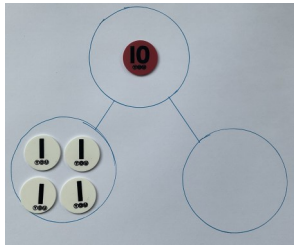
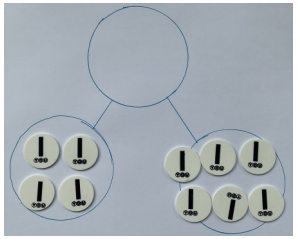
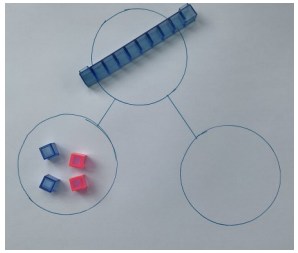
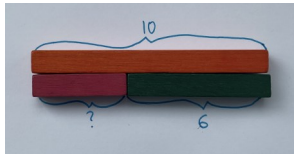
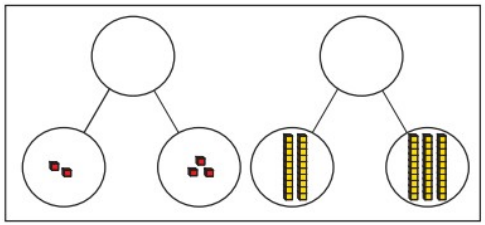
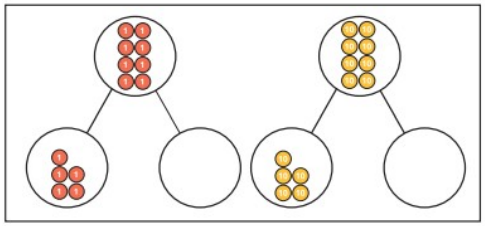
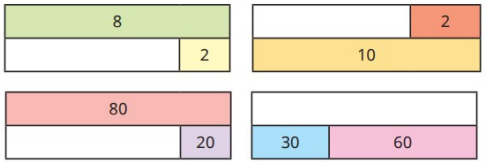
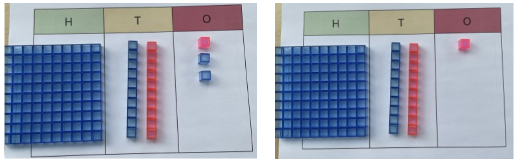
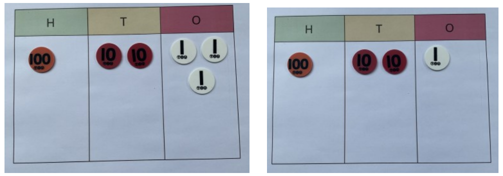
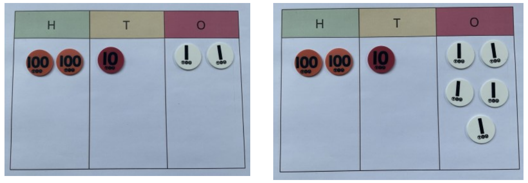
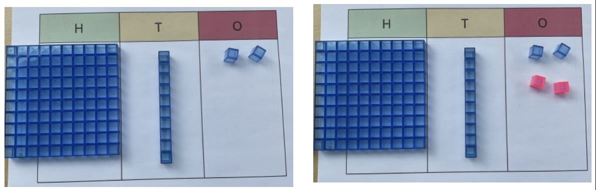
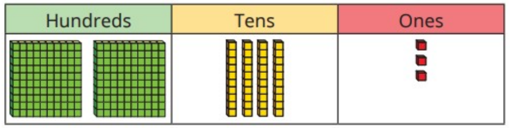
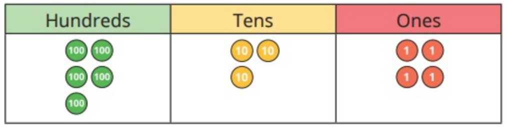
RAVENSCOTE JUNIOR SCHOOL

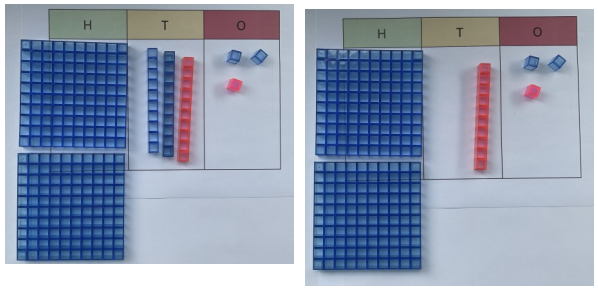
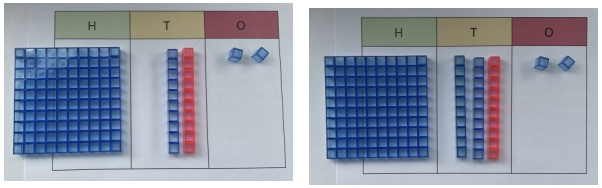
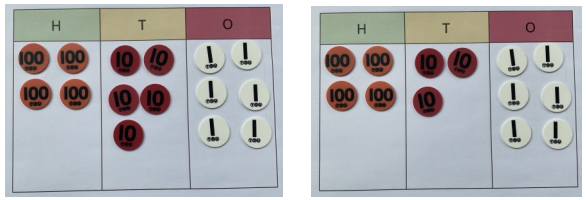
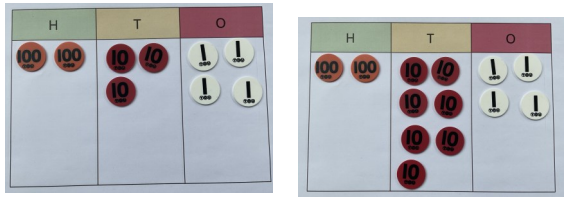
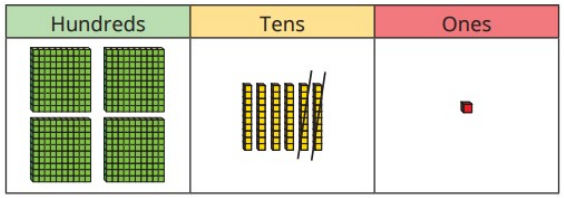
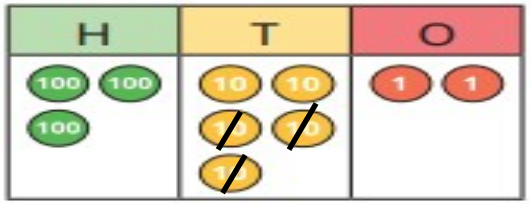
Calculation policy

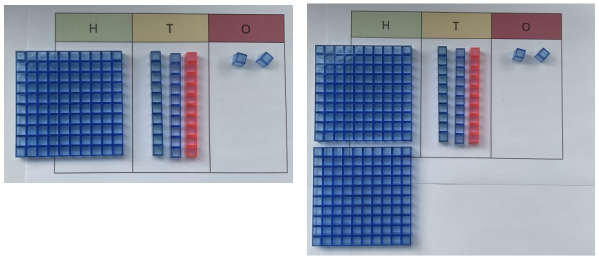
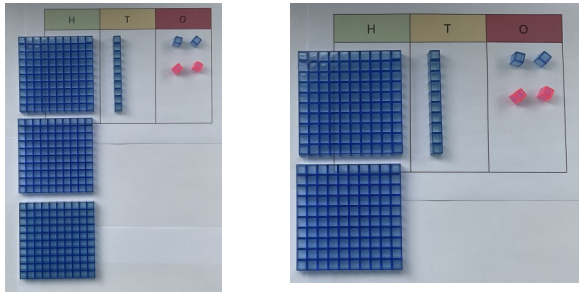
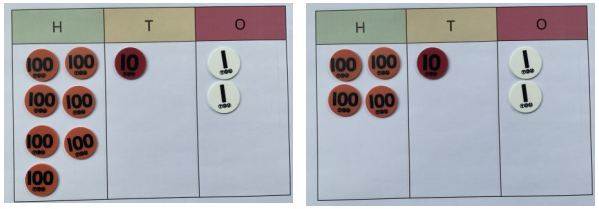
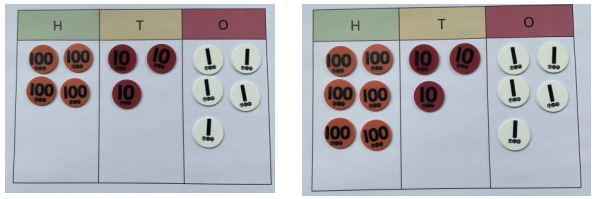
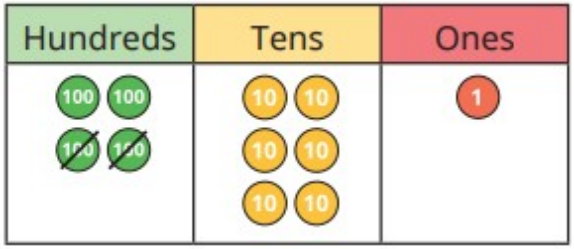
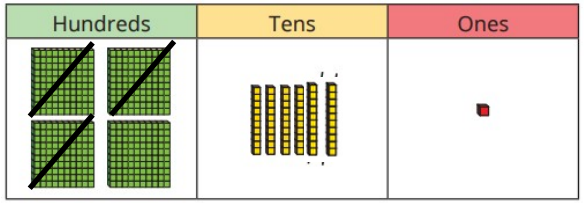
2024 - 2025

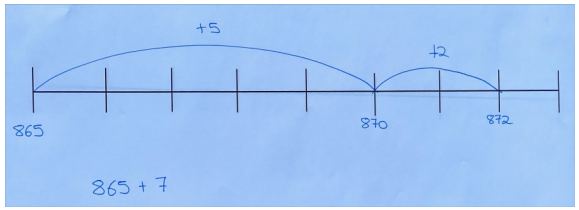
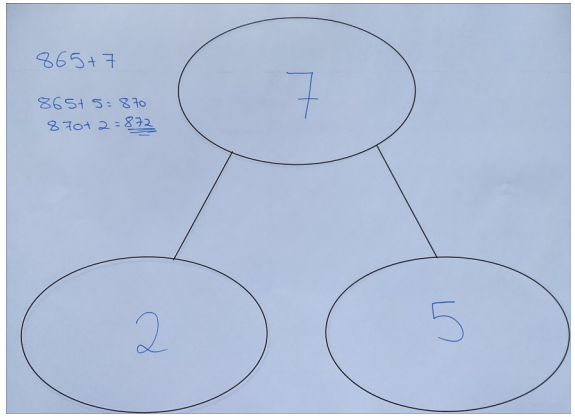
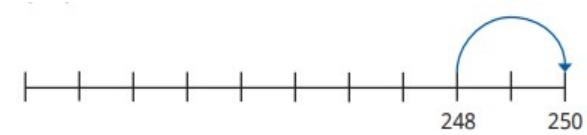
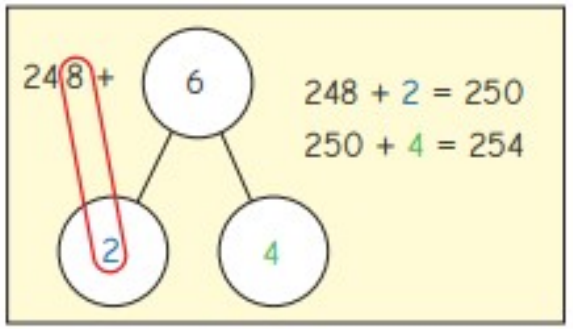
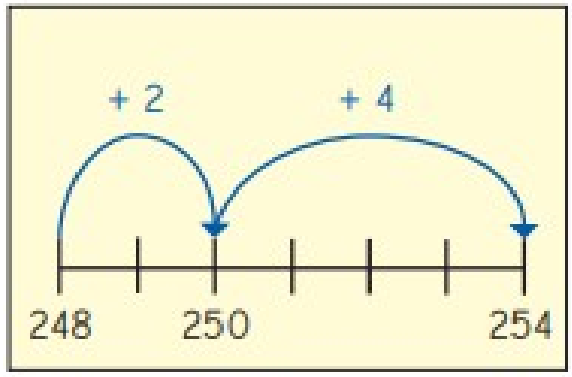
Date of Approval		Date of Review	
15th March 2024		November 2025	
Signed	Amy Wells **Headteacher**	**Signed**	Emily Gibson **Chair of Governors**

