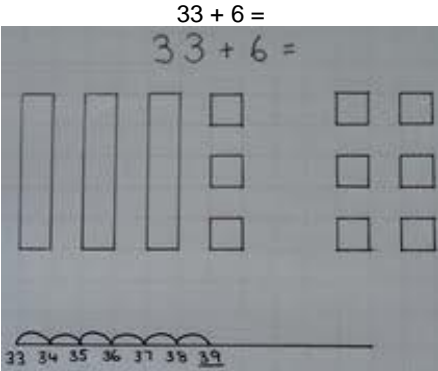
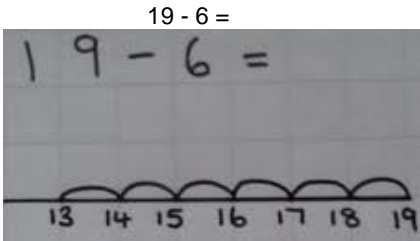

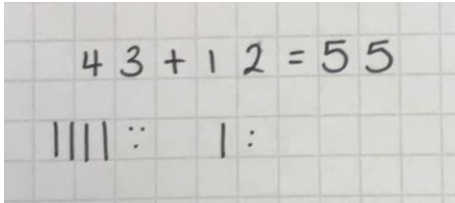
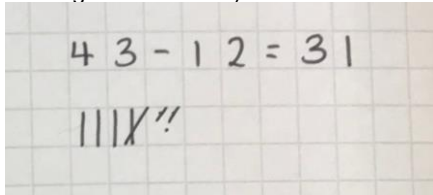
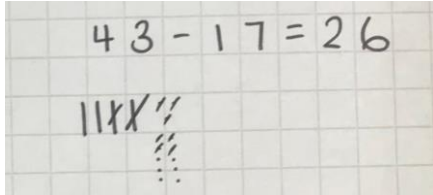
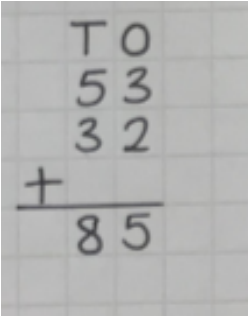
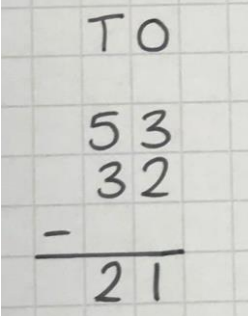
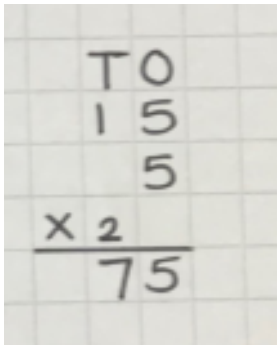
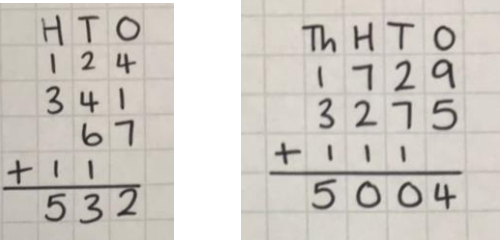
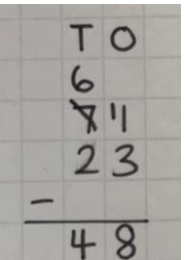
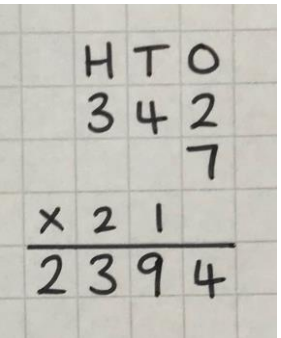
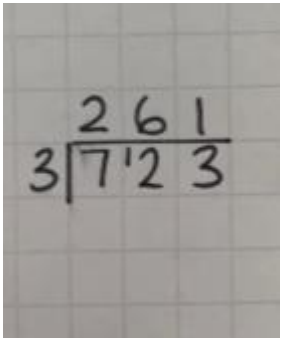
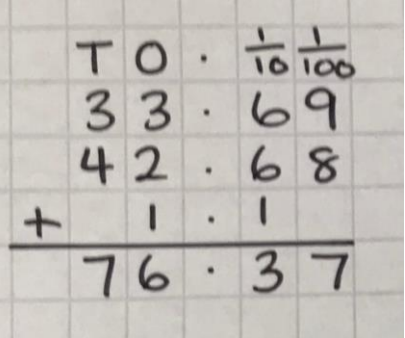
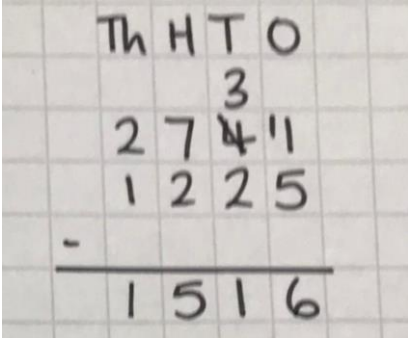
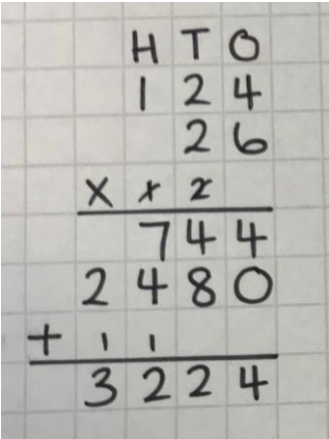
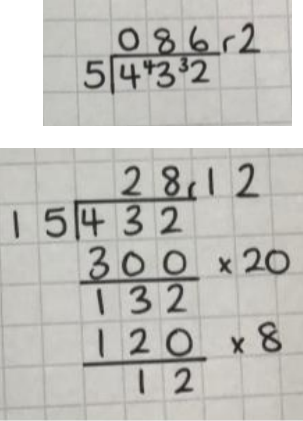
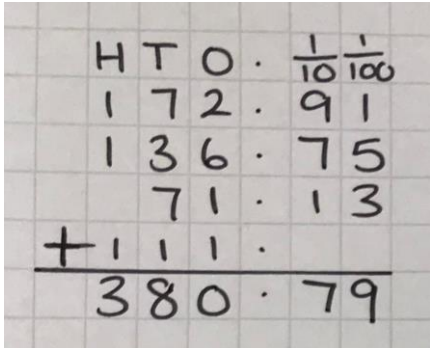
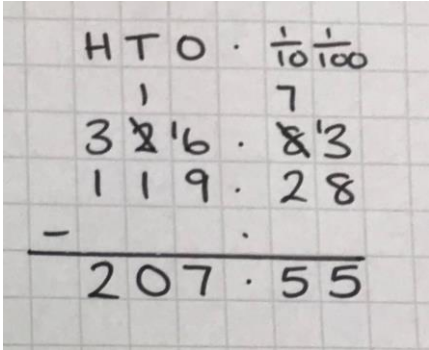
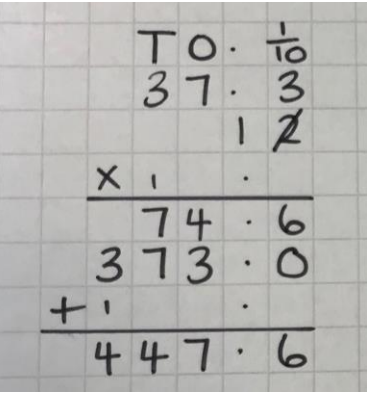


# Willow Fields Primary School

## Calculation Policy – Progression of written methods

Using and applying	Calculating	Addition	Subtraction	Multiplication	Division
<p><b>Reception = ELG 11 Numbers</b> Children count reliably with numbers from 1-20, place them in order and say which number is 1 more or less than a given number. Using quantities and objects, they add and subtract single digit numbers and count on or back to find the answer. They solve problems, including doubling, halving and sharing.</p> <p>Opportunities for children to:</p> <ul style="list-style-type: none"> <li>explore number concepts in everyday play and practical contexts</li> <li>practise and improve their skills in counting</li> <li>calculate simple addition and subtraction problems</li> <li>develop a range of strategies to solve problems including doubling, halving and sharing</li> <li>record their learning using marks and symbols they can interpret</li> </ul>		<ul style="list-style-type: none"> <li>Recite number names to 20</li> <li>Numeral recognition to 20</li> <li>Ordering numbers to 20</li> <li>1 more than a given number</li> <li>Correspondence of irregular groups up to 20</li> <li>Practical adding 2 groups</li> <li>Counting on</li> <li>Correct vocabulary</li> <li>Introduce addition symbol</li> <li>Making number sentences</li> </ul>	<ul style="list-style-type: none"> <li>Recites number names from 20-0</li> <li>Numeral recognition to 20</li> <li>1 less than a given number</li> <li>correspondence of irregular groups up to 20</li> <li>Practical taking away</li> <li>Counting back</li> <li>Correct vocabulary</li> <li>Introduce subtraction symbol</li> <li>Making number sentences</li> </ul>	<ul style="list-style-type: none"> <li>Pairs (practical)</li> <li>Doubling</li> <li>Repeated addition</li> <li>Introduce symbol (if appropriate)</li> <li>Combining groups of 2,5, or 10 (EXCEEDING)</li> </ul>	<ul style="list-style-type: none"> <li>Sharing (fruit, toys etc)</li> <li>Halving</li> <li>Sharing into equal groups (EXCEEDING)</li> </ul>
