

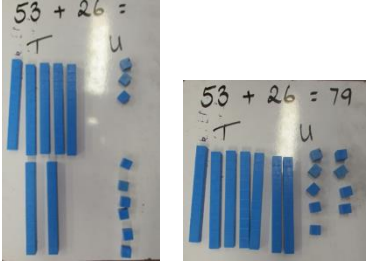
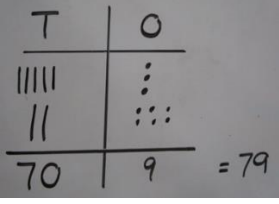
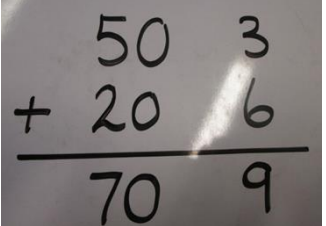
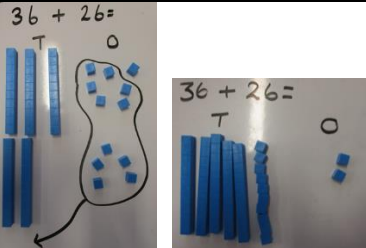
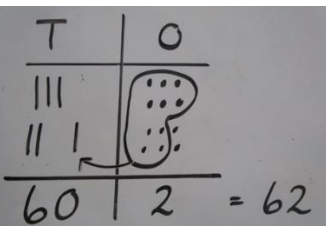
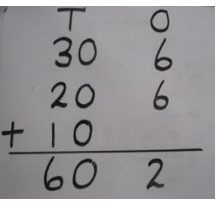






















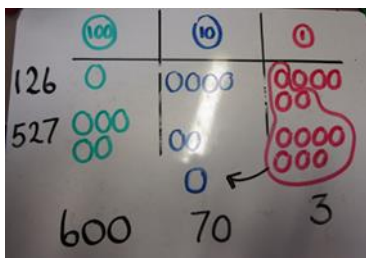

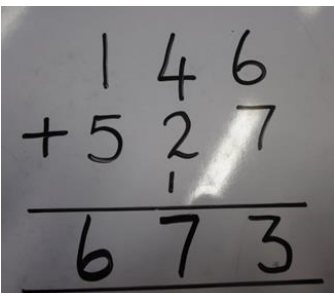











# Year 3 Calculation Policy

## Addition

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
3A.1 - I can add multiples 10 and 100		<p style="text-align: center;"><math>225 + 200</math></p>	$21 + 30 = 51$ $51 = 21 + 30$ $225 + 100 =$ $225 + 200 =$ $225 + \underline{\quad} = 325$
3A.1 - I can add near multiples 10 and 100			$34 + 19 =$ $34 + 20 - 1$
I can add multiples of 5 and 10 to make a hundred			$65 + 5 + 30 = 100$
3A.2 - I can perform place value additions (e.g. $300 + 4 + 20 = 324$ )			$300 + 4 + 20 = 324$ $330 + \underline{\quad} = 334$ $\underline{\quad} + 30 + 4 = 234$ $234 + \underline{\quad} = 334$
3A.3 - I can add any 2-digit number by partitioning			$55 + 37 =$ $50 + 30 = 80$ $5 + 7 = 12$ $80 + 12 = 92$
3A.4 - I can add a pair of 2-digit numbers by counting on			$53 + 26 =$ $53 + 20 + 6 = 79$

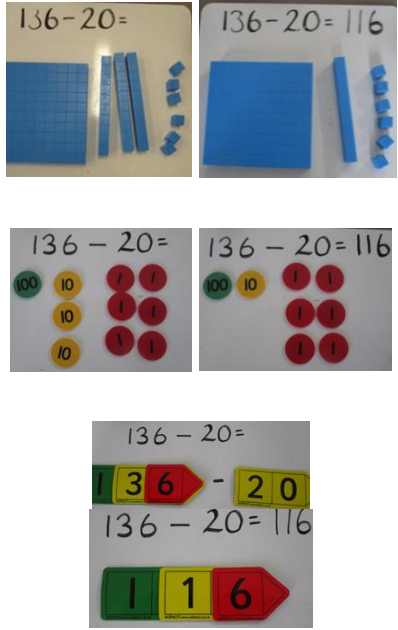
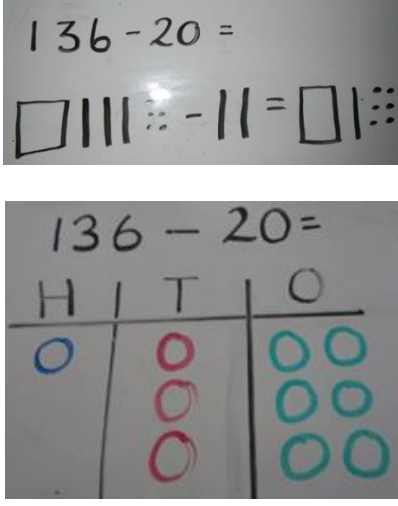
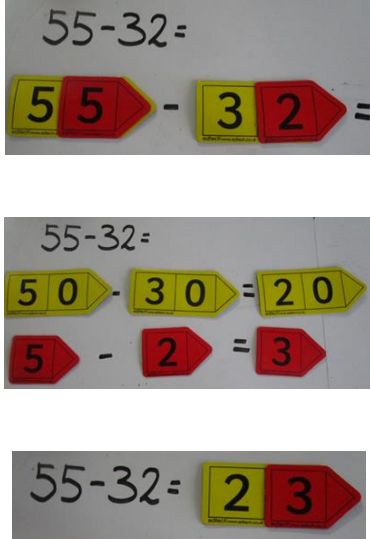
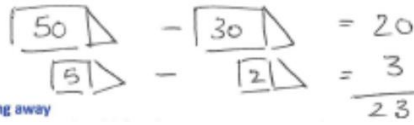
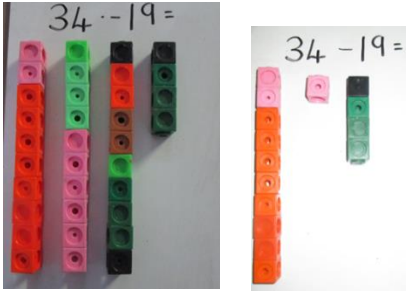
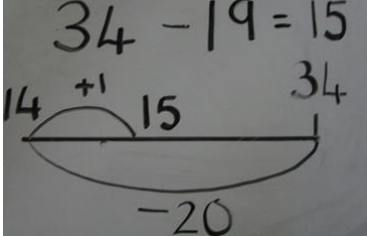
# Year 3 Calculation Policy