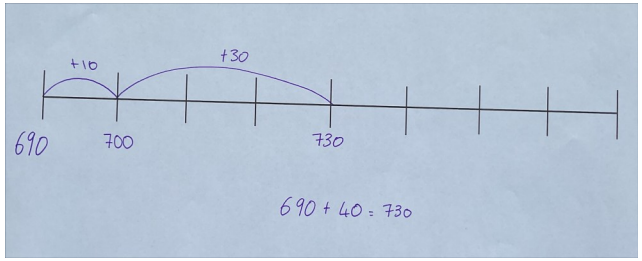
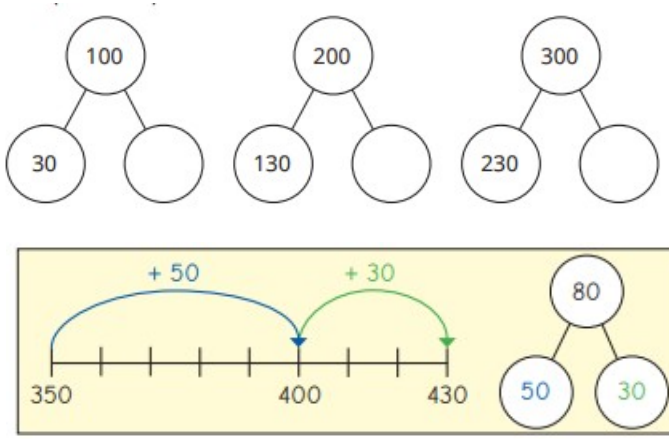
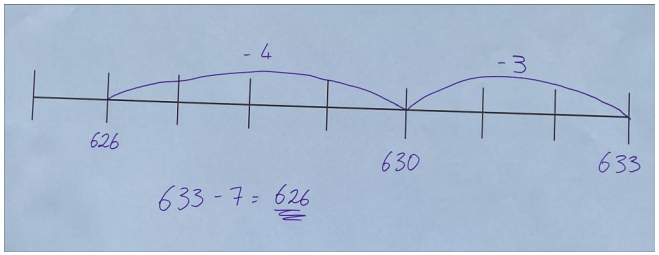
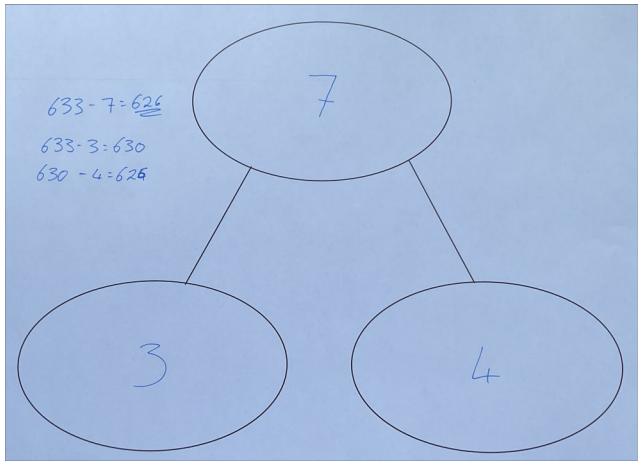
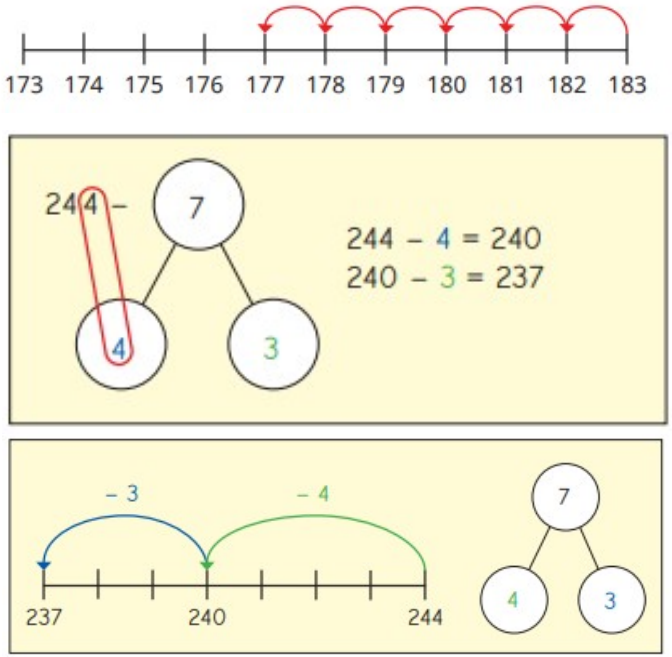
Addition and subtraction	Objective	Concrete	Pictorial	Abstract
Year 3	Apply number bonds within 10, extending to using them within 100	   	  	2 + _____ = 5 _____ + 4 = 7 _____ = 6 + 3 4+ _____ = 9 50 + 30 = _____ 70 = _____ + 30

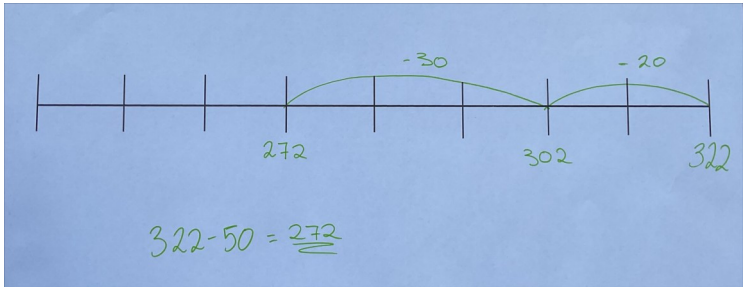
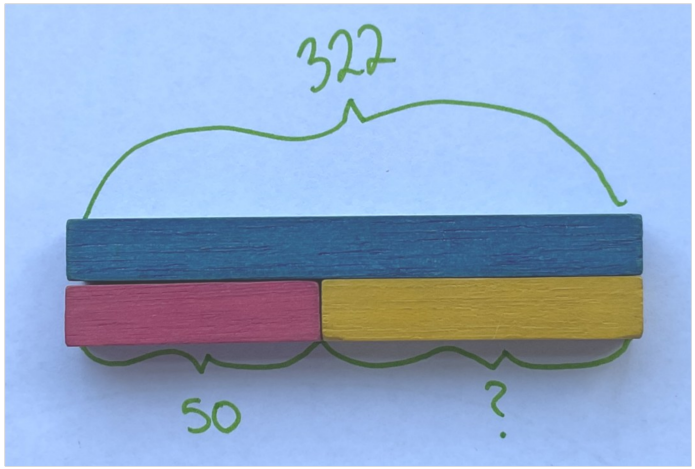
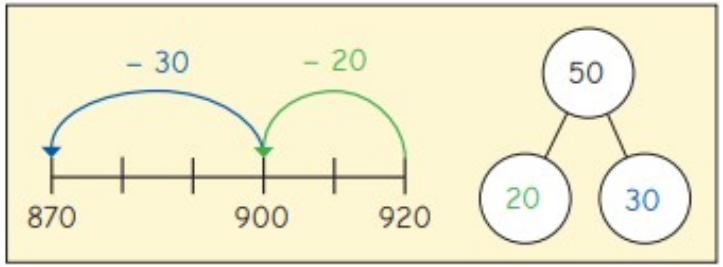
Addition and subtraction	Objective	Concrete	Pictorial	Abstract
Year 3	Add and subtract 1s	323 - 2  123 - 2  212 + 3  112 + 2 	  	243 + 5 = ________ 534 – 2 = ________ Hundreds | Tens | Ones 3 | 7 | 2

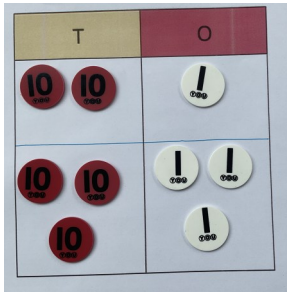
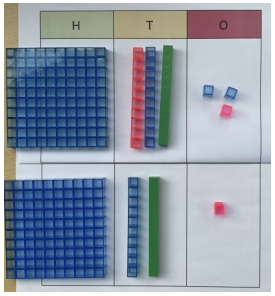
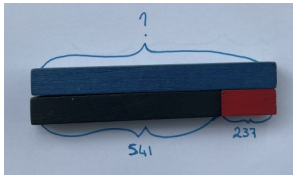
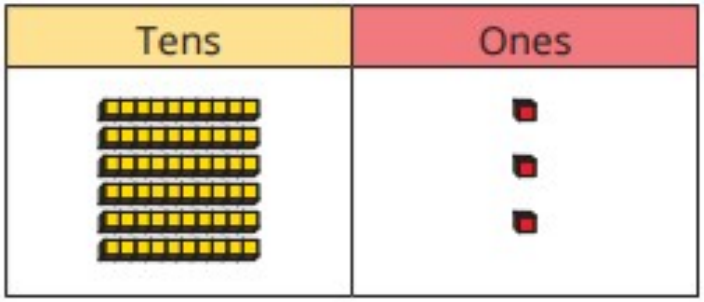
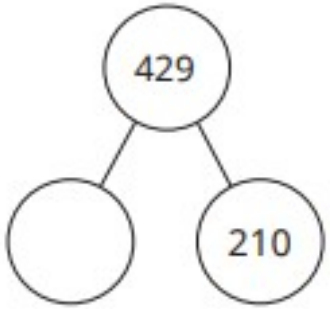
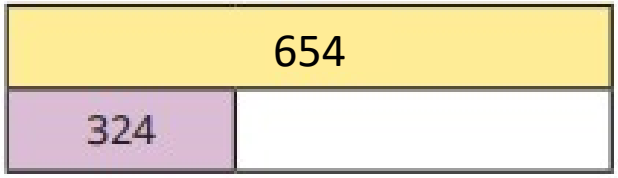
Addition and subtraction	Objective	Concrete	Pictorial	Abstract
Year 3	Add and subtract 10s	233 - 20  122 + 10  456 - 20  234 + 40 	  	461– 20 = _____ 352 - 30 = _____

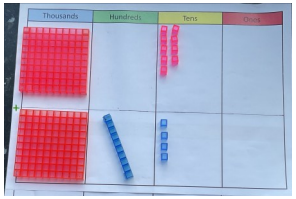
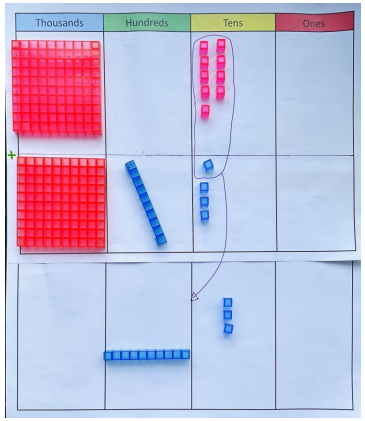
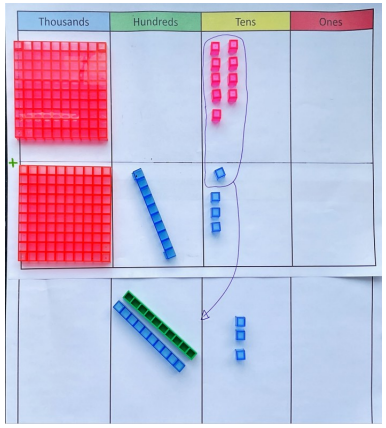
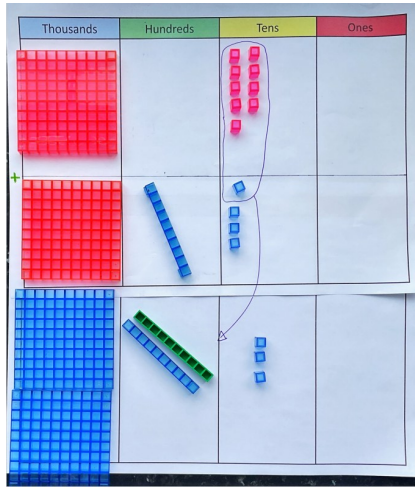
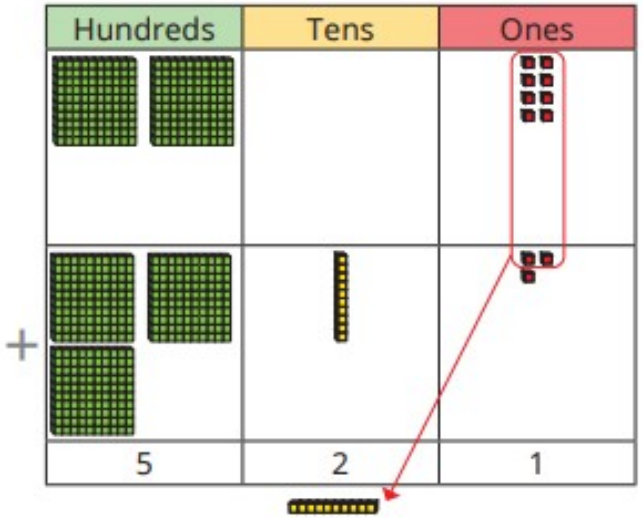
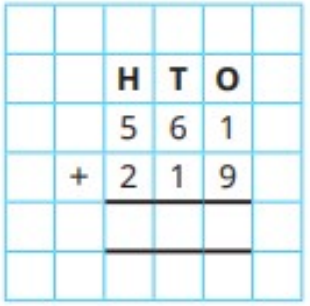
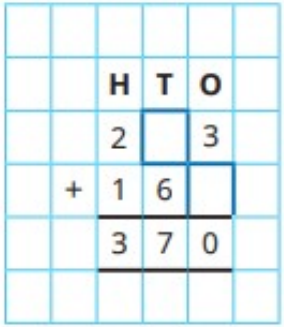
Year 3	Add and subtract 100s	142 + 200  314 - 100  712 - 300  435 + 200 	  	461 - 200 = _____ 461 - 300 = _____