<p><b>Band 1</b> Solve problems involving counting, adding, subtracting, doubling or halving in the context of numbers, measures or money, for example to 'pay' and 'give change'</p> <p>Describe a puzzle or problem using numbers, practical materials and diagrams; use these to solve the problem and set the solution in the original context</p>	<p><b>Band 1</b> Relate addition to counting on; recognise that addition can be done in any order; use practical and informal written methods to support the addition of a one-digit number or a multiple of 10 to a one-digit or two-digit number</p> <p>Understand subtraction as 'take away' and find a 'difference' by counting up; use practical and informal written methods to support the subtraction of a one-digit number from a one-digit or two-digit number and a multiple of 10 from a two-digit number</p> <p>Use the vocabulary related to addition and subtraction and symbols to describe and record addition and subtraction number sentences</p>	<p><b>Practical addition</b> - using rods and dienes</p>  <p>Using number track to count on</p>	<p><b>Practical subtraction</b> Counting back with a number track</p> 	<ul style="list-style-type: none"> <li>Use of arrays</li> <li>Visual representations of groups e.g. car wheels, animal legs, fingers</li> <li>2 times table</li> </ul> 	<ul style="list-style-type: none"> <li>Practical sharing</li> <li>Practical grouping</li> </ul>
<p><b>Band 2</b> Solve problems involving addition, subtraction, multiplication or division in contexts of numbers, measures or pounds and pence</p> <p>Identify and record the information or calculation needed to solve a puzzle or problem; carry out the steps or calculations and check the solution in the context of the problem</p>	<p><b>Band 2</b> Represent repeated addition and arrays as multiplication, and sharing and repeated subtraction (grouping) as division; use practical and informal written methods and related vocabulary to support multiplication and division, including calculations with remainders</p> <p>Use the symbols +, -, x, ÷ and = to record and interpret number sentences involving