## Addition- Written Methods

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract																		
3A.6 - I can use expanded column addition																					
																					
3A.7 - I can use efficient column addition to add numbers with 3 digits	<table border="1" style="margin: 0 auto; border-collapse: collapse;"> <thead> <tr style="background-color: #FFDAB9;"> <th style="padding: 5px;">Hundreds</th> <th style="padding: 5px;">Tens</th> <th style="padding: 5px;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> </tr> <tr> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> </tr> </tbody> </table> <p style="text-align: center; margin: 10px 0;">Group the 1s into a ten and move it into the tens column</p> <table border="1" style="margin: 0 auto; border-collapse: collapse;"> <thead> <tr style="background-color: #FFDAB9;"> <th style="padding: 5px;">Hundreds</th> <th style="padding: 5px;">Tens</th> <th style="padding: 5px;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> </tr> <tr> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> <td style="text-align: center; padding: 5px;"></td> </tr> </tbody> </table>	Hundreds	Tens	Ones							Hundreds	Tens	Ones								  
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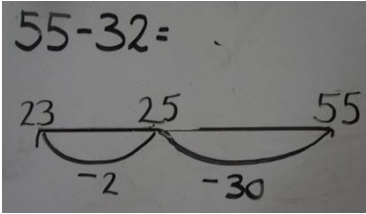
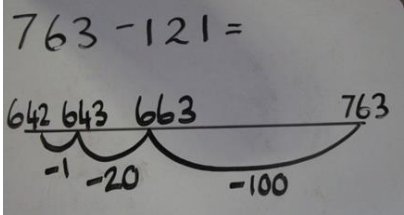
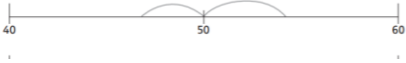
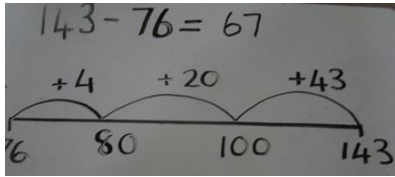


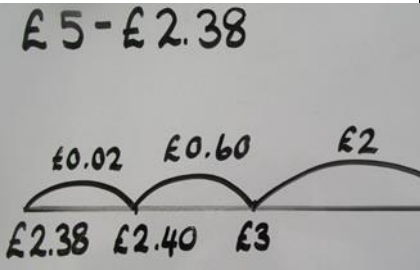
# Year 3 Calculation Policy

## Subtraction

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
3S.1 - I can subtract multiples of 10 and 100 (e.g. $136-20=$ )	 <p>Concrete representations for <math>136-20=</math> using a grid, base ten blocks, and ten blocks.</p>	 <p>Pictorial representations for <math>136-20=</math> using a number line and a place value chart.</p>	$136 - 20 = 116$
I can subtract by partitioning (e.g. $55-32$ as $50-30$ and $5-2$ )	 <p>Concrete representations for <math>55-32=</math> using ten blocks and arrows.</p>	 <p>Pictorial representations for <math>55-32=</math> using a partitioning diagram.</p>	$55 - 32 = 23$ $50 - 30 = 20$ $5 - 2 = \underline{3}$ $23$
3S.3 - I can takeaway multiples and near multiples of 10 and 100	 <p>Concrete representations for <math>34-19=</math> using ten blocks.</p>	 <p>Pictorial representation for <math>34-19=</math> using a number line.</p>	$34 - 19 = 15$ $30 - 20 + 1 =$