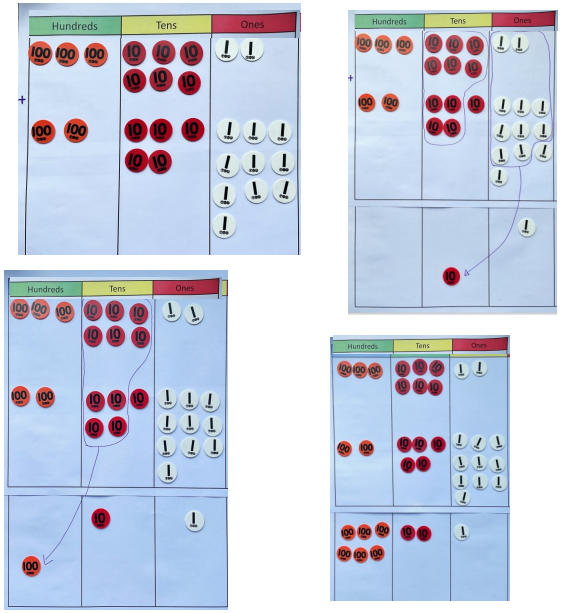
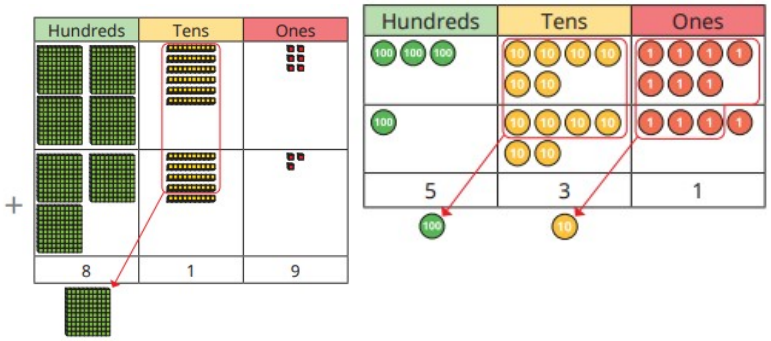
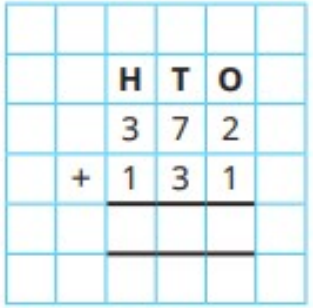
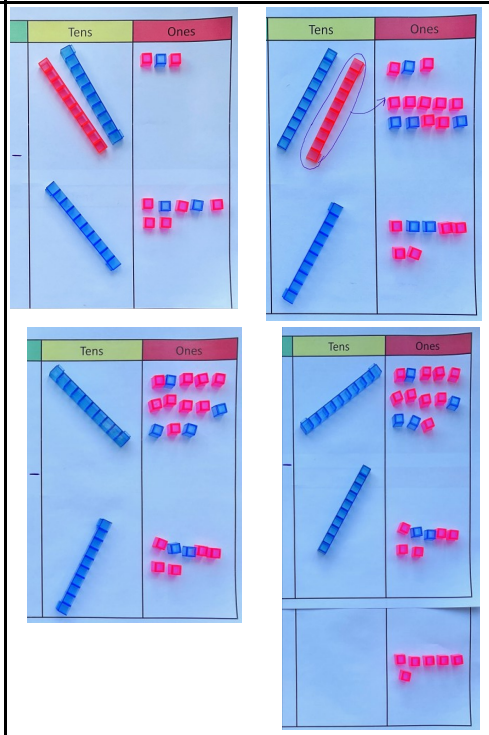
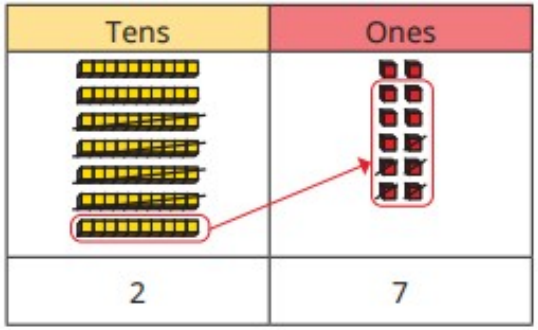
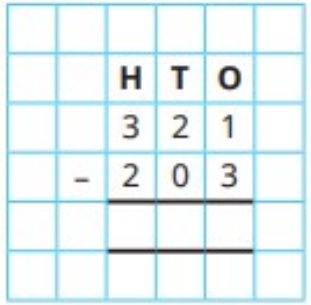
Year 3	Add across a 10	 	   Tom and Mo are working out 248 + 6  	865 + 5 438 + 4 713 + 9 564 + 8

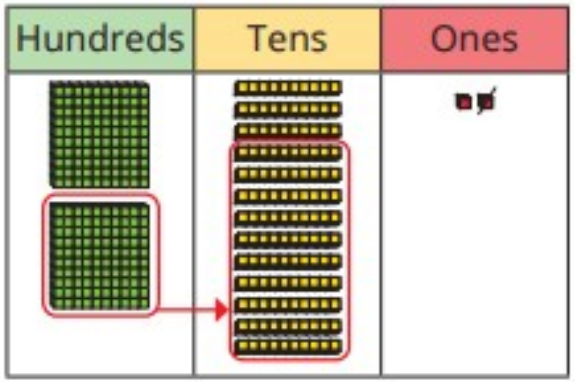
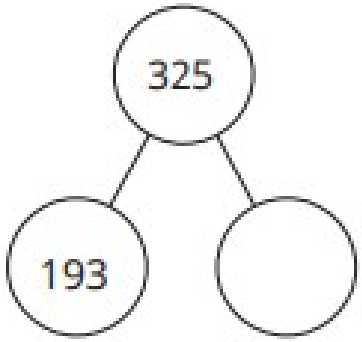
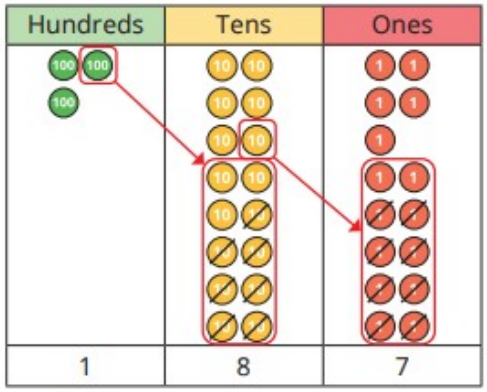
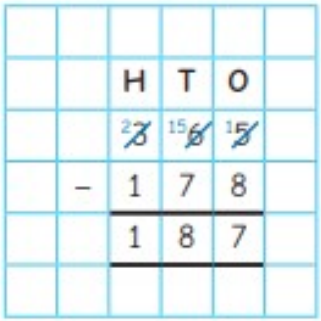
Year 3	Add 10s across a 100			240 + 80 690 + 80 690 + 40 90 + 830
Year 3	Subtract 1s across a 10	 		70-3 370-3 640—8 520—7 242—9 633—7 581—4

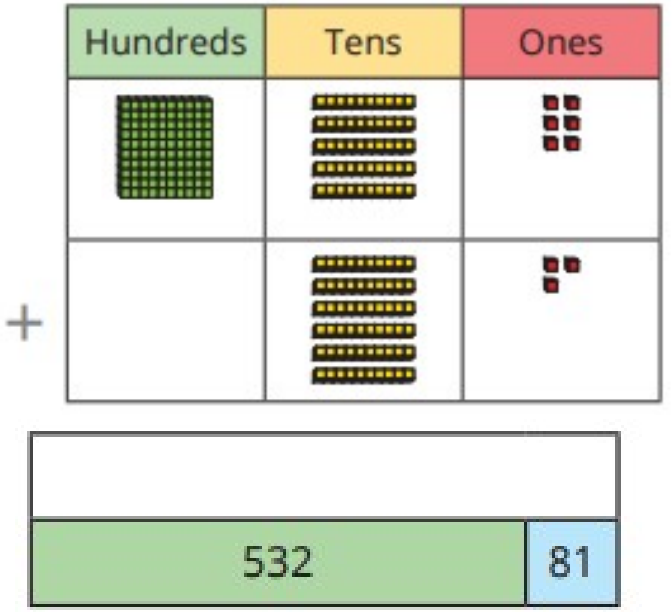
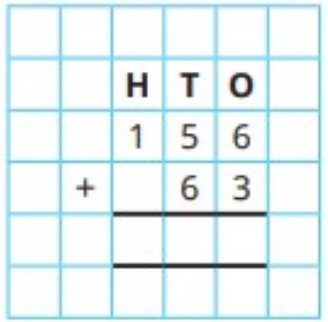
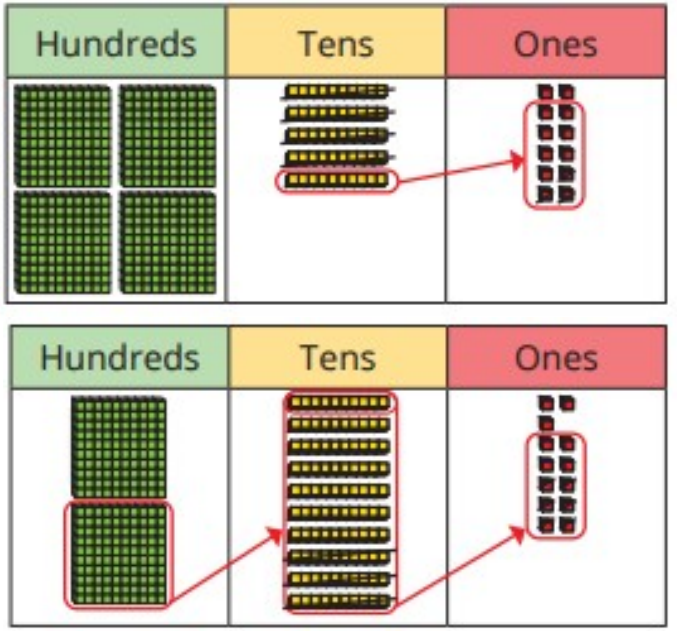
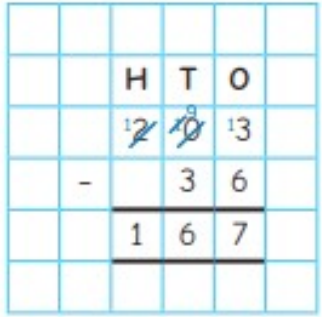
Year 3	Subtract 10s across a 100	 	 322 ? 50	202—70 509—40 149—70 819—30 322—50

