



THE BRITISH SCHOOL
WARSAW
A NORD ANGLIA EDUCATION SCHOOL

Mathematics Calculation Policy (Primary)

2018/2019

About the Policy:

This policy contains the key mental and paper and pencil procedures that will be taught in the school. It has been created to ensure consistency and progression throughout the school.

The policy refers to written methods as well as mental calculations. These methods should be seen as complimentary to each other, as there is a certain amount of mental processing involved in every written method.

Children should be encouraged to see Mathematics as both a written and a spoken language. Teachers will support and guide students through the following stages:

- Developing the use of pictures and a mixture of words and symbols to represent mathematical activities.
- Using standard symbols and conventions
- Use of jottings to aid mental strategies
- Use of pencil and paper procedures
- Use of a calculator

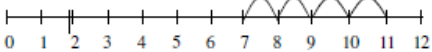
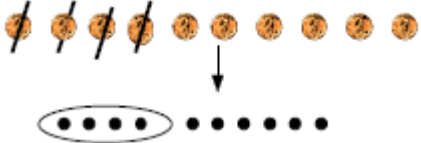

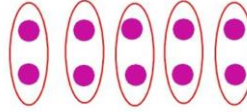
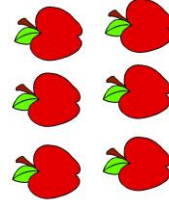

It is important that children do not abandon one stage once another is introduced and should be encouraged to use the method that is the easiest for them.

Children should be encouraged to ask themselves:

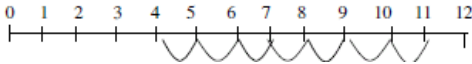
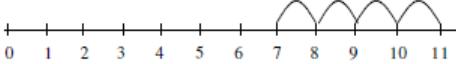
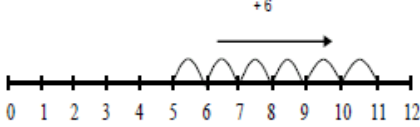
- Can I do this in my head?
- Can I do this in my head using drawings or jottings?
- Do I need to use a pencil and paper procedure?
- Do I need a calculator?

Children joining the school from another school where different written procedures have been taught should not be discouraged from using the method that they know, but it may be necessary for the child to change methods when it is obvious that future teaching will be impacted.

Year 1 – Calculation Policy

Addition	Subtraction	Multiplication	Division
<ul style="list-style-type: none"> Initially use a number track to count on from the largest number: <p style="margin-left: 20px;">$5 + 4 = 9$</p> <div style="margin-left: 20px; border: 1px solid black; padding: 2px; display: inline-block;"> 1 2 3 4 5 6 7 8 9 10 </div> <p style="margin-left: 20px;">“Put your finger on number 5 and count forwards 4. “</p> <ul style="list-style-type: none"> Bead strings can be used to illustrate addition including bridging through 10. Record addition by showing jumps on prepared number lines or moving onto higher numbers with the hundred square: <p style="margin-left: 20px;">$7 + 4 =$</p> <div style="margin-left: 20px;">  </div>	<ul style="list-style-type: none"> Record simple mental subtractions using – and = <p style="margin-left: 20px;">Record simple subtractions using pictures / marks: Understand subtraction as take away. Sam has 10p. I take away 4p from him. How much does he have left?</p> <div style="margin-left: 20px;">  </div> <ul style="list-style-type: none"> Children use a number track to count back from a given number: <div style="margin-left: 20px; border: 1px solid black; padding: 2px; display: inline-block;"> 1 2 3 4 5 6 7 8 9 10 </div> <p style="margin-left: 20px;">$9 - 5 = 4$</p> <p style="margin-left: 20px;">“Put your finger on number 9 and count back 5.</p> <ul style="list-style-type: none"> Bead strings can be used to illustrate addition including bridging through 10. 	<ul style="list-style-type: none"> Children will count repeated groups of the same size in practical contexts. They will use the vocabulary associated with these contexts and solve practical problems that involve combining groups of 2, 5 or 10 eg socks, fingers, cubes <div style="margin-left: 20px;">  </div> <ul style="list-style-type: none"> Use arrays to support early multiplication <div style="margin-left: 20px;">  </div> <p style="margin-left: 20px;">“5 groups of 2” “How many altogether?”</p>	<ul style="list-style-type: none"> Children will start with practical sharing using a variety of resources. <div style="margin-left: 20px;">  </div> <p style="margin-left: 20px;">“Share 6 apples between 2 children.”</p> <ul style="list-style-type: none"> Children will move from sharing to grouping in a practical way and understand equal groups <div style="margin-left: 20px;">  </div> <p style="margin-left: 20px;">‘How many faces altogether? How many groups of 4?’”</p>