all four operations; calculate the value of an unknown in a number sentence (e.g. □ ÷ 2 = 6, 30 - □ = 24)</p>	<p>Empty number line = count on smaller number from largest number 43 + 12 =</p> 	<p>Practical taking away using Dienes (to show exchange Tens / Units)</p>  	<p>Counting sets Repeated addition Making / drawing sets of the same size 2x 5x 10x tables</p>	<p>Practical sharing Practical grouping Using arrays to understand multiplication and division Repeated subtraction (using Grouping ITP)</p>
<p><b>Band 3</b> Solve one-step and two-step problems involving numbers, money or measures, including time, choosing and carrying out appropriate calculations</p> <p>Represent the information in a puzzle or problem using numbers, images or diagrams; use these to find a solution and present it in context, where appropriate using £.p notation or units of measure</p>	<p><b>Band 3</b> Develop and use written methods to record, support or explain addition and subtraction of two-digit and three-digit numbers</p> <p>Use practical and informal written methods to multiply and divide two-digit numbers (e.g. 13 x 3, 50 ÷ 4); round remainders up or down, depending on the context</p> <p>Understand that division is the inverse of multiplication and vice versa; use this to derive and record related multiplication and division number sentences</p>	<p>Children who are confident when partitioning to add on a number line, should begin to use compact column addition. Initially for 2-digit numbers, not crossing a boundary.</p> 	<p>Children should move onto the compact column subtraction. Children to initially subtract numbers which don't require exchanging between columns (borrowing).</p> 	<p>Learn all tables (to 10 x 10 and beyond). Children to start multiplying two digit numbers by 2, 3, 5 and 10.</p> 	<p>Use tables knowledge to support grouping Using Grouping</p>

Using and applying	Calculating	Addition	Subtraction	Multiplication	Division
<p><b>Band 4</b></p> <p>Solve one-step and two-step problems involving numbers, money or measures, including time; choose and carry out appropriate calculations, using calculator methods where appropriate</p> <p>Represent a puzzle or problem using number sentences, statements or diagrams; use these to solve the problem; present and interpret the solution in the context of the problem</p>	<p><b>Band 4</b></p> <p>Refine and use efficient written methods to add and subtract two-digit and three-digit whole numbers and £.p</p> <p>Develop and use written methods to record, support and explain multiplication and division of two-digit numbers by a one-digit number, including division with remainders (e.g. <math>15 \times 9</math>, <math>98 \div 6</math>)</p>	<p>Compact column addition.