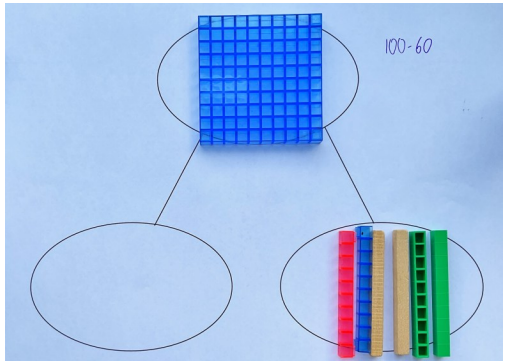
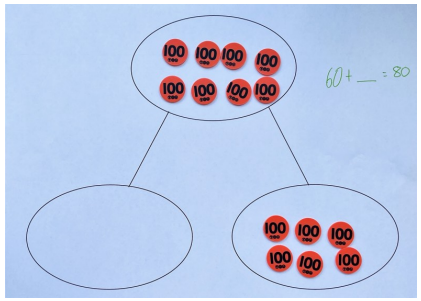
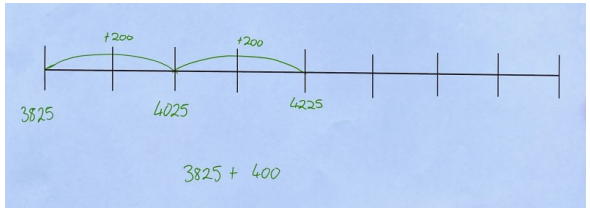
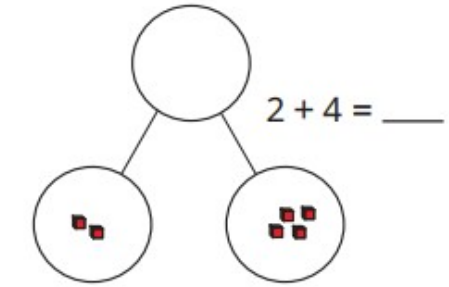
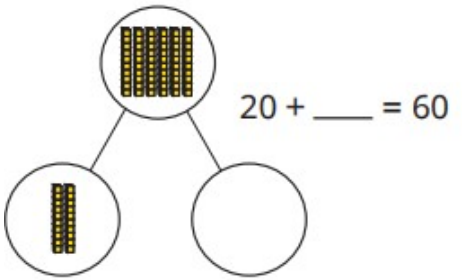
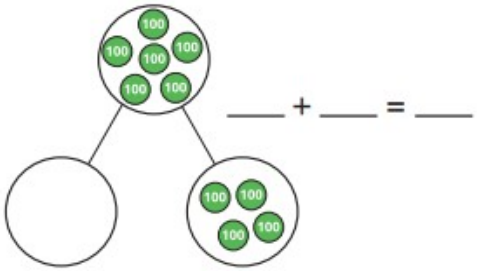
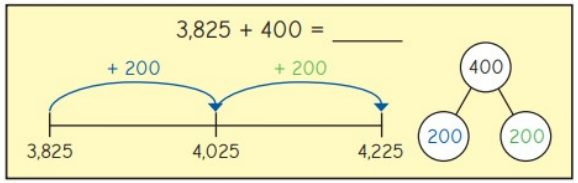
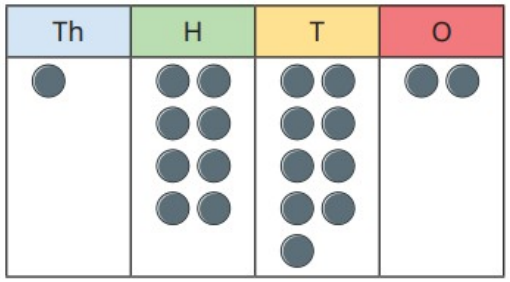
Year 3	Add two numbers (without exchanging)	 21 + 33  233 + 221  541 + 237	   	Column addition

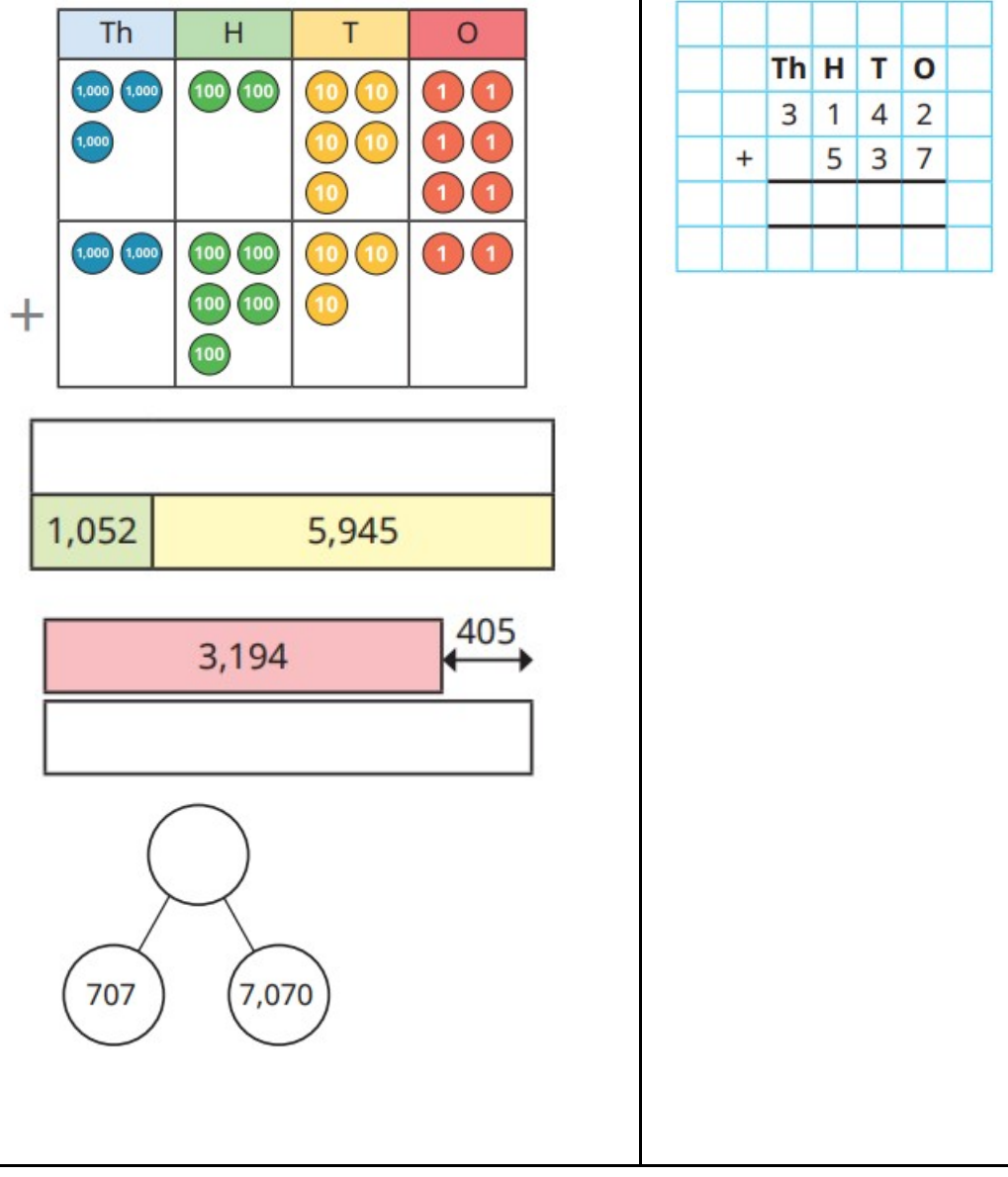
Year 3	Add two numbers (across a 10)	   		 

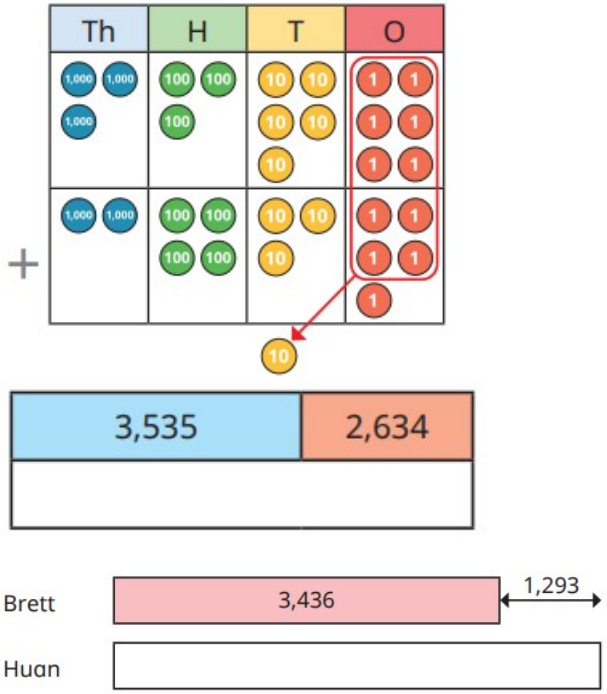
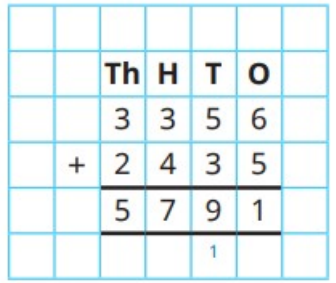
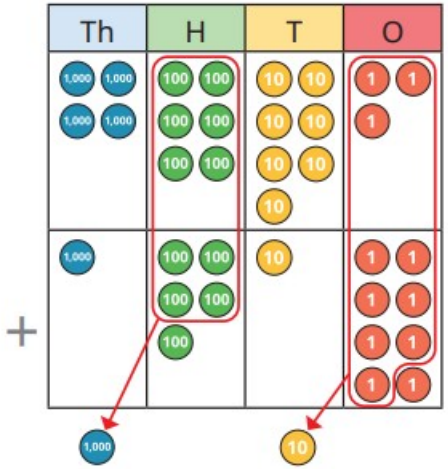
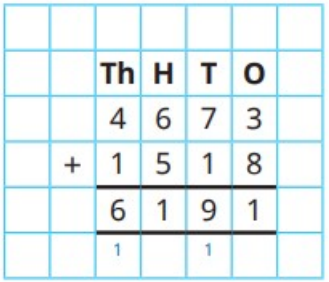
Year 3	Add two numbers (across a 100)			
Year 3	Subtract two numbers (across a 10)			

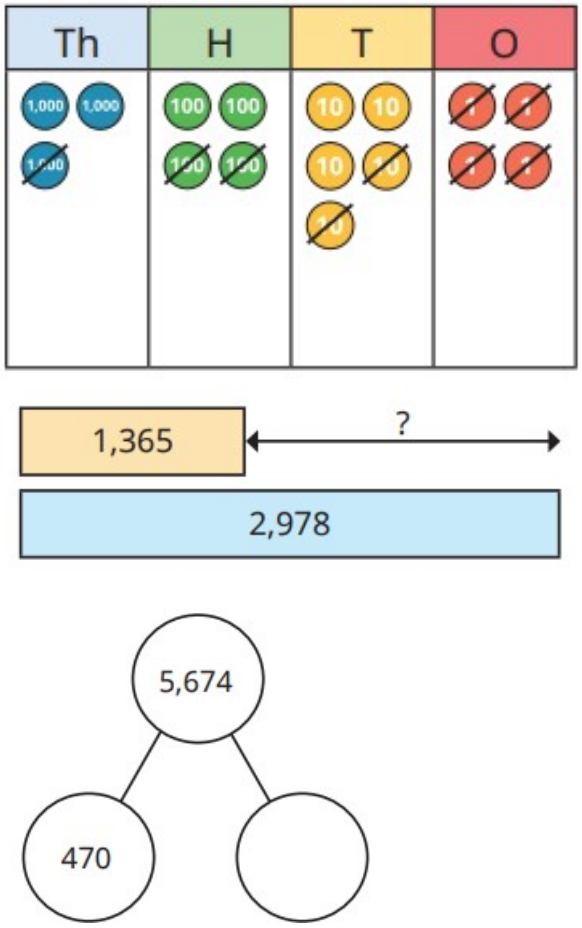
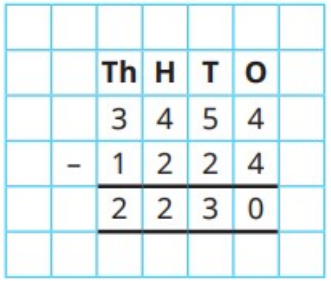
Year 3	Subtract two numbers (across a 100)	Refer to methods taught in Year 3, subtraction of two numbers across 10.	  	