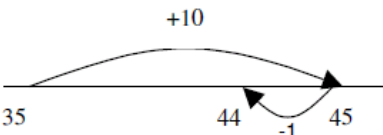
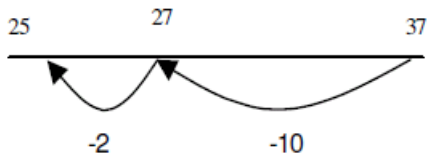
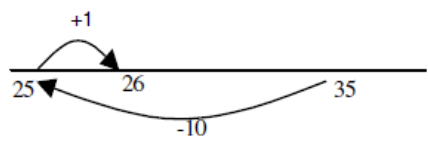
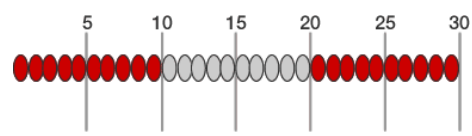
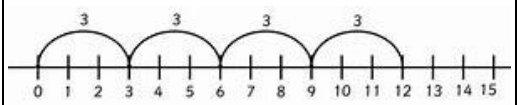
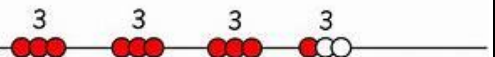
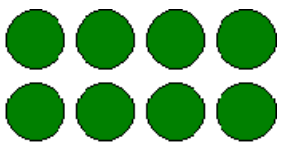
Year 1 Calculation Policy (continued)

Addition	Subtraction	Multiplication	Division
<ul style="list-style-type: none">Children could move into using empty Number lines. Use an empty number line to add 10 to single digit numbers e.g $8 + 10 = 18$	<ul style="list-style-type: none">Use a number line to count back: e.g. $11 - 7 =$  <p>0 1 2 3 4 5 6 7 8 9 10 11 12</p> <ul style="list-style-type: none">Children who are exceeding could move into finding the difference. Find 'a difference' by counting up: e.g. What is the difference between 11 and 7?  <p>0 1 2 3 4 5 6 7 8 9 10 11</p> <p>This will lead to worded problems: I have saved 5p. The socks I want to buy are 11p. How much more do I need to buy the socks?</p>  <p>0 1 2 3 4 5 6 7 8 9 10 11 12</p> <p>Children begin to understand when it is sensible to count back e.g. $18 - 5$ and when to count on e.g. $18 - 13$.</p>		

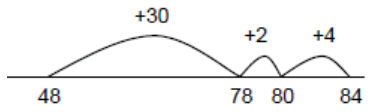
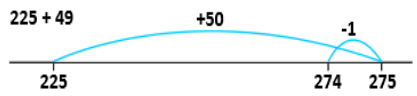

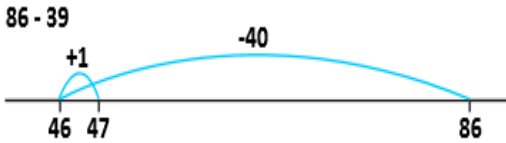
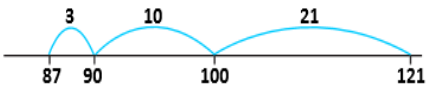