# Year 3 Calculation Policy

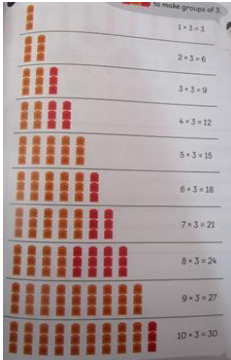
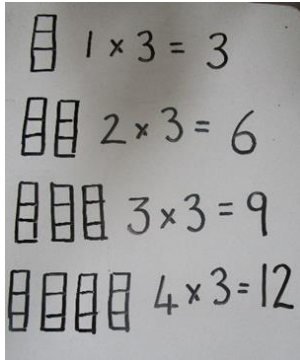
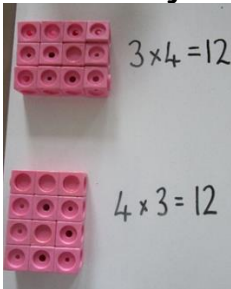
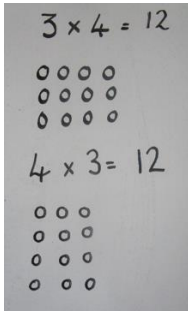
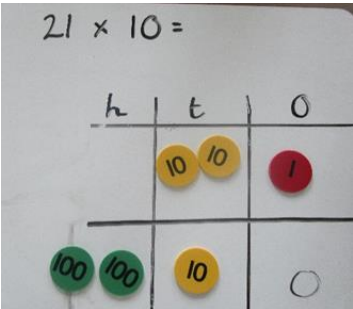
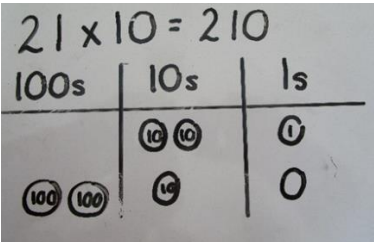
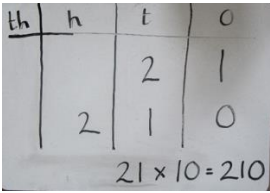
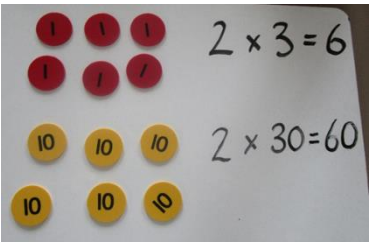
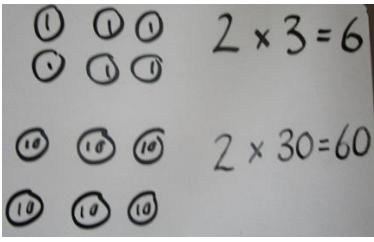
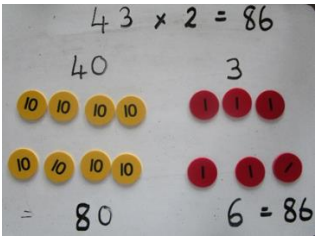
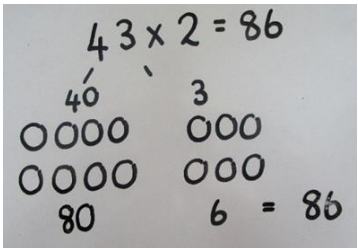
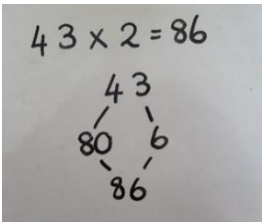
## Subtraction

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
3S.4 - I can count back in hundreds, tens and then ones using an unstructured number line (e.g. 763 - 121)		 	$55 - 32 = 22$ $55 - 30 - 2 = 23$ $763 - 121 =$ $763 - 100 - 20 - 1 = 642$
3S.5 - I can count on (FROG) from a 2-digit number to a number bigger than 100 (e.g. 143-76)	$54 - 47 = \square$ 		$143 - 76 = 67$ $76 + 4 + 20 + 43 = 143$ $4 + 20 + 43 = 67$
3S.6 - I can find change from £1, £5 and £10 by counting up	 		$£5 - £2.38 = £2.62$ $£2.38 + £0.02 + £0.60 + £2 = £5$ $£0.02 + £0.60 + £2 = £2.62$



# Year 3 Calculation Policy

## Multiplication

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p>3M.1 - I know by heart all the multiplication facts in <math>\times 2, \times 3, \times 4, \times 5, \times 8, \times 10</math> tables</p>			$1 \times 3 = 3$ $2 \times 3 = 6$ $3 \times 3 = 9$ $4 \times 3 = 12$ $5 \times 3 = 15$ $6 \times 3 = 18$ $7 \times 3 = 21$ $8 \times 3 = 24$ $9 \times 3 = 27$ $10 \times 3 = 30$
<p>3M.2 - I know that multiplication can be done in any order (commutative)</p>	<p>Use arrays</p> 		$3 \times 4 = 12$ so $4 \times 3 = 12$
<p>3M.3 - I can multiply whole numbers by 10 and 100</p>			
<p>3M.4 - I can use related facts to multiply multiples of 10 e.g. <math>2 \times 3 = 6</math> <math>2 \times 30 = 60</math></p>			$2 \times 3 = 6$ $2 \times 30 = 60$
<p>3M.5 - I can double numbers upto 50 by partitioning</p>			