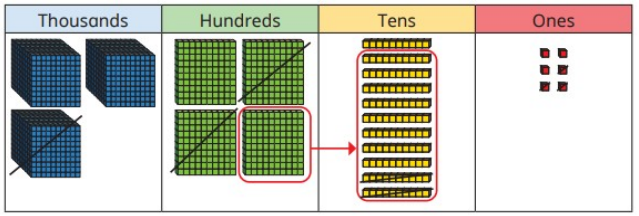
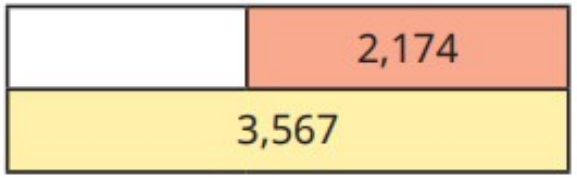
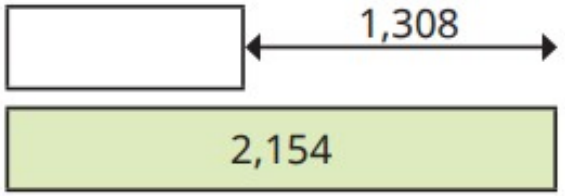
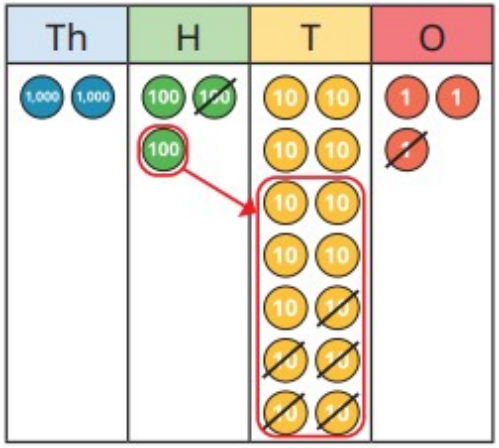
Year 3	Add 2-digit and 3-digit numbers	Refer to year 3, add two numbers without exchanging		
Year 3	Subtract a 2-digit number from a 3-digit number	Refer to methods taught in Year 3, subtraction of two numbers across 10 for methods and resources		

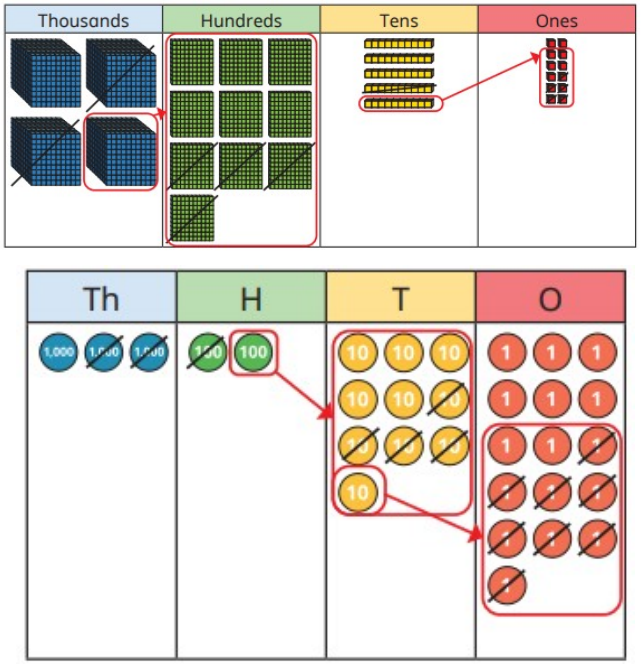
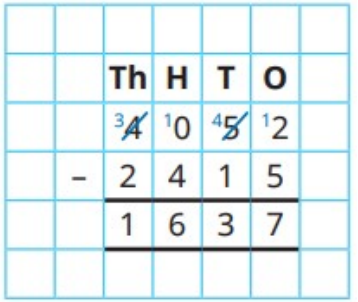
Year 4	Add and subtract 1s, 10s, 100s and 1000s	  	    	1364 + 3 1364 + 30 1364 + 300 1364 + 3000 1364—1 1364—60 1364—200 1364—1000

Year 4	Add up to two 4-digit numbers—no exchange	Refer to Year 3, add two numbers (without exchanging)		

Year 4	Add two 4-digit numbers—one exchange	Refer to Year 3, add two numbers ((across a 100) and add two numbers ((across a 100).		
Year 4	Add two 4-digit numbers—more than one exchange	Refer to Year 3, add two numbers ((across a 100) and add two numbers ((across a 100).		

Year 4	Subtract two 4-digit numbers—no exchange	Refer to methods taught in Year 3, subtraction of two numbers across 10.		

Year 4	Subtract two 4-digit numbers—one exchange	Refer to methods taught in Year 3, subtraction of two numbers across 10.	   	

Year 4	Subtract two 4-digit numbers—more than one exchange	Refer to methods taught in Year 3, subtraction of two numbers across 10.		

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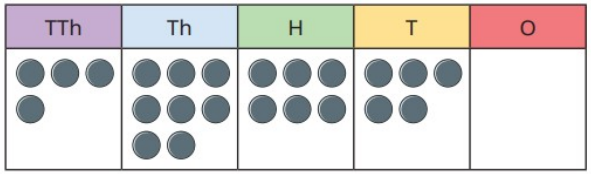
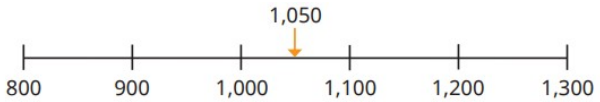
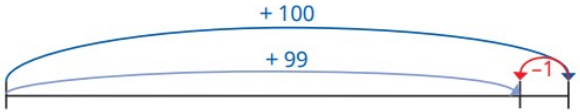
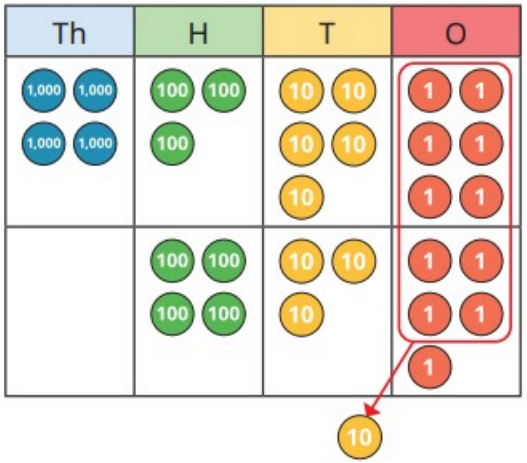
<td>Year 5</td>
<td>Mental strategies</td>
<td></td>
<td>


▸ 48,650 – 3,000 ▸ 43,650 – 200 ▸ 43,650 – 10
▸ 48,650 – 3,210 ▸ 48,650 – 7,100 ▸ 48,650 – 5,030



Use the number line to help you work out the calculations.
▸ 1,050 + 100 ▸ 1,050 – 100

The number line shows a method for adding 99 mentally.


</td>
<td>3724 + 999
3724 + 990
3724—999
3724—990</td>
</tr>
<tr>
<td>Year 5</td>
<td>Add whole numbers with more than four digits</td>
<td>Refer to Year 3, add two numbers ((across a 100) and add two numbers ((across a 100).</td>
<td>


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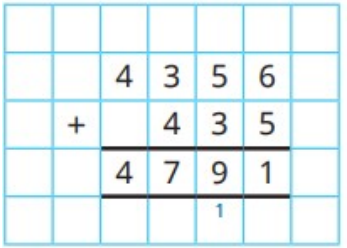