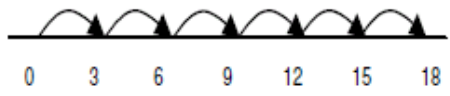
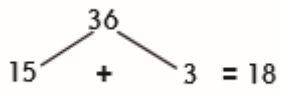
Year 2 – Calculation Policy

Addition	Subtraction	Multiplication	Division																
<ul style="list-style-type: none"> Children will begin to use 'empty number lines' themselves starting with the larger number and counting on. Use a number line or a hundred square. Start with the larger number in an addition where you must bridge through the tens barrier and count on: e.g. $23 + 12 =$ <div style="text-align: center;"> </div> <p>Use a number line to add on multiples of 10. e.g. $23 + 20$</p> <ul style="list-style-type: none"> Complete addition of two digit numbers: e.g. $43 + 13$ by partitioning numbers into tens and ones and then recombining: <div style="text-align: center;"> <table style="border: none;"> <tr> <td style="padding-right: 20px;">$43 + 13 =$</td> <td>T</td> <td>$40 + 10 =$</td> <td>50</td> </tr> <tr> <td></td> <td>U</td> <td>$3 + 3 =$</td> <td>6</td> </tr> <tr> <td></td> <td></td> <td>$50 + 6$</td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td>$= 56$</td> </tr> </table> </div>	$43 + 13 =$	T	$40 + 10 =$	50		U	$3 + 3 =$	6			$50 + 6$					$= 56$	<ul style="list-style-type: none"> Children will begin to use 'empty number lines' themselves. Understand when it is sensible to count back e.g. $18 - 5$ and when to count on e.g. $18 - 13$. Use a number line to find a small difference by counting up. E.g. $42 - 39 = 3$ <div style="text-align: center;"> </div> <ul style="list-style-type: none"> Use a number line or a hundred square to bridge through a multiple of 10 e.g. $22 - 5 = 17$. This leads to children partitioning second number only to subtract: E.g. $37 - 12 = 25$ 	<ul style="list-style-type: none"> Represent problems involving multiplication using pictures and symbols: "There are 3 sweets in one bag. How many sweets are there in 5 bags?" <div style="text-align: center;"> </div> <ul style="list-style-type: none"> Represent multiplication as repeated addition and arrays: <div style="text-align: center;"> $2 \times 4 = 8$ $4 \times 2 = 8$ $4 + 4 = 8$ $2 \text{ lots of } 4 = 8$ $2 + 2 + 2 + 2 = 8 \text{ etc}$ </div> <div style="text-align: center;"> </div> <ul style="list-style-type: none"> Repeated addition can be modeled on a number line: <div style="text-align: center;"> </div>	<ul style="list-style-type: none"> Children will understand the concept of division as sharing and grouping by representing problems using pictures and symbols: <p>"12 children need to get into teams of 4 to play a game. How many teams are there?"</p> <div style="text-align: center;"> </div> <p>"6 sweets are shared between 2 people. How many do they have each?"</p> <div style="text-align: center;"> </div>
$43 + 13 =$	T	$40 + 10 =$	50																
	U	$3 + 3 =$	6																
		$50 + 6$																	
			$= 56$																

Year 2 Calculation Policy (continued)