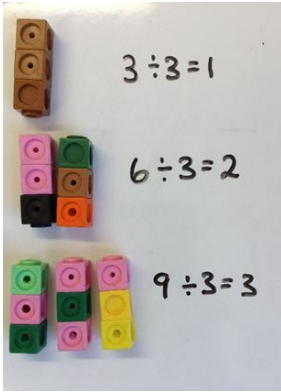
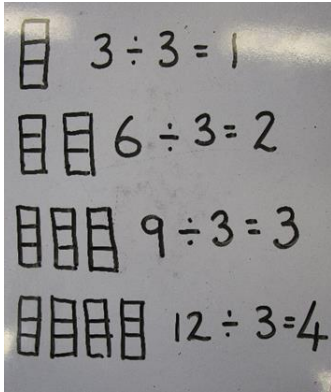
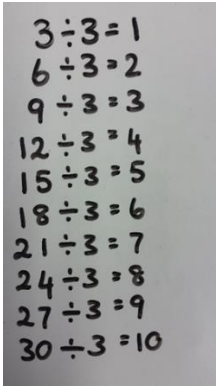
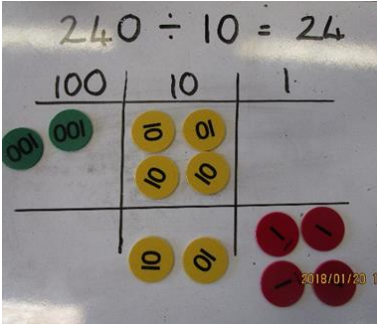
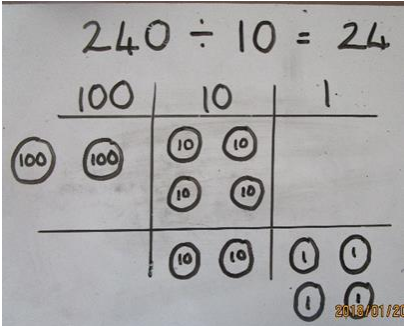
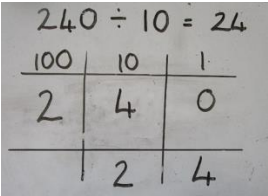
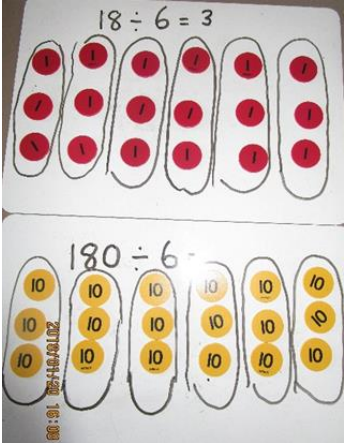
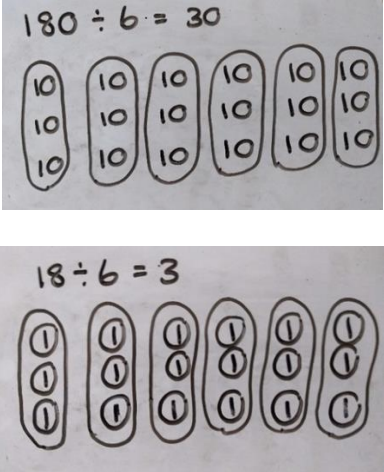
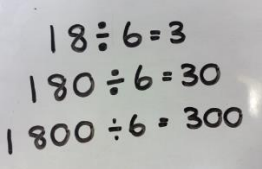
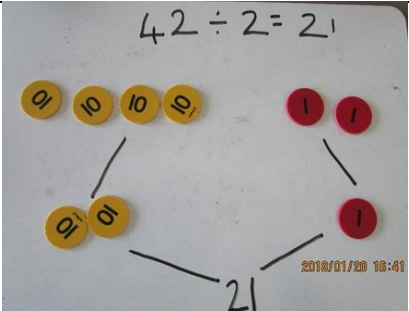
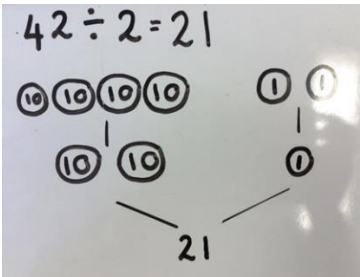
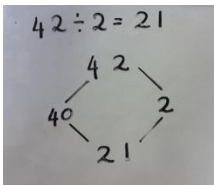
# Year 3 Calculation Policy

## Multiplication

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p>3M.6 - I can partition teen numbers into 10's and ones to multiply (e.g. <math>3 \times 14</math> as <math>3 \times 10</math> and <math>3 \times 4</math>)</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;">30      12</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;">10s   1s</p> <p style="text-align: center;">0   0000</p> <p style="text-align: center;">0   0000</p> <p style="text-align: center;">0   0000</p> <hr style="width: 100%;"/> <p style="text-align: center;">30   12 = 42</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;"><math>3 \times 10 = 30</math></p> <p style="text-align: center;"><math>3 \times 4 = 12</math></p> <p style="text-align: center;"><math>30 + 12 = 42</math></p>
<p>3M.7 - I can use a grid method to multiply 2-digit and 3-digit numbers by 'friendly' 1-digit numbers</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;">30      12</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;">10   4</p> <p style="text-align: center;">3   0   0000</p> <p style="text-align: center;">0   0000</p> <p style="text-align: center;">0   0000</p> <hr style="width: 100%;"/> <p style="text-align: center;">30   12 = 42</p>	<p style="text-align: center;"><math>3 \times 14 = 42</math></p> <p style="text-align: center;">3   30   12 = 42</p>


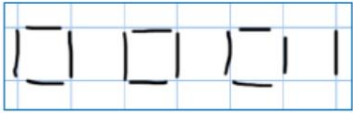

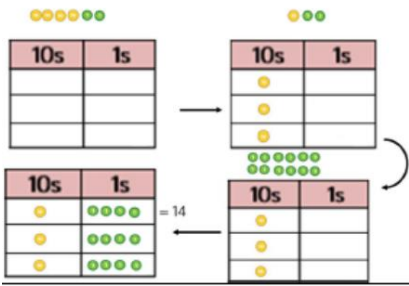
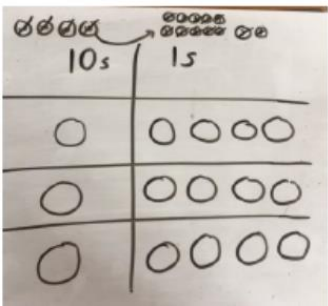
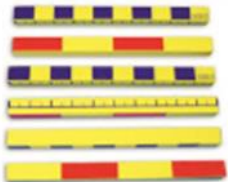
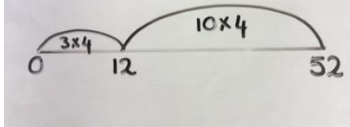
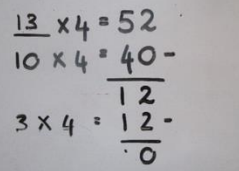
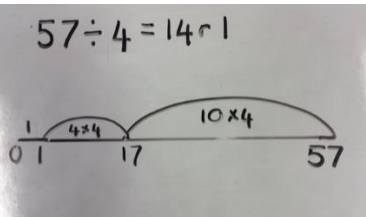
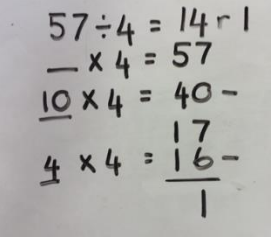
# Year 3 Calculation Policy