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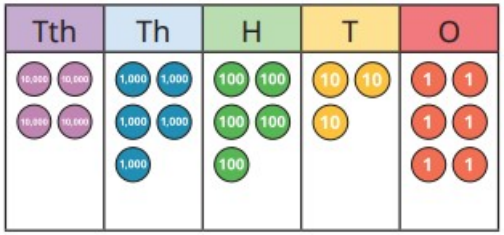
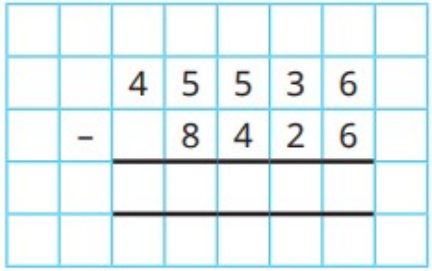
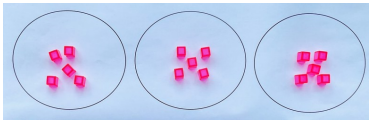
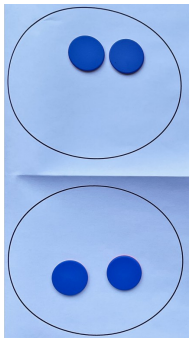
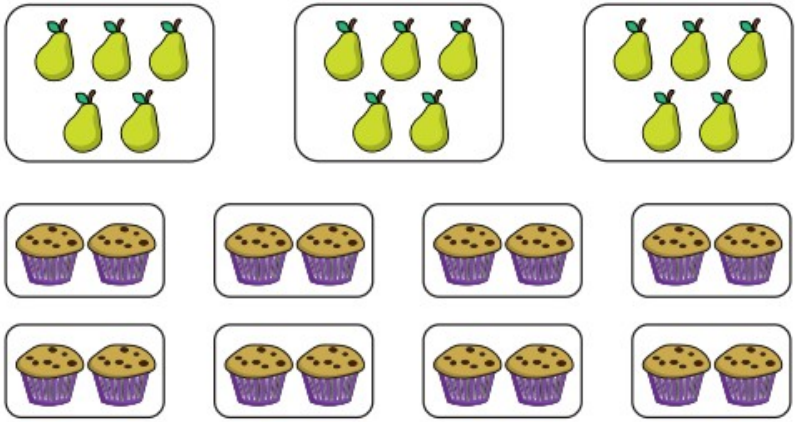
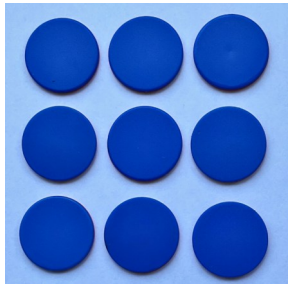
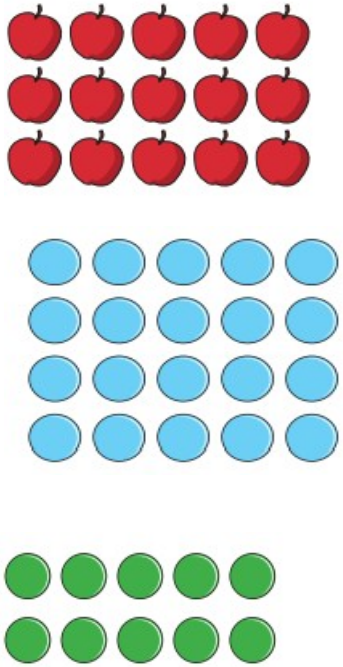
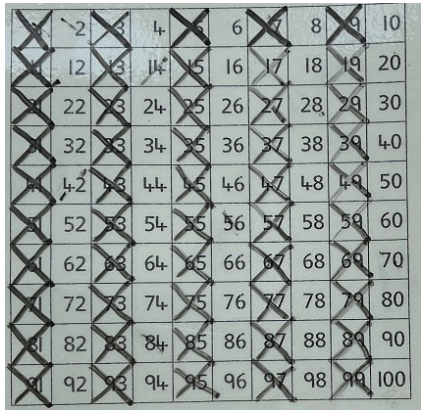
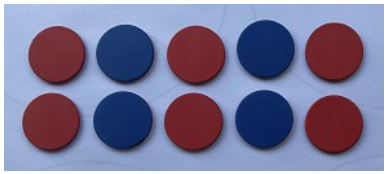
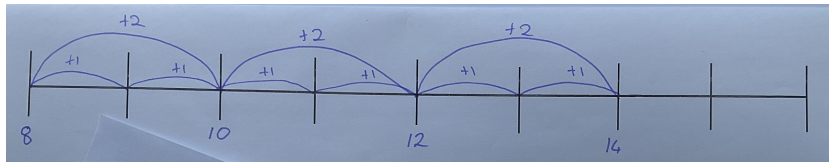
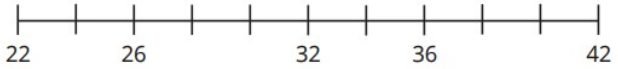
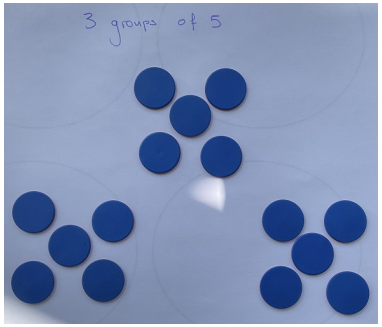
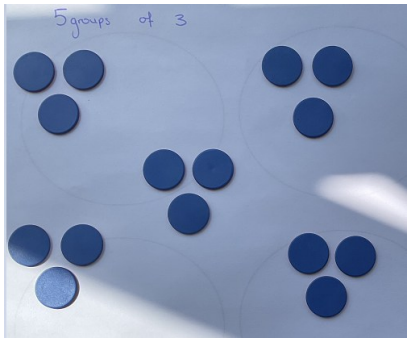
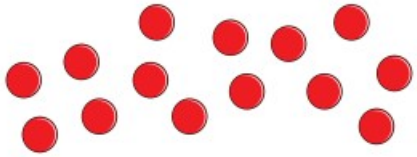
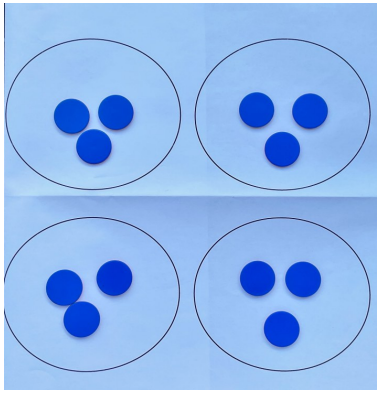
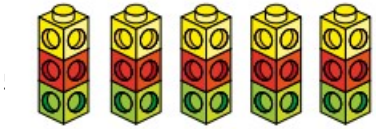
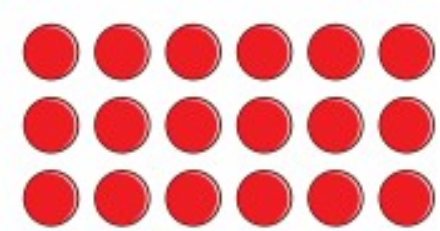
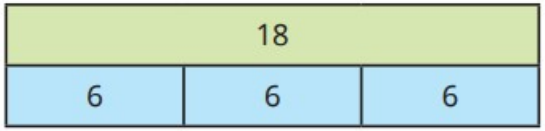
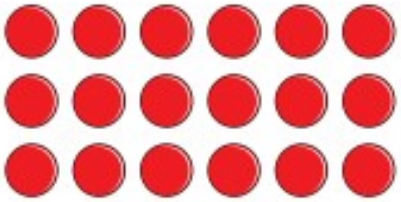
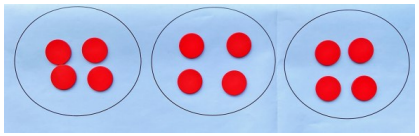
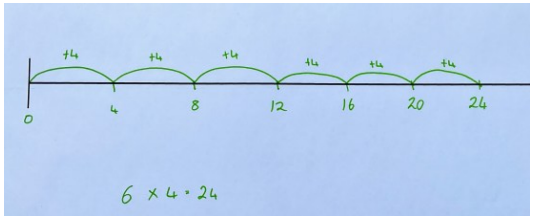
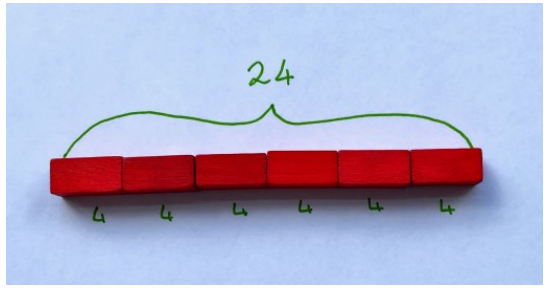
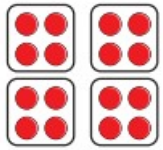
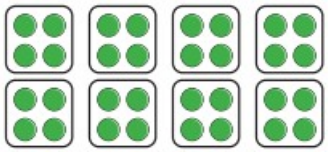
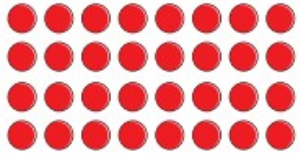
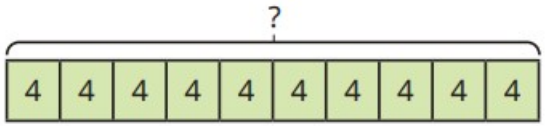
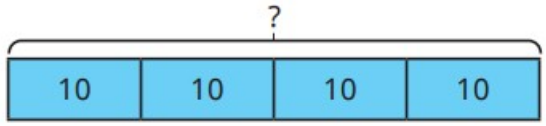
Year 5	Subtract whole numbers with more than four digits	Refer to methods taught in Year 3, subtraction of two numbers across 10.		

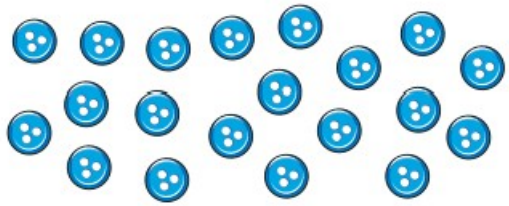
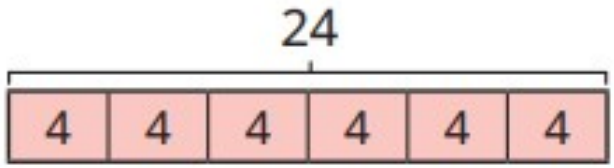
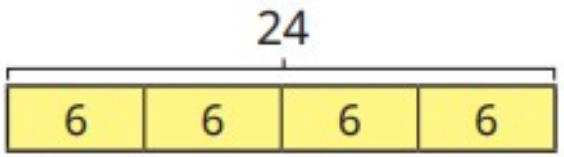
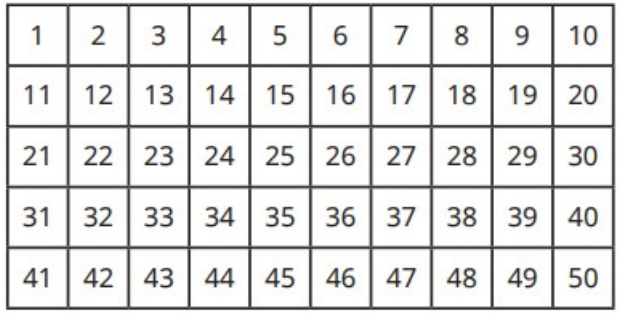
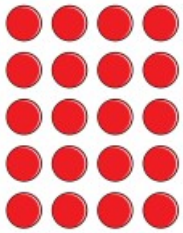
Multiplication and divison	Objective	Concrete	Pictorial	Abstract
Year 3	Equal groups	Representation shown with cubes or counters but if it is possible to use the actual objects spoken about in questions, please use these.  		
Year 3	Use arrays			3 x 5 5 x 3 4 x 5 5 x 4 2 x 5 5 x 2

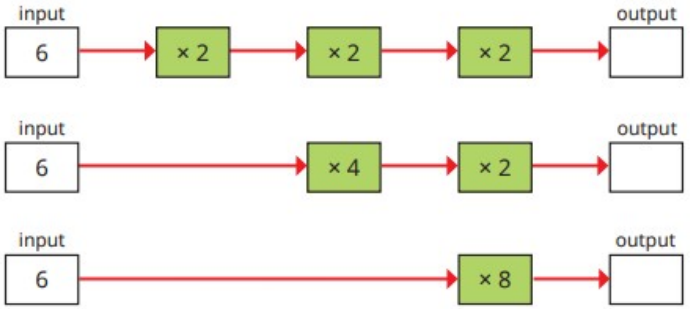
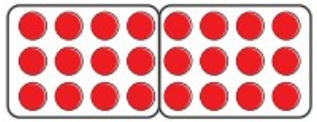
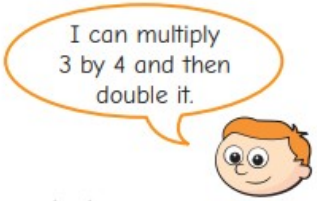
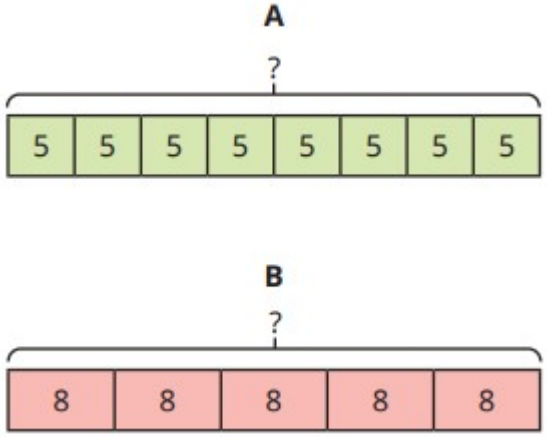
Year 3	Multiples of 2	  	 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 	
Year 3	Multipels of 5 and 10	 	0 5 15 25 60 55 45 110 90 70 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	

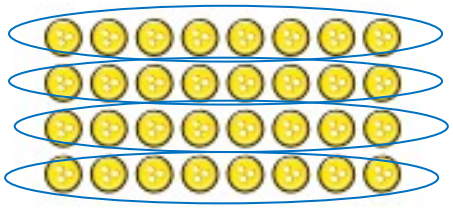
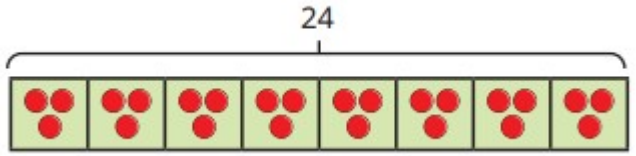
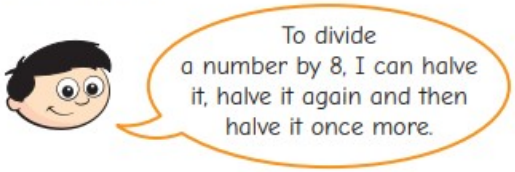
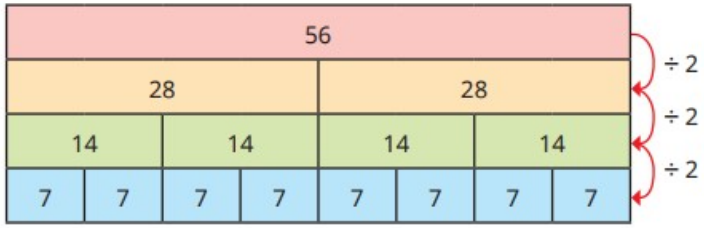
Year 3	Sharing and grouping	Refer to multiples and arrays to support children with this objective.	Difference between sharing and grouping—add this in 	
Year 3	Multiply by 3		 5 towers, in each tower, there are 3 cubes. How many cubes altogether?  3 vases, 9 flowers in each vase there are 9 flowers. How many flowers altogether?	5 x 3 3 x 5 3 x 9 9 x 3