Addition	Subtraction	Multiplication	Division
<ul style="list-style-type: none"> Refine this to partitioning the second number only to aid mental thinking: $43 + 13 = 43 + 10 + 3$ $= 53 + 3$ $= 56$ Embed the mental strategy to add 9 or 11 just add 10 and adjust by 1: e.g. $35 + 9$ <div style="text-align: center; margin: 10px 0;">  </div> <ul style="list-style-type: none"> This could lead to the introduction of the formal written method: $\begin{array}{r} 63 \\ + 32 \\ \hline 95 \end{array}$	<div style="text-align: center; margin-bottom: 20px;">  </div> <p style="text-align: center;">$37 - 12 = 25$ $37 - 10 = 27$ $27 - 2 = 25$</p> <ul style="list-style-type: none"> Subtract 9 or 11 by taking away 10 and adjusting by 1 E.g. $35 - 9 = 26$ <div style="text-align: center; margin-top: 20px;">  </div>	<p>And on a bead string:</p> <div style="text-align: center; margin: 10px 0;">  </div>	<ul style="list-style-type: none"> $6 \div 2$ can be modelled as repeated subtraction using a number line or bead string: <div style="text-align: center; margin: 10px 0;">  </div> <div style="text-align: center; margin: 10px 0;">  <p style="font-size: small; text-align: center;">The bead bar will help children with interpreting division calculations such as $10 \div 3$ as 'how many 3s make 10?'</p> </div> <ul style="list-style-type: none"> Use arrays to find division facts: <div style="text-align: center; margin: 10px 0;">  </div> <p style="text-align: center; margin-top: 20px;">How many groups of 4? How many groups of 3? 8 shared between 2 people is?</p>

Year 3 – Calculation Policy

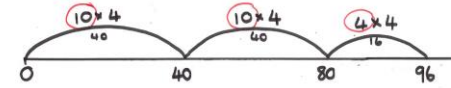
Addition	Subtraction	Multiplication	Division
<ul style="list-style-type: none"> Children will continue to use 'empty number lines' with increasingly large numbers, including compensation where appropriate  <ul style="list-style-type: none"> Add a two-digit number to a near multiple of 10 e.g. $225 + 50$ is the same as $225 + 50 - 1$  <ul style="list-style-type: none"> Introduce the expanded written method: $63 + 32 = 95$ $\begin{array}{r} 60 + 3 \\ + 30 + 2 \\ \hline 90 + 5 = 95 \end{array}$ <ul style="list-style-type: none"> This will lead to the formal written method: $\begin{array}{r} 63 \\ + 32 \\ \hline 95 \end{array}$	<ul style="list-style-type: none"> Use an empty number line or a hundred square to subtract TU from TU) e.g. $97 - 15 = 72$  <ul style="list-style-type: none"> Subtract mentally a near multiple of 10 by taking away 10 and adjusting by 1. E.g. $86 - 39$ is the same as $86 - 40 + 1$  <ul style="list-style-type: none"> Find a large difference between two numbers by counting up from the smaller to the larger e.g. $121 - 87$  <ul style="list-style-type: none"> Introduce the expanded subtraction method: $89 - 57 = 32$ $\begin{array}{r} 80 + 9 \\ - 50 + 7 \\ \hline 30 + 2 = 32 \end{array}$	<ul style="list-style-type: none"> Continue to use repeated addition /arrays to help children understand the concept of multiplication. Number lines and bead strings should be used to aid understanding. (See Year 2) Children should be able to model a multiplication using an array. This will help support the development of the grid method.  $5 \times 3 = 15$ $3 \times 5 = 15$ <ul style="list-style-type: none"> Use partitioning to multiply larger numbers: $38 \times 5 = (30 \times 5) + (8 \times 5)$ $= 150 + 40$ $= 190$ <ul style="list-style-type: none"> Build on partitioning to develop grid method multiplication with a 2-digit number multiplied by a 1-digit number: 	<ul style="list-style-type: none"> Ensure that children are confident with the methods outlined in the previous years before moving on. Continue to use practical resources, pictures, diagrams, and number lines. Use a number line to model grouping. E.g. How many 3's make 18? (6)  <ul style="list-style-type: none"> Also understand division as sharing (repeated subtraction) Children should also move onto calculations using remainders. Children should use partitioning to find halves of even numbers to 100.  $15 + 11 + 10 + 10 = 36$ $5 + 11 + 10 + 10 = 18$