## Division

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p>3D.1 - I know by heart all the division facts that can be derived from the x2, x3, x4, x5, x8 and x 10 tables</p>			
<p>3D.2 - I can divide whole numbers by 10 or 100 to give whole number answers</p>			
<p>3D.3 - I can use related facts to divide multiples of 10 by 1-digit numbers e.g. <math>32 \div 8 = 4</math> so <math>320 \div 8 = 40</math></p>			
<p>3D.4 - I can halve even numbers to 100, halve odd numbers to 20</p>			

# Year 3 Calculation Policy

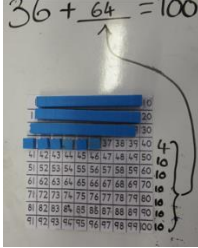
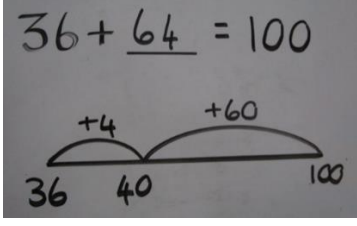

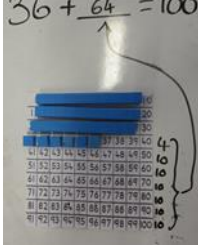
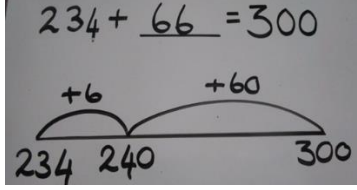

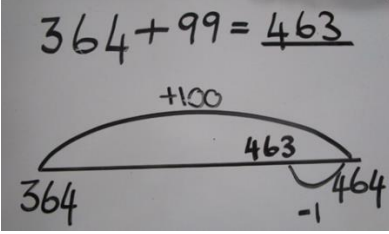
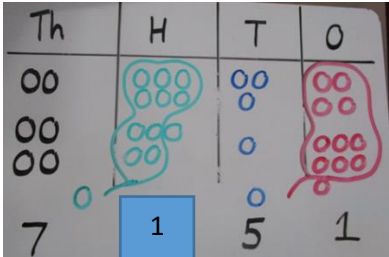

## Division

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p><b>Dividing with remainders</b></p>	<p>2d + 1d with remainders using lollipop sticks. Cuisenaire rods, above a ruler can also be used.  <math>13 \div 4</math></p> <p>Use of lollipop sticks to form wholes- squares are made because we are dividing by 4.</p>  <p>There are 3 whole squares, with 1 left over.</p>	<p>Children to represent the lollipop sticks pictorially.</p>  <p>There are 3 whole squares, with 1 left over.</p>	<p><math>13 \div 4 = 3 \text{ remainder } 1</math></p> <p>Children should be encouraged to use their times table facts; they could also represent repeated addition on a number line.</p> <p>'3 groups of 4, with 1 left over'</p> 
<p><b>Sharing</b></p>	<p>Sharing using place value counters.  <math>42 \div 3 = 14</math></p> 	<p>Children to represent the place value counters pictorially.</p> 	<p><math>42 \div 3</math>  <math>42 = 30 + 12</math>  <math>30 \div 3 = 10</math>  <math>12 \div 3 = 4</math>  <math>10 + 4 = 14</math></p>
<p><b>3D.5 - I can perform divisions just above the 10th multiple using a number line e.g. <math>52 \div 4 = 13</math></b></p>		<p><math>52 \div 4 = 13</math></p> 	<p><math>52 \div 4 =</math></p> 
<p><b>3D.6 - I can divide larger numbers mentally by subtracting the 10th multiple, including those with remainders e.g. <math>57 \div 3</math></b></p>	<p><b>Times tables square</b></p>	<p><math>57 \div 4 = 14 \text{ r } 1</math></p> 	<p><math>57 \div 4 = 14 \text{ r } 1</math></p> 



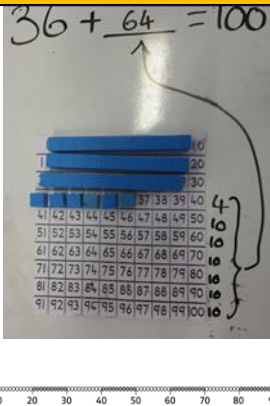
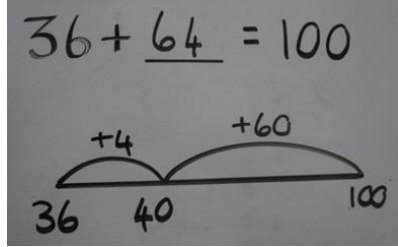
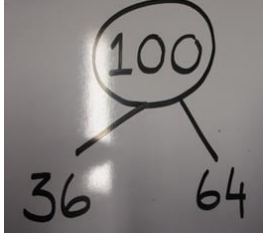