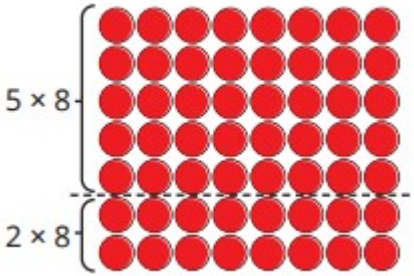
Year 3	Divide by 3	Use resources found in Year 3 making arrays and multiply by 3	 There are _____ strawberries altogether. There are _____ strawberries on each plate.  	_____ ÷ 3 = _____ _____ ÷ 3 = _____ 18 ÷ 3 = 6
Year 3	The 3 times table			1 x 3 = _____ 2 x 3 = _____ 3 x 3 = _____ 4 x 3 = _____ 5 x 3 = _____ 24 = _____ x 8 12 = _____ x 3 _____ x 3 = 21 _____ = 5 x 3 2 ____ x 6 = 3

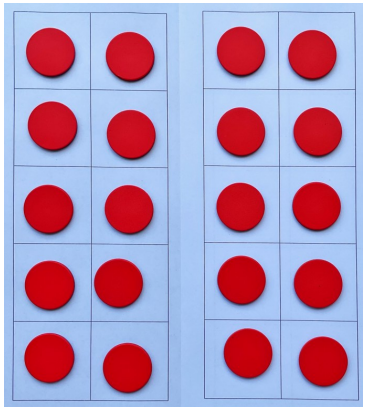
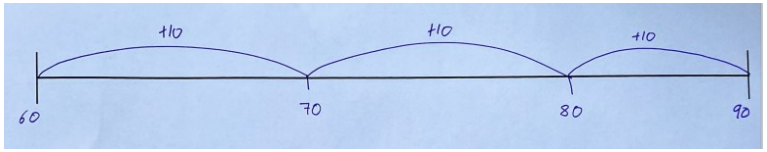
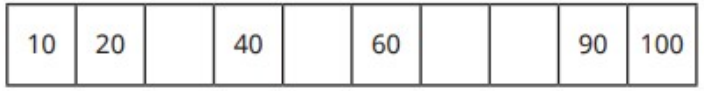
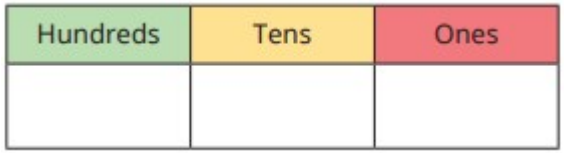
Year 3	Multiply by 4	  	t.      	4 x 5 5 x 4 4 x 4 4 x 8 8 x 4 4 x 8 8 x 4 4 x 10 10 x 4 4 x 10 10 x 4

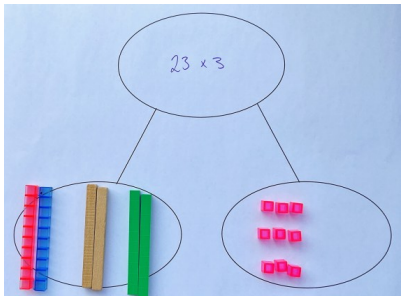
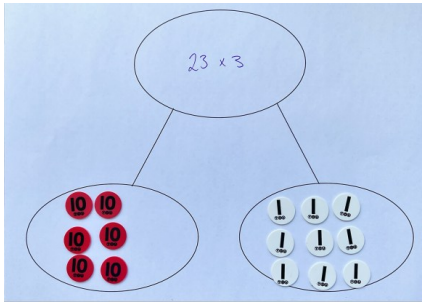
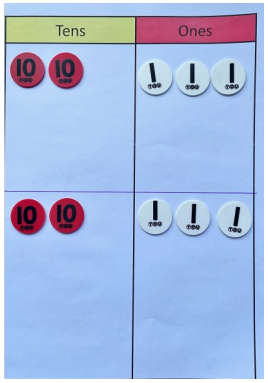
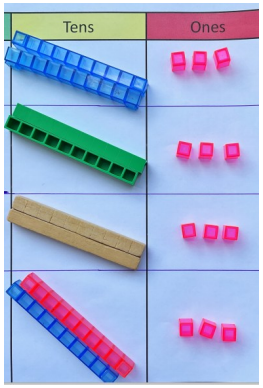
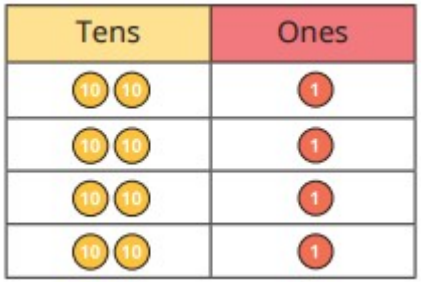
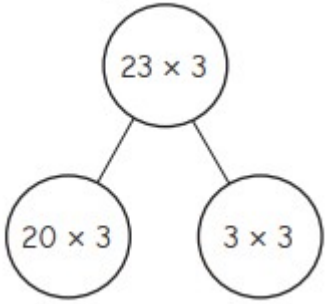
Year 3	Divide by 4	Refer to Year 4, multiply by 4 for resources to use.	  	
Year 3	4 times table	Refer to Year 4, multiply by 4 for resources to use.	  **Add picture of 4 times table on a number line**	

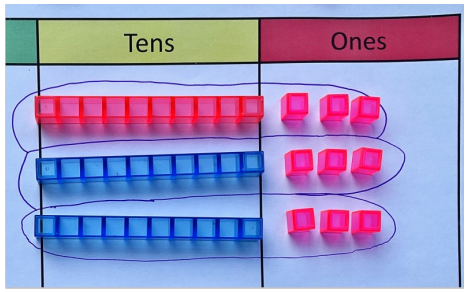
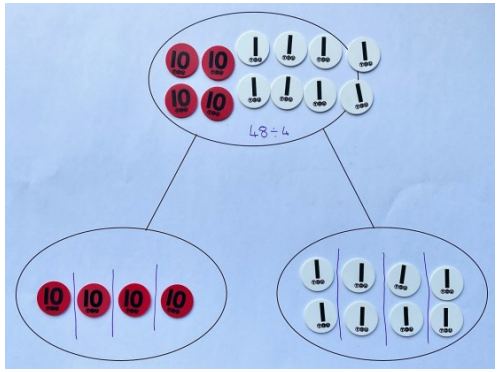
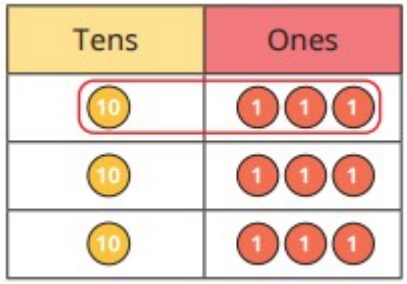
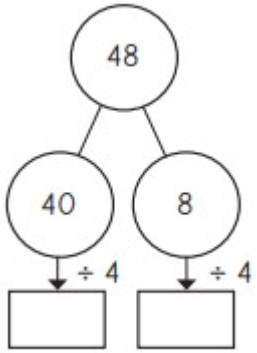
Year 3	Multiply by 8	Refer to Year 4, multiply by 4 and adapt to multiplying by 8.	 Ron has drawn an array to help him work out 3 × 8   	

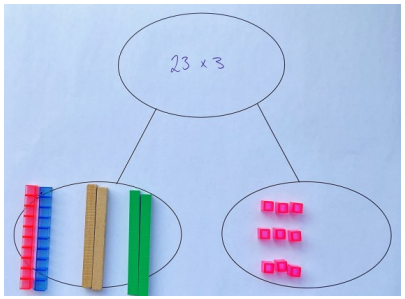
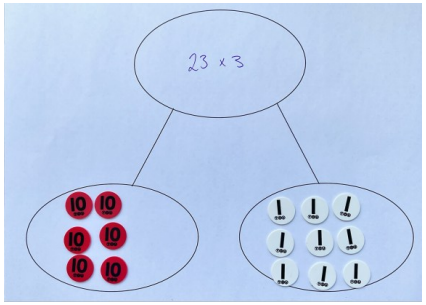
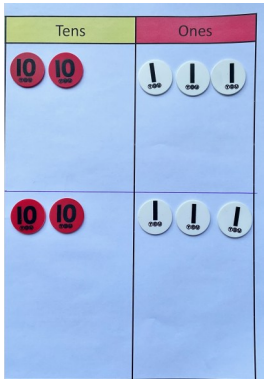
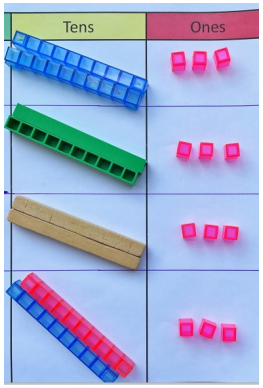
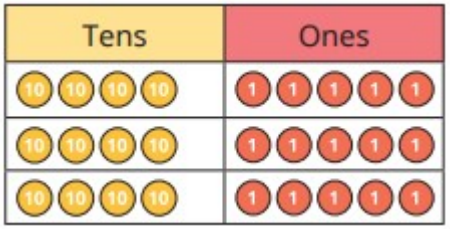
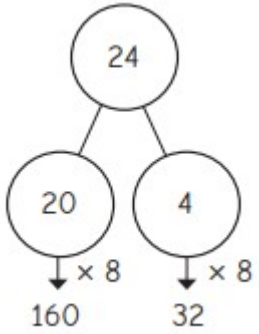
Year 3	Divide by 8	Refer to Year 4, multiply by 4 and adapt to divide by 8.	  Dexter is working out 56 ÷ 8  	

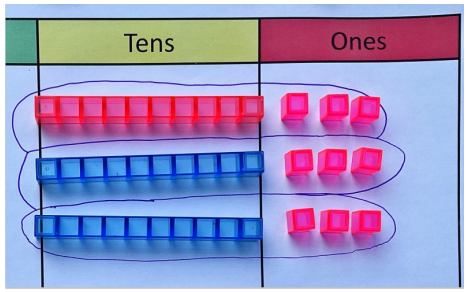
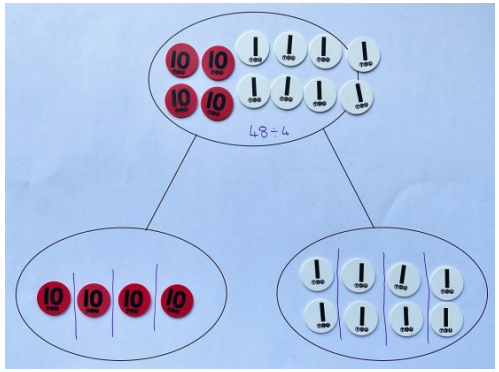
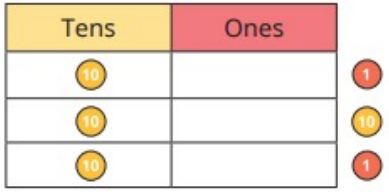
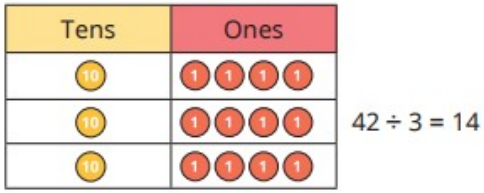
Year 3	The 8 times table	Refer to Year 4, multiply by 4 and adapt to multiplying by 8.	 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100	Partitioning: 7 x 8 = 5 x 8 + 2 x 8 = 40 + 16 = 56

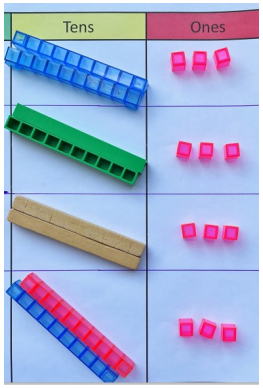
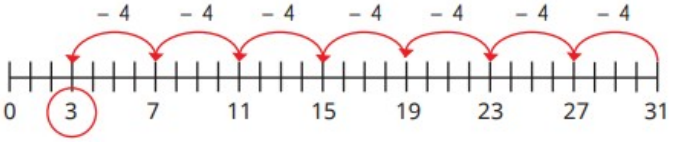
Year 3	Multiples of 10	 	Number tracks  Tens frames  Place value chart 	14 x 10 19 x 10 10 x 23 10 x 26