Year 3 – Calculation Policy (continued)

Addition	Subtraction	Multiplication	Division						
<ul style="list-style-type: none"> When children are ready, extend to the formal method where it is necessary to 'carry over'. 	<ul style="list-style-type: none"> This will lead to the formal written method: $\begin{array}{r} 89 \\ - 57 \\ \hline 32 \end{array}$ When children are ready, extend to the formal method where it is necessary to 'exchange'. 	<p>$23 \times 4 = 92$</p> <table border="1" data-bbox="1182 272 1417 384"> <tr> <td>x</td> <td>20</td> <td>3</td> </tr> <tr> <td>4</td> <td>80</td> <td>12</td> </tr> </table> <p>$80 + 12 = 92$</p> <ul style="list-style-type: none"> This will lead into expanded short multiplication: $13 \times 8 = 104$ $\begin{array}{r} 13 \\ \times 8 \\ \hline 24 \quad (3 \times 8) \\ +80 \quad (10 \times 8) \\ \hline 104 \end{array}$ Formal short multiplication: $\begin{array}{r} 13 \\ \times 8 \\ \hline 104 \end{array}$ 	x	20	3	4	80	12	
x	20	3							
4	80	12							

Year 4 Calculation Policy

Year 4 Calculation Policy (continued)

Addition	Subtraction	Multiplication	Division
<p>Add the nearest multiple of 10 and then adjust e.g. $63 + 29$ is the same as $63 + 30 - 1$</p> <p>Extended column method will be introduced.</p> <p>e.g.</p> $\begin{array}{r} 48 \\ +16 \\ \hline 14 \text{ (representing } 8 + 6) \\ \underline{50} \text{ (representing } 40 + 10) \\ 64 \end{array}$ <p>With this method units are to be added first which will continue with the standard written method.</p>	<p>Record mental subtractions using $-$ and $=$</p> <p>Be able to complete missing number sentences: e.g. $100 - 17 = \underline{\quad}$</p> $\underline{\quad} - 15 = 50$ $\underline{\quad} - \underline{\quad} = 20$ $100 - \underline{\quad} - \underline{\quad} = 10$ <p>Find a small difference by counting up: e.g. $503 - 496 = 7$</p> <p>Subtract mentally a near multiple of 10 by taking away multiple of 10 and adjusting by 1 E.g. $78 - 49$ is the same as $78 - 50 + 1$</p> <p>Standard written method introducing decomposition extending to H,T,U.</p> <p>e.g.</p> $\begin{array}{r} 3418 \\ -29 \\ \hline 19 \end{array}$	<p>Practise all multiplication tables. Learn 6x, 7x, 9x 11x and 12x multiplication tables.</p> <p>Identify the doubles of two-digit numbers, use these to calculate mentally doubles of multiples of 10 and 100 and derive the corresponding halves.</p> <p>Derive and recall multiplication facts up to 10×10 and the related division facts.</p> <p>Teach children grid method to complete TU X U Extend into HTU X U</p> <p>e.g. $23 \times 7 = 161$</p> $\begin{array}{r l l} \times & 20 & 3 \\ \hline 7 & 140 & 21 \end{array}$ <p>Extend to HTU X U e.g. 153×4</p>	<p>Introduce 'chunking method' (repeated subtraction) on a number line. Begin with TU \div U and include remainders:</p> <p>E.g.</p> <div style="border: 1px solid black; padding: 10px; margin: 10px 0;"> <p style="text-align: center;">division by chunking on a number line</p> <p style="text-align: center;">$96 \div 4 = 24$</p>  <p style="text-align: center;">How many lots of 4 altogether? $10 + 10 + 4 = 24$</p> </div> <p>Extend to HTU \div U</p>

