="margin: auto;"> <tr><td></td><td>Th</td><td>H</td><td>T</td><td>O</td></tr> <tr><td></td><td></td><td>2</td><td>3</td><td>4</td></tr> <tr><td>×</td><td></td><td></td><td>3</td><td>2</td></tr> <tr><td colspan="5"><hr/></td></tr> <tr><td></td><td></td><td>4</td><td>6</td><td>8</td></tr> <tr><td>1</td><td>7</td><td>1</td><td>0</td><td>2</td><td>0</td></tr> <tr><td></td><td>7</td><td>4</td><td>8</td><td>8</td></tr> </table>		Th	H	T	O			2	3	4	×			3	2	<hr/>							4	6	8	1	7	1	0	2	0		7	4	8	8	
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	<p>Example: $2,739 \times 28 = 76,692$</p>																																																			
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	7	6	6	9	2																																															

DIVISION

Skill	Representations and Models	Vocabulary
Divide 3-digits by 1-digit (grouping)	<div style="text-align: center; border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Example: $52 \div 4 = 13$ </div> <div style="display: flex; justify-content: space-around;"> <div style="width: 30%; text-align: center;"> <p>Place value counters</p>  </div> <div style="width: 30%; text-align: center;"> <p>Place value grid</p>  </div> <div style="width: 30%; text-align: center;"> <p>Written short division</p>  </div> </div>	<ul style="list-style-type: none"> Partitioning Hundreds/Thousands/ Ten thousands/one hundred thousand Numbers to ten million Negative numbers / integers Decimal / point Round Place value Estimate Division / Divide Share Exchange Remainders Common factors Common multiples Inverse 2/3/4-digit number Prime numbers Square numbers Cube numbers Short/long division Dividend
Divide 4-digits by 1-digit (grouping)	<div style="text-align: center; border: 1px solid black; padding: 5px; margin-bottom: 10px;"> Example: $8,532 \div 2 = 4,266$ </div> <div style="display: flex; justify-content: space-around;"> <div style="width: 50%; text-align: center;"> <p>Place value counters</p>  </div> <div style="width: 50%; text-align: center;"> <p>Written short division</p>  </div> </div>	

<p>Divide multi-digits by 2-digits (short division)</p>	<p style="text-align: center;">432 ÷ 12 = 36</p> <p>Example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <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>			0	3	6		12	4	4 ₃	7 ₂	<p style="text-align: center;">7,335 ÷ 15 = 489</p> <p>Example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td></td><td>15</td><td>7</td><td>7₃</td><td>13₃</td><td>13₅</td></tr> </table>			0	4	8	9		15	7	7 ₃	13 ₃	13 ₅	<ul style="list-style-type: none"> • Divisor Quotient 																																																	
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		0	4	8	9																																																																					
	15	7	7 ₃	13 ₃	13 ₅																																																																					
<p>Divide multi-digits by 2-digits (long division)</p>	<p style="text-align: center;">432 ÷ 12 = 36</p> <p>Example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td></td><td></td><td>0</td><td>3</td><td>6</td></tr> <tr><td>1</td><td>2</td><td>4</td><td>3</td><td>2</td></tr> <tr><td></td><td>-</td><td>3</td><td>6</td><td>0</td></tr> <tr><td></td><td></td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td>-</td><td></td><td>7</td><td>2</td></tr> <tr><td></td><td></td><td></td><td></td><td>0</td></tr> </table> <p style="margin-left: 20px;"> (x30) 12 × 1 = 12 12 × 2 = 24 12 × 3 = 36 12 × 4 = 48 12 × 5 = 60 12 × 6 = 72 12 × 7 = 84 12 × 8 = 96 12 × 9 = 108 12 × 10 = 120 </p> <p style="margin-left: 20px;">(x6)</p>			0	3	6	1	2	4	3	2		-	3	6	0				7	2		-		7	2					0	<p style="text-align: center;">7,335 ÷ 15 = 489</p> <p>Example:</p> <table border="1" style="margin-left: auto; margin-right: auto;"> <tr><td></td><td></td><td>0</td><td>4</td><td>8</td><td>9</td></tr> <tr><td>15</td><td>7</td><td>3</td><td>3</td><td>5</td></tr> <tr><td>-</td><td>6</td><td>0</td><td>0</td><td>0</td></tr> <tr><td></td><td>1</td><td>3</td><td>3</td><td>5</td></tr> <tr><td>-</td><td>1</td><td>2</td><td>0</td><td>0</td></tr> <tr><td></td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td>-</td><td></td><td>1</td><td>3</td><td>5</td></tr> <tr><td></td><td></td><td></td><td></td><td>0</td></tr> </table> <p style="margin-left: 20px;"> 1 × 15 = 15 2 × 15 = 30 3 × 15 = 45 4 × 15 = 60 5 × 15 = 75 10 × 15 = 150 </p> <p style="margin-left: 20px;">(x400)</p> <p style="margin-left: 20px;">(x80)</p> <p style="margin-left: 20px;">(x9)</p>			0	4	8	9	15	7	3	3	5	-	6	0	0	0		1	3	3	5	-	1	2	0	0			1	3	5	-		1	3	5					0	
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