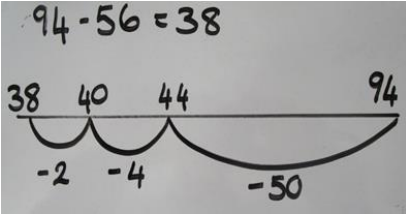
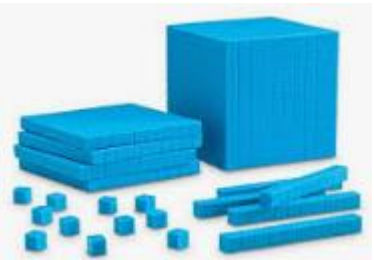
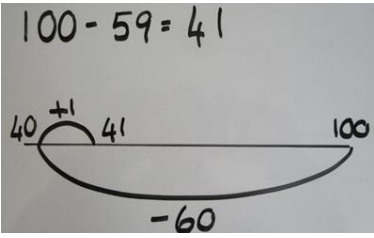

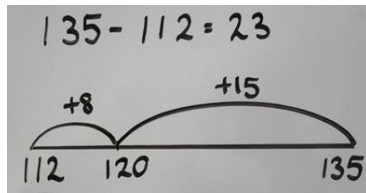

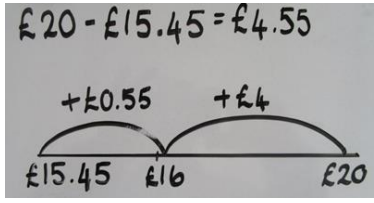
# Year 4 Calculation Policy

## Addition

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract																
4A.1 – I know by heart or work out quickly number bonds to 100 or £1			<p>What do you add to 36 to make 100?</p> 																
4A.2 – I can add to the next 100, £1 and whole number (e.g. $234 + 66 = 300$ , $3.4 + 0.6 = 4$ )		 	<p><math>234 + 6 + 60 =</math></p> <p><math>3.6 + \underline{\quad} = 4</math></p>																
4A.3 – I can add near multiples of 10, 100, 1000, £1 and 10p	<table border="1" style="width: 100%; text-align: center;"> <thead> <tr style="background-color: #FFDAB9;"> <th>Hundreds</th> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> <td></td> </tr> </tbody> </table> <p style="text-align: center;"><b>Add 100 and take 1 away</b></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr style="background-color: #FFDAB9;"> <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				Hundreds	Tens	Ones					<p><math>364 + 100 - 1 = 463</math></p>				
Hundreds	Tens	Ones																	
Hundreds	Tens	Ones																	
4A.5 – I can add 3 and 4 digit numbers using efficient column method	<p><b><math>2634 + 4517 =</math></b></p> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr style="background-color: #FFDAB9;"> <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> <table border="1" style="width: 100%; text-align: center;"> <thead> <tr style="background-color: #FFDAB9;"> <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					<p><math>2634 + 4517 =</math></p> 	
Thousands	Hundreds	Tens	Ones																
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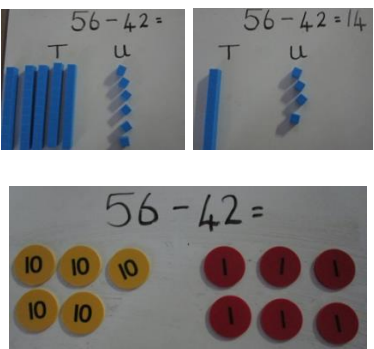
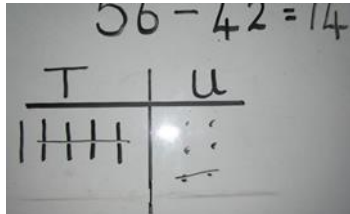
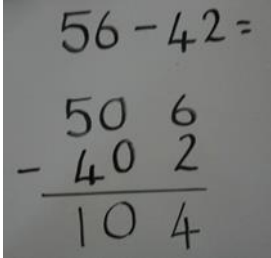
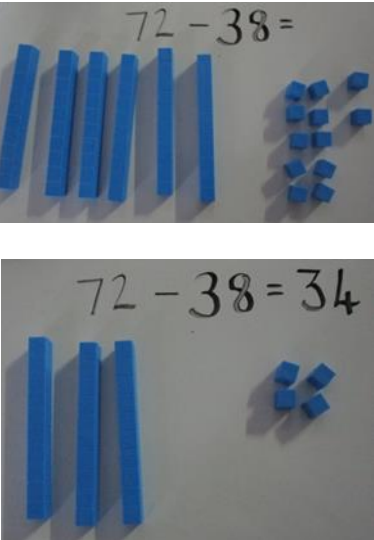
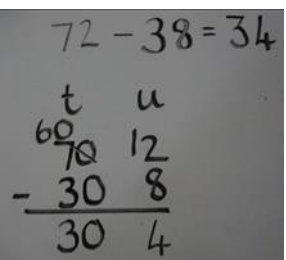

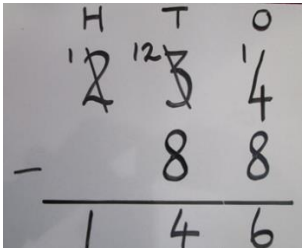
# Year 4 Calculation Policy

## Subtraction

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p>4S.1 - I know by heart or can work out quickly number bonds to 100 or £1</p>			
<p>4S.2 - I can takeaway 2 digit numbers from 2 and 3-digit numbers without a number line</p>			<p><math>94 - 56 =</math></p> <p><math>94 - 50 - 4 - 3 = 37</math></p>
<p>4S.3 - I can takeaway multiples and near multiples of 10, 100, 1000, £1 and 10p</p>			<p><math>100 - 59 =</math></p> <p><math>100 - 60 + 1</math></p>
<p>4S.4 - I can subtract by counting on (FROG) without a number line e.g. 503 - 368</p>			<p><math>135 - 112 =</math></p> <p><math>112 + 8 + 15 = 135</math></p>
<p>4S.5 - I can find change from £10, £20 and £50 by counting on (FROG)</p>			<p><math>£20 - £15.45 =</math></p>