Addition	Subtraction	Multiplication	Division
<p>Expand to ThHTU + TU Standard written method.g.</p> $\begin{array}{r} 1435 \\ + \underline{24} \\ \hline 1459 \end{array}$ <p>Leading to 'carrying' below the line.</p> <p>e.g. 625</p> $\begin{array}{r} 625 \\ + 48 \\ \hline 673 \\ 1 \end{array}$ <p>Extend to use of decimals in context, for example money. e.g. *know that decimal point must be in line</p> $\begin{array}{r} \pounds 4.21 \\ + \pounds 3.87 \\ \hline \pounds 8.08 \\ 1 \end{array}$	<p>Demonstrate the place value related process that is involved here.</p> <p>e.g. $48 - 29 = 19$</p> $\begin{array}{r} 48 \quad 40 + 8 \quad 30 + 18 \\ - 29 \quad - 20 + 9 \quad \underline{- 20 + 9} \\ \hline 10 + 9 = 19 \end{array}$ <p>e.g. $345 - 237 = 108$</p> $\begin{array}{r} 345 \quad 300 + 40 + 5 \quad 300 + 30 + 15 \\ - 237 \quad - 200 + 30 + 7 \quad \underline{- 200 + 30 + 7} \\ \hline 100 + 0 + 8 \\ = 108 \end{array}$ <p>In decomposition use the word 'exchange' NOT borrow.</p> <p>Extend to decimals in context of money.</p> <p>e.g. *know that decimal point must be in line</p> $\begin{array}{r} \pounds 8.98 \\ - \pounds 4.35 \\ \hline \pounds 4.63 \end{array}$		

Year 5 – Calculation Policy

Addition	Subtraction	Multiplication	Division									
<p>Be able to complete number sentences where a missing number is shown by a symbol. E.g. $154 + \underline{\quad} = 200$ $\underline{\quad} + 14 = 100$ $10 + \underline{\quad} + 50 = 500$ $\underline{\quad} + \underline{\quad} + \underline{\quad} = 1000$ $347 + \underline{\quad} = 1047$</p> <p>Add the <u>nearest multiple of 10 or 100</u> and then adjust e.g. $458 + 79$ is the same as $458 + 80 - 1$</p> <p>Standard written method as in Year 4 Th,H,T,U. Include multiple 'carrying'. e.g. Th H T U</p> $\begin{array}{r} 7648 \\ +1486 \\ \hline 9134 \\ 111 \end{array}$	<p>Record mental subtractions using – and = Be able to complete missing number sentences: e.g. $1000 - 170 =$ $\underline{\quad} - 150 = 500$ $\underline{\quad} - \underline{\quad} = 200$ $1000 - \underline{\quad} - \underline{\quad} = 190$</p> <p>Find a small difference by counting up: e.g. $8006 - 2993 = 5013$</p> <p>Subtract mentally a near multiple of 10 / 100 by taking away multiple of 10 / 100 and adjusting by 1 e.g. $781 - 199$ is the same as $781 - 200 + 1$</p>	<p>Practise times table up to 12 x 12.</p> <p>Identify the doubles of two-digit numbers, use these to calculate mentally doubles of multiples of 10 and 100 and derive the corresponding halves.</p> <p>Derive and recall multiplication facts up to 12 x 12 and the related division facts.</p> <p>Extend use of grid method to HTU x U and TU x TU. E.g. $35 \times 26 = 910$</p> <table border="1" data-bbox="1176 1061 1458 1182"> <tbody> <tr> <td>x</td> <td>30</td> <td>5</td> </tr> <tr> <td>20</td> <td>600</td> <td>100</td> </tr> <tr> <td>6</td> <td>180</td> <td>30</td> </tr> </tbody> </table> <p>$600 + 100 = 700$ $180 + 30 = 210$ $700 + 210 = 910$</p> <p>Extend Year 4 grid method to expanded standard column form to TU x TU and ThHTU x TU</p>	x	30	5	20	600	100	6	180	30	<p>Children will use the standard short written method of division: Include ThHTU ÷ U</p> <p>e.g. $196 \div 6 = 32 \text{ r } 4$</p> $\begin{array}{r} 32 \text{ r } 4 \\ 6 \overline{)196} \end{array}$ <p>e.g. $14.2 \div 3$</p>
x	30	5										
20	600	100										
6	180	30										