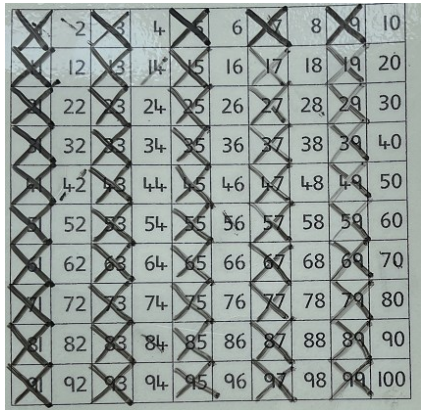
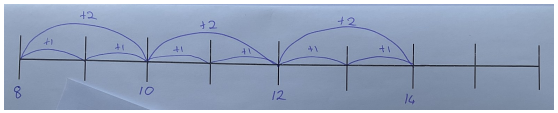
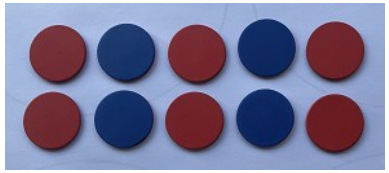
Year 3	Multiply a 2-digit number by a 1-digit number (no exchange)	   	  	32 x 3 23 x 2 12 x 4 41 x 2 21 x 5 42 c 2 52 x 2 21 x 6

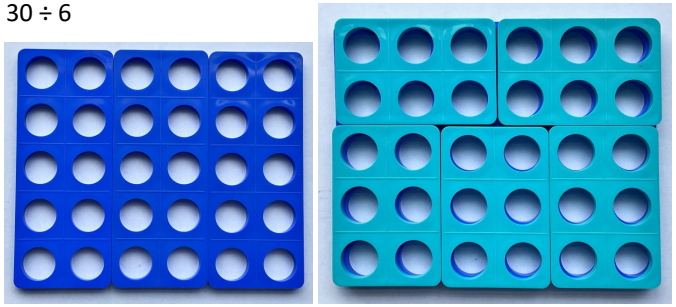
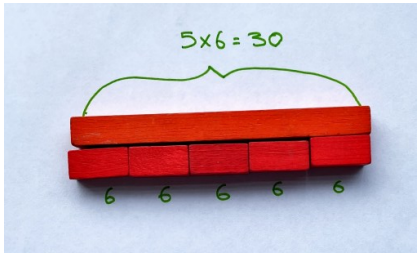
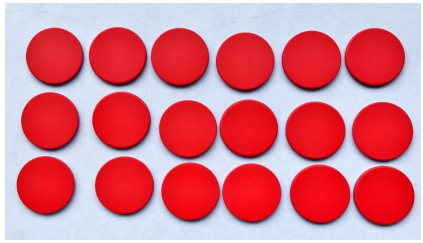
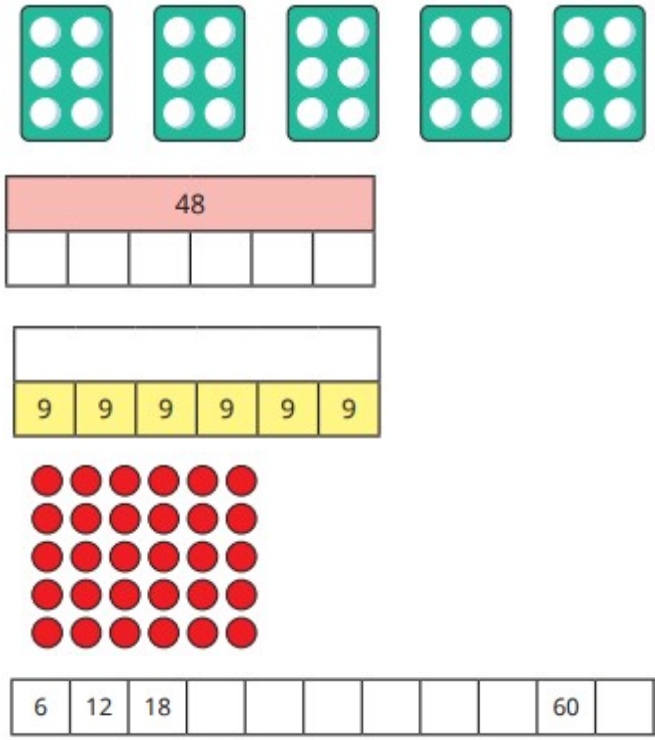
Year 3	Divide a 2-digit number by a 1-digit number (no exchange)	 	39 ÷ 3  48 ÷ 4 	84 ÷ 4 66 ÷ 2 66 ÷ 3 69 ÷ 3

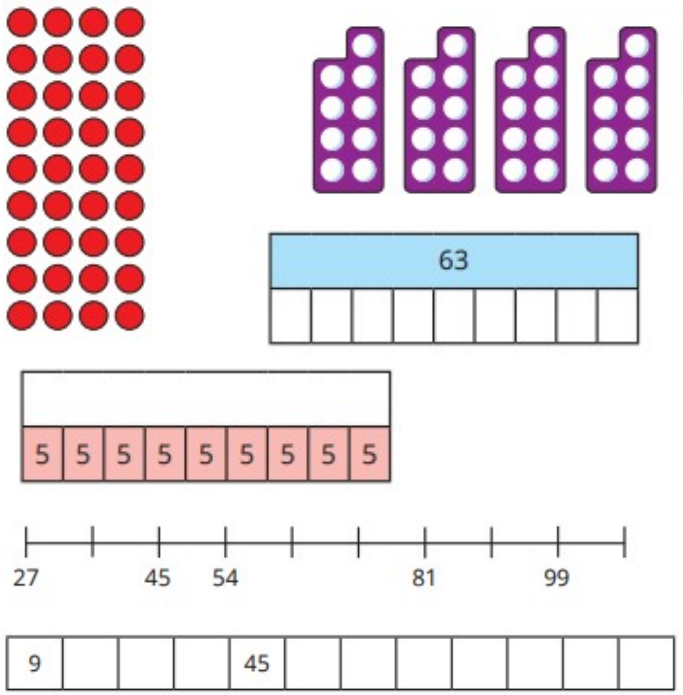
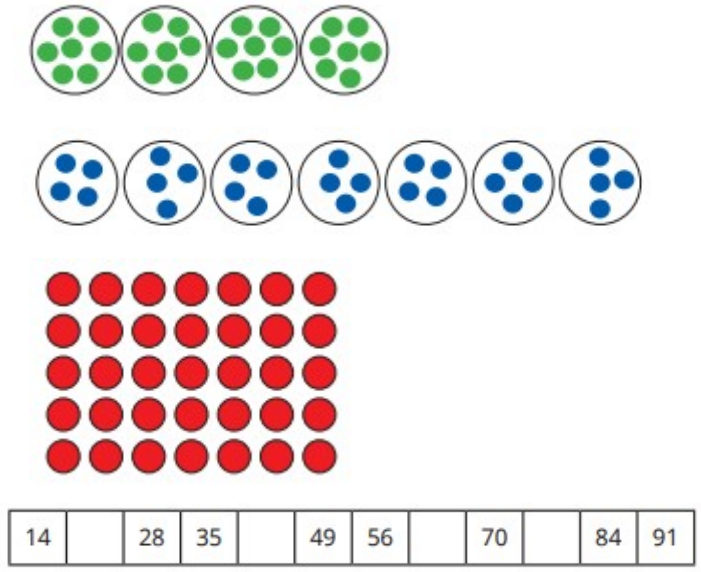
Year 3	Multiply a 2-digit number by a 1-digit number (with exchange)	   	  	13 x 4 23 x 4 14 x 8 25 x 3

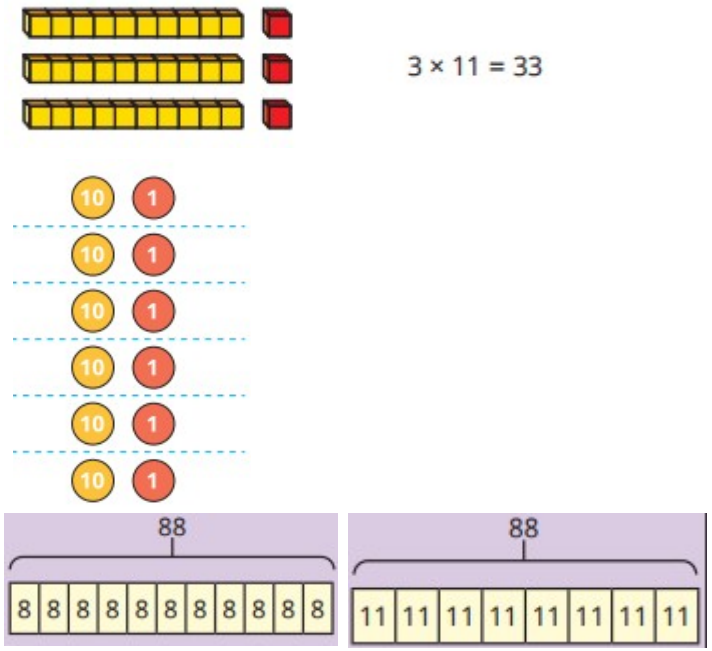
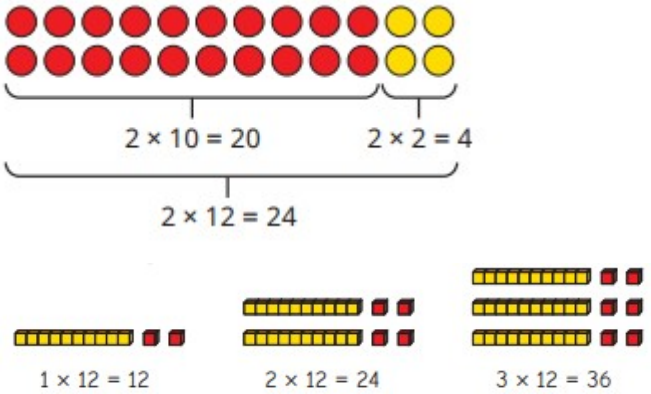
Year 3	Divide a 2-digit number by a 1-digit number (flexible partitioning)	 	Ron uses place value counters to work out 42 ÷ 3 First, he shares the tens into 3 equal groups. He has 1 ten and 2 ones left over.  Ron exchanges the remaining ten for 10 ones. Then he shares the ones into 3 equal groups. 	48 ÷ 3 52 ÷ 4 65 ÷ 5 72 ÷ 6

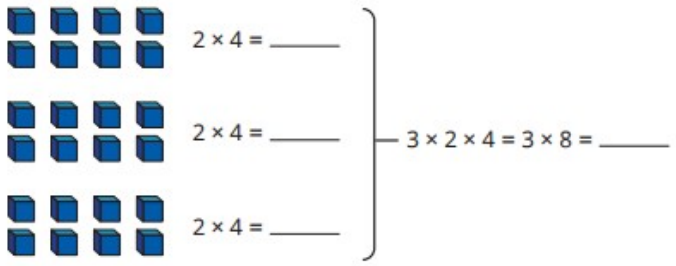
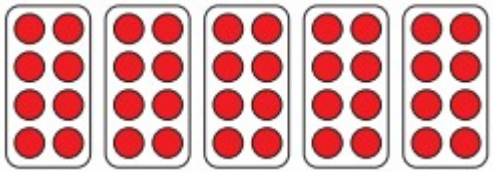
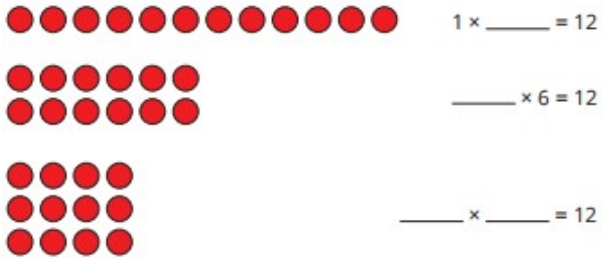
Year 3	Divide a 2-digit number by a 1-digit number (with remainders)		Repeated subtraction 31 ÷ 4  94 ÷ 4 Alex uses place value counters to work out 94 ÷ 4 First, she shares the tens into 4 equal groups.  She needs to exchange the remaining ten for 10 ones. Alex shares as many of the ones as possible into 4 equal groups.  94 ÷ 4 = 23 r2	76 ÷ 3 62 