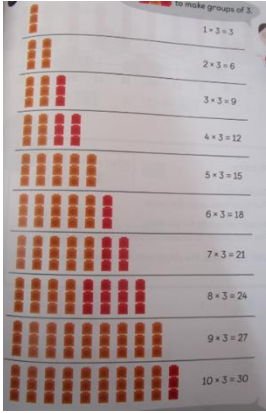
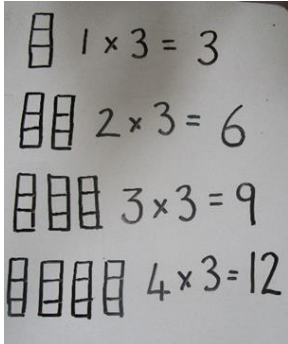
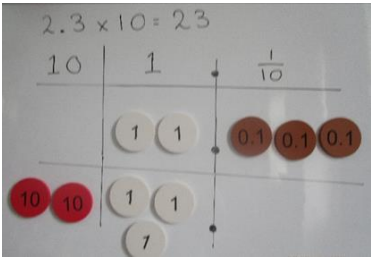
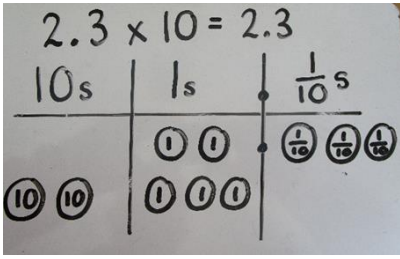
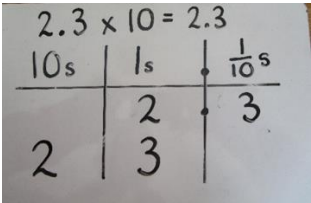
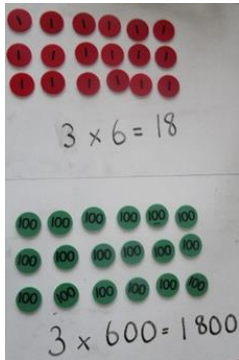
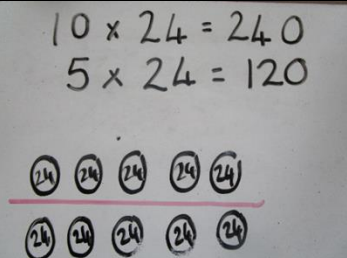
# Year 4 Calculation Policy

## Subtraction – Written Calculations

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<p>4S.6 - I can use expanded written subtraction without decomposing (2 and 3 digit numbers)</p>	 <p>Two number lines and two sets of base ten blocks illustrating the subtraction <math>56 - 42 = 14</math>. The blocks show 5 tens rods and 6 ones units, with 4 tens rods and 2 ones units removed, leaving 1 ten rod and 4 ones units.</p>	 <p>A place value chart with columns for Tens (T) and Units (u). The Tens column contains five vertical lines, and the Units column contains six dots. Four lines are crossed out in the Tens column, and two dots are crossed out in the Units column, leaving one line and four dots.</p>	 <p>Abstract column subtraction showing <math>56 - 42 = 14</math>. The digits are aligned in columns: 50 and 6 above the minus sign, 40 and 2 below it. The result 10 and 4 is written below a horizontal line.</p>
<p>4S.7 - I can use expanded written subtraction using decomposition with 3 digit numbers</p>	 <p>Two sets of base ten blocks illustrating the subtraction <math>72 - 38 = 34</math>. The first set shows 7 tens rods and 2 ones units, with 3 tens rods and 8 ones units removed. The second set shows 3 tens rods and 4 ones units remaining.</p>		 <p>Abstract column subtraction showing <math>72 - 38 = 34</math>. The digits are aligned in columns: 70 and 2 above the minus sign, 30 and 8 below it. The result 30 and 4 is written below a horizontal line.</p>
<p>4S.8 - I can efficient written subtraction with upto 3 digits using efficient column subtraction</p>	 <p>Place value counters for 234 minus 88. There are 2 hundreds (green), 3 tens (yellow), and 4 ones (red) counters. Eight tens and eight ones counters are shown being removed, leaving 1 hundred, 4 tens, and 6 ones.</p>		 <p>Abstract column subtraction showing <math>234 - 88</math>. The digits are aligned in columns: 200, 30, and 4 above the minus sign; 80 and 8 below it. The result 146 is written below a horizontal line.</p>