Year 5 Calculation Policy (continued)

Addition	Subtraction	Multiplication	Division
<p>Use decimals in context, for example money / measurements. e.g. *know that decimal point must be in line</p> $\begin{array}{r} \pounds 4.21 \\ + \pounds 3.87 \\ \hline \pounds 8.08 \\ 1 \end{array}$	<p>In standard written column method use the word 'exchange' NOT borrow.</p> <p>Use the standard written column method up to numbers with 4 digits including decimals:</p> <p>E.g. 231219</p> $\begin{array}{r} 231219 \\ - 1243 \\ \hline 1976 \end{array}$ <p>Extend this to working with decimals and exchanging tens etc.</p> $\begin{array}{r} \pounds 8.85 \\ - \pounds 4.38 \\ \hline \pounds 4.57 \end{array}$	<p>Standard short multiplication with carrying</p> <p>e.g. $23 \quad 346$</p> $\begin{array}{r} \times 8 \quad \times 9 \\ 184 \quad 3114 \\ 2 \quad 45 \end{array}$ <p>*To include decimals with one decimal point e.g. 12.5×2 (refer to expanded method first if necessary – leading to short method with carrying)</p> <p>You could support your child further by helping them to consolidate all multiplication tables/facts up to 12×12.</p>	

Year 6 – Calculation Policy

Addition	Subtraction	Multiplication	Division																																																																																	
<p>Children should extend the carrying method to number with any number of digits.</p> $\begin{array}{r} 7648 \\ + 1486 \\ \hline 9134 \end{array}$ $\begin{array}{r} 6584 \\ + 5848 \\ \hline 12432 \end{array}$ $\begin{array}{r} 42 \\ 6432 \\ 786 \\ 3 \\ + 4681 \\ \hline 11944 \end{array}$ <p>Using similar methods, children will add several numbers with different numbers of digits;</p> <ul style="list-style-type: none"> ✓ begin to add two or more decimal fractions with up to four digits and either one or two decimal places; ✓ know that decimal points should line up under each other, particularly when adding or subtracting mixed amounts, e.g. $401.2 + 26.85 + 0.71$. 	<p>Decomposition</p> $\begin{array}{r} 3131 \\ \cancel{6467} \\ - 2684 \\ \hline 3783 \end{array}$ <p>Children should:</p> <ul style="list-style-type: none"> ✓ be able to subtract numbers with different numbers of digits; ✓ be able to subtract two or more decimal fractions with up to three digits and either one or two decimal places; ✓ know that decimal points should line up under each other. <p>Where the numbers are involved in the calculation are close together or near to multiples of 10, 100 etc counting on using a number line should be used.</p> <p>$3002 - 1997 = 1005$</p>	<p>ThHTU x U (Short multiplication – multiplication by a single digit) 4346×8</p> <p>Children will approximate first 4346×8 is approximately $4346 \times 10 = 43460$</p> <table style="margin-left: 20px;"> <tr> <td>x</td> <td>4000</td> <td>300</td> <td>40</td> <td>6</td> <td></td> </tr> <tr> <td>8</td> <td>32000</td> <td>2400</td> <td>320</td> <td>48</td> <td>32000</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+ 2400</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+ 320</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td>+ 48</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td></td> <td><u>34768</u></td> </tr> </table> <p>HTU x TU (Long multiplication – multiplication by more than a single digit) 372×24</p> <p>Children will approximate first 372×24 is approximately $400 \times 25 = 10000$</p> <table style="margin-left: 20px;"> <tr> <td>x</td> <td>300</td> <td>70</td> <td>2</td> <td></td> </tr> <tr> <td>20</td> <td>6000</td> <td>1400</td> <td>40</td> <td>6000</td> </tr> <tr> <td>4</td> <td>1200</td> <td>280</td> <td>8</td> <td>+ 1400</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>+ 1200</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>+ 280</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>+ 40</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>+ 8</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td><u>8928</u></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> <td>1</td> </tr> </table>	x	4000	300	40	6		8	32000	2400	320	48	32000						+ 2400						+ 320						+ 48						<u>34768</u>	x	300	70	2		20	6000	1400	40	6000	4	1200	280	8	+ 1400					+ 1200					+ 280					+ 40					+ 8					<u>8928</u>					1	<p>Children will continue to use written methods to solve short division $TU \div U$ and $HTU \div U$.</p> <p>Long division $ThHTU \div TU$</p> <p>$972 \div 36$</p> <p>Any remainders should be shown as fractions, i.e. if the children were dividing 32 by 10, the answer should be shown as $3 \frac{2}{10}$ which could then be written as $3 \frac{1}{5}$ in its lowest terms.</p>
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Year 6 Calculation policy (continued)