</p> 	<p>Children then move on to subtracting larger numbers and then exchanging when ready.</p> 	<p>Children to then move onto short multiplication (3-digits multiplied by 1-digit).</p> 	<p>Short division.</p> 
<p><b>Band 5</b></p> <p>Solve one-step and two-step problems involving whole numbers and decimals and all four operations, choosing and using appropriate calculation strategies, including calculator use</p> <p>Represent a puzzle or problem by identifying and recording the information or calculations needed to solve it; find possible solutions and confirm them in the context of the problem</p>	<p><b>Band 5</b></p> <p>Use efficient written methods to add and subtract whole numbers and decimals with up to two places</p> <p>Use understanding of place value to multiply and divide whole numbers and decimals by 10, 100 or 1000</p> <p>Refine and use efficient written methods to multiply and divide HTU <math>\times</math> U, TU <math>\times</math> TU, U.t <math>\times</math> U and HTU <math>\div</math> U</p>	<p>Compact column addition (including decimals).</p> 	<p>Compact column subtraction.</p> 	<p>Long multiplication.</p> 	<p>Short division with remainders Long division with remainders</p> 
<p><b>Band 6</b></p> <p>Solve multi-step problems, and problems involving fractions, decimals and percentages; choose and use appropriate calculation strategies at each stage, including calculator use</p> <p>Represent and interpret sequences, patterns and relationships involving numbers and shapes; suggest and test hypotheses; construct and use simple expressions and formulae in words then symbols (e.g. the cost of <math>c</math> pens at 15 pence each is <math>15c</math> pence)</p>	<p><b>Band 6</b></p> <p>Use efficient written methods to add and subtract integers and decimals, to multiply and divide integers and decimals by a one-digit integer, and to multiply two-digit and three-digit integers by a two-digit integer</p>	<p>Compact column addition (including decimals).</p> 	<p>Compact column subtraction (including decimals).</p> 	<p>Long multiplication and short multiplication including decimals.</p> 	<p>As above Short division with decimals with zero being added as a place holder</p> 