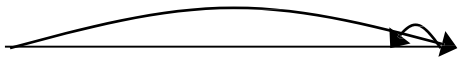


BSB Sanlitun Calculation Policy

YEAR 5


Addition		
Mental Strategies	Informal Written Methods	Formal Written Methods
Recognise the most efficient method to use		
<ul style="list-style-type: none"> • Continue to use models and images when necessary  <ul style="list-style-type: none"> • add numbers mentally with increasingly large numbers • add decimals, including a mix of one-digit whole numbers and tenths, e.g. $1.3 + 0.5$; and complements of 1, e.g. $0.83 + 0.17$ • identify near doubles, using doubles already known, e.g. $1.7 + 1.8$ • add the nearest multiple of 10, 100 or 1000, and adjust • use patterns of similar calculations, e.g. $9 + 7 = 16$ and $0.9 + 0.7 = 1.6$ • use knowledge of the associative law when adding more than two numbers, e.g. $24 + 27 + 16 = (24 + 16) + 27$ $= 40 + 27$ $= 67$ • mentally partition additions into hundreds, tens and ones, then recombine, e.g. $356 + 57 = 356 + 50 + 7$ $= 406 + 7$ $= 413$ • Develop further the relationship between addition and subtraction 	<p>Note: Not used in Year 5</p>	<ul style="list-style-type: none"> • Add whole numbers with more than four digits • Add decimals with up to two decimal places • Estimate and check the answer to a calculation <p>Formal written method of columnar addition</p> $\begin{array}{r} 12\,957 + 14\,635 \\ 12\,957 \\ + 14\,635 \\ \hline 27\,592 \\ \small 1 \quad 1 \end{array}$ $\begin{array}{r} 56.47 + 84.84 \\ 56.47 \\ + 84.86 \\ \hline 141.33 \\ \small 1 \quad 1 \quad 1 \end{array}$ <ul style="list-style-type: none"> • Applying these strategies to decimals (in context of money & measures): $\begin{array}{r} \pounds 23.70 + \pounds 48.56 \\ 23.70 \\ + 48.56 \\ \hline 72.26 \\ \small 1 \quad 1 \end{array}$ <p>Note: position of carry digit</p>

BSB Sanlitun Calculation Policy

Subtraction																										
Mental Strategies	Informal Written Methods	Formal Written Methods																								
Recognise the most efficient method to use																										
<ul style="list-style-type: none"> • Continue to use models and images when necessary • subtract numbers mentally with increasingly large numbers • subtract decimals, including a mix of one-digit whole numbers and tenths, e.g. $1.8 - 0.7$ • Calculate mentally a difference such as $12\,462 - 2300$ by counting up from the smaller to the larger number • Subtract the nearest multiple of 10, 100 or 1000, and adjust • Use patterns of similar calculations, e.g. $16 - 9 = 7$ and $1.6 - 0.9 = 0.7$ • Use mental partitioning, e.g. $456 - 84 = 456 - 80 - 4$ $= 376 - 4$ $= 372$ • Develop further the relationship between addition and subtraction 	<p>Note: Not used in Year 5</p>	<ul style="list-style-type: none"> • Subtract whole numbers with more than four digits • Subtract decimals with up to two decimal places • Estimate and check the answer to a calculation <p>Formal written method of columnar subtraction (decomposition)</p> <div style="text-align: center; margin: 10px 0;"> <table style="margin: auto; border-collapse: collapse;"> <tr> <td></td> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">12</td> <td style="text-align: center;">1</td> <td></td> </tr> <tr> <td></td> <td style="text-align: center;">5</td> <td style="text-align: center;">3</td> <td style="text-align: center;">4</td> <td style="text-align: center;">3</td> <td style="text-align: center;">5</td> </tr> <tr> <td style="text-align: center;">-</td> <td style="text-align: center;">2</td> <td style="text-align: center;">1</td> <td style="text-align: center;">1</td> <td style="text-align: center;">6</td> <td style="text-align: center;">8</td> </tr> <tr style="border-top: 1px solid black;"> <td></td> <td style="text-align: center;">3</td> <td style="text-align: center;">2</td> <td style="text-align: center;">2</td> <td style="text-align: center;">6</td> <td style="text-align: center;">7</td> </tr> </table> </div> <p>Note: position of borrowed digit</p>			3	12	1			5	3	4	3	5	-	2	1	1	6	8		3	2	2	6	7
		3	12	1																						
	5	3	4	3	5																					
-	2	1	1	6	8																					
	3	2	2	6	7																					