Addition	Subtraction	Multiplication	Division
	<p>e.g.</p> $\begin{array}{r} 31214.8910 \\ - 7.25 \\ \hline 3117.65 \end{array}$ <p>known that extra 0's may need to fill in spaces</p> <p>*know that decimal point must be in line</p> $\begin{array}{r} 31214.8910 \\ - 7.25 \\ \hline 3117.65 \end{array}$	<p>Using similar methods, they will be able to multiply decimals with up to two decimal places by a single digit number and then two digit numbers, approximating first. They should know that the decimal points line up under each other.</p> <p>For example: 4.92×3</p> <p>Children will approximate first</p> <p>4.92×3 is approximately $5 \times 3 = 15$</p> $\begin{array}{r} \times \quad 4 \quad 0.9 \quad 0.02 \\ 3 \quad \boxed{12} \quad \boxed{2.7} \quad \boxed{0.06} \\ \hline 12 \\ + 0.7 \\ + 0.06 \\ \hline 12.76 \end{array}$ <p>Extending to decimals with two decimal places.</p>	<p>Extend to decimals with up to two decimal places. Children should know that decimal points line up under each other</p> <p style="text-align: center;">$87.5 \div 7$</p> $\begin{array}{r} 12.5 \\ 7 \overline{) 87.5} \\ - 70.0 \\ \hline 17.5 \\ - 14.0 \\ \hline 3.5 \\ - 3.5 \\ \hline 0 \end{array}$ <div style="display: flex; align-items: center; justify-content: center;"> <div style="border: 1px solid black; border-radius: 50%; padding: 5px; margin-right: 10px;"> <p style="margin: 0;">10x</p> <p style="margin: 0;">2x</p> <p style="margin: 0;">0.5x</p> </div> <div style="text-align: center;"> <p>↓</p> </div> </div> <p>Answer : 12.5</p>

Key Areas to be kept consistent throughout the school:

1. When solving a word problem – use RUCSAC mnemonic to aid children's approach:

R = Read the question

U = Understand what the question is asking you

C = Choose which operation you will need to use (+ - x ÷)

S = Solve it!

A = Answer the question

C = Check your answer!

2. When solving calculations, encourage children to approximate first.

3. From Yr 2 onwards, ensure children understand the INVERSE methods of calculation e.g. addition / subtraction and multiplication / division

4. When using NUMBER LINES:

Adding = jump forwards above the line

Subtracting = jump backwards below the line

5. Introduce and vary the language used for the four basic calculation operations:

ADDITION: add, sum of, total, count on, increase by, plus, altogether

SUBTRACTION: take away, subtract, less than, minus, find the difference

MULTIPLICATION: multiply, times, lots of / groups of, product

DIVISION: divide by, share, groups of, quotient.