# Year 4 Calculation Policy

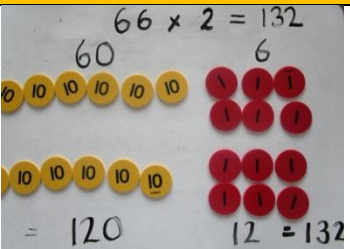
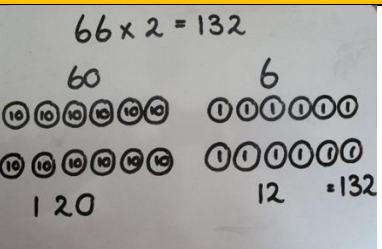
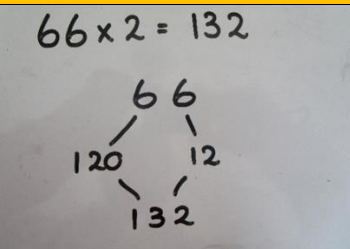
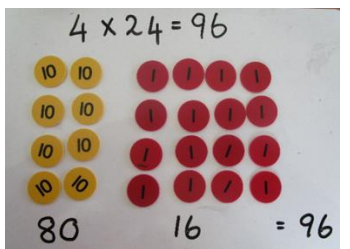
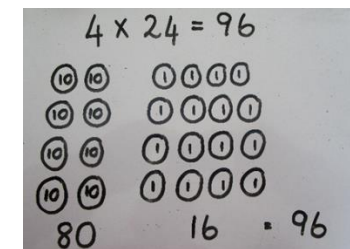
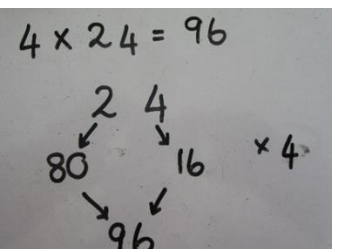
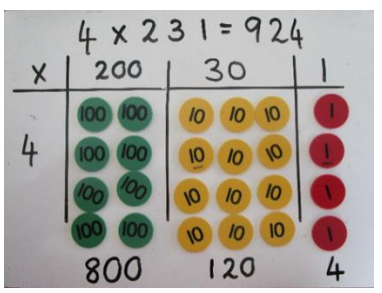
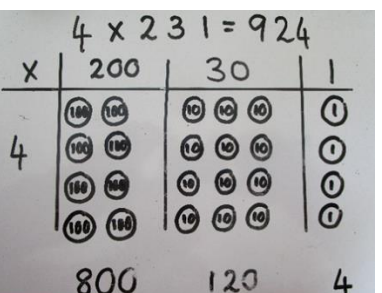
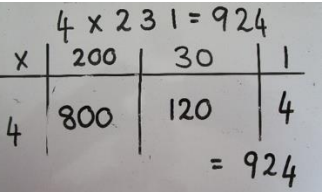
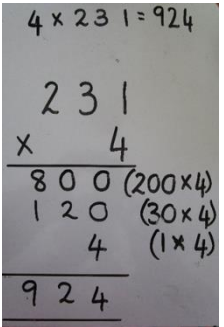
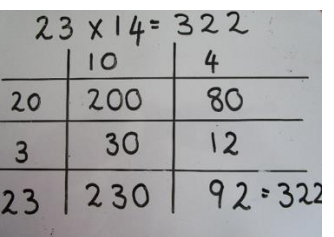
## Multiplication

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
<b>Year 4 Number Facts</b> 4M.1 - I know by heart all the multiplication facts up to 12 x 12			$1 \times 3 = 3$ $2 \times 3 = 6$ $3 \times 3 = 9$ $4 \times 3 = 12$ $5 \times 3 = 15$ $6 \times 3 = 18$ $7 \times 3 = 21$ $8 \times 3 = 24$ $9 \times 3 = 27$ $10 \times 3 = 30$
4M.2 - I can multiply whole numbers and 1 place decimals by 10, 100, 1000			
4M.3 - I can use related facts to multiply by multiples of 10, 100, 1000 (e.g. 300x6 and 50x60)			$3 \times 6 = 18$  $3 \times 60 = 180$  $3 \times 600 = 1800$
4M.4 - I can use number facts to make mental multiplication easier e.g. 36x5 is half of 36x10			$10 \times 24 = 240$ so $5 \times 24 = 120$
4M.5 - I can multiply a 2-digit by 9 or 11 by multiplying by 10 and adjusting (e.g. 9x25 as (10x25)-25)		$9 \times 25$ as $(10 \times 25) - 25$  $25 \ 25 \ 25 \ 25 \ 25$ $25 \ 25 \ 25 \ 25 \ 25$	$9 \times 25 = (10 \times 25) - 25$



# Year 4 Calculation Policy

## Multiplication

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
4M.6 - I can use partitioning to find doubles to 100 and beyond	$66 \times 2 = 132$ 	$66 \times 2 = 132$ 	$66 \times 2 = 132$ 
4M.7 - I can partition 2 digit numbers to multiply by a 1-digit number (e.g. $4 \times 24$ as $4 \times 20$ and $4 \times 4$ )	$4 \times 24 = 96$ 	$4 \times 24 = 96$ 	$4 \times 24 = 96$ 
4M.8 - I can use a grid method to multiply a 3-digit number by a 1-digit number	$4 \times 231 = 924$ 	$4 \times 231 = 924$ 	$4 \times 231 = 924$ 
4M.9 - I can use the 'ladder' method to multiply 3-digit numbers by 1-digit numbers			$4 \times 231 = 924$ 
4.10 - I can use a grid method to multiply a teen number by a 2-digit number			$23 \times 14 = 322$ 

# Year 4 Calculation Policy

## Division

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
4D.1 - I know by heart all the division facts up to $144 \div 12$			
4D.2 - I can divide whole numbers by 10, 100, to give whole number answers with 1 decimal place			
4D.3 - I can use related facts to divide multiples of 100 by 1-digit numbers e.g. $32 \div 8 = 4$ so $3200 \div 8 = 400$	<p>Find the answer to this first <math>32 \div 8 = 4</math></p> <p>Use methods taught previously</p>		<p><math>32 \div 8 = 4</math></p> <p>So <math>320 \div 8 = 40</math></p> <p>So <math>3200 \div 8 = 400</math></p>
4D.4 - I can find halves of even numbers to 200 and beyond using partitioning			
4D.5 - I can divide larger numbers mentally by subtracting the 10th or 20th multiple as appropriate.			

# Year 4 Calculation Policy

## Division

Learning Ladders Assessment Statement	Concrete	Pictorial	Abstract
D.6 - I can use a written method to divide a 2 digit or a 3- digit number by a 1- digit number.	