BSB Sanlitun Calculation Policy

YEAR 5

Multiplication		
Mental Strategies	Informal Written Methods	Formal Written Methods
Recognise the most appropriate and efficient method to use		
<ul style="list-style-type: none"> • Continue to use models and images when necessary - scaling  • quick recall of the multiplication facts for multiplication tables up to 12×12 • use known multiplication facts to derive related facts involving multiples of 10, 100 and 1000, e.g. $70 \times 80 = 5600$ • divide whole numbers and those involving decimals by 10, 100 and 1000, giving the answers up to three decimal places • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • recognise and use square numbers and cube numbers, and the notation for squared (2) and cubed (3) • continue to recognise commutativity in mental calculations • use related facts and doubling and halving • use closely related facts • use factors, e.g. $9 \times 18 = 9 \times 6 \times 3$ • use knowledge of related facts, e.g. $8 \times 6 = 48$ and $8 \times 600 = 4800$ • understand and use the commutative law, e.g. $14 \times 12 = (2 \times 7) \times 12 = 2 \times (7 \times 12) = 2 \times 84 = 168$ • Continue to use the inverse relationship between multiplication and division 	<ul style="list-style-type: none"> • Short multiplication: - Multiply numbers up to four digits by a one-digit number (HTO \times O/ThHTO \times O) • Estimate and check the answer to a calculation Partitioning Understand and use the distributive law, e.g. partitioning when multiplying a two-digit or three-digit number by a one-digit number, or two two-digit numbers, e.g. $378 \times 4 = (300 \times 4) + (70 \times 4) + (8 \times 4)$ $= 1200 + 280 + 32$ $= 1512$ $78 \times 34 = (78 \times 30) + (78 \times 4)$ $= 2340 + 312$ $= 2652$ Expanded written method $\begin{array}{r} 378 \times 4 \\ 378 \\ \times \quad 4 \\ \hline 32 \quad (8 \times 4) \\ 280 \quad (70 \times 4) \\ 1200 \quad (300 \times 4) \\ \hline 1512 \end{array}$ • Long multiplication: - Multiply numbers up to three digits by a two-digit number (TO \times TO/HTO \times TO) • Estimate and check the answer to a calculation Expanded written method $\begin{array}{r} 78 \\ \times 34 \\ \hline 312 \quad (78 \times 4) \\ 2340 \quad (78 \times 30) \\ \hline 2652 \end{array}$ 	<ul style="list-style-type: none"> • Short multiplication: - Multiply numbers up to four digits by a one-digit number (HTO \times O/ThHTO \times O) • Estimate and check the answer to a calculation Formal written method of short multiplication $\begin{array}{r} 378 \times 4 \\ 378 \\ \times 4 \\ \hline 1512 \end{array}$ Note: position of carry digit • Long multiplication: - Multiply numbers up to four digit by a two-digit number (ThHTO \times TO/HTO \times TO TO \times TO) • Estimate and check the answer to a calculation

Note: carry digit, least significant digit first

BSB Sanlitun Calculation Policy

Division		
Mental Strategies	Informal Written Methods	Formal Written Methods
Recognise the most appropriate and efficient method to use		
<ul style="list-style-type: none"> • Continue to use models and images when necessary - scaling  <ul style="list-style-type: none"> • quick recall of the division facts for multiplication tables up to 12×12 • identify multiples and factors, including finding all factor pairs of a number, and common factors of two numbers • use known division facts to derive related facts involving multiples of 10, 100 and 1000, e.g. $6300 \div 90 = 70$ • divide whole numbers and those involving decimals by 10, 100 and 1000, giving the answers up to three decimal places • Continue to use halving • Understand and use the distributive law, e.g. partitioning when dividing a three-digit number by a one-digit number, $486 \div 9 = (450 \div 9) + (36 \div 9)$ $= 50 + 4$ $= 54$ • Continue to use the inverse relationship between multiplication and division • Relate division to fractions, decimals and percentages 	<p style="background-color: yellow; display: inline-block; padding: 2px 5px;">Note: Not used in Year 5</p>	<ul style="list-style-type: none"> • Short division (including with remainders expressed as a whole number, fraction or decimal depending on the context): - Divide numbers up to 4 digits by a one-digit number (HTO \div O/ThHTO \div O) • Estimate and check the answer to a calculation <p>Formal written method of short division</p> <ul style="list-style-type: none"> - Whole number remainder $279 \div 6$ $\begin{array}{r} 46r3 \\ 6 \overline{) 279} \end{array}$ <p>-Fraction remainder</p> $279 \div 6$ $\begin{array}{r} 46\frac{1}{2} \\ 6 \overline{) 279} \end{array}$ <p>-Decimal remainder</p> $279 \div 6$ $\begin{array}{r} 46.5 \\ 6 \overline{) 279.0} \end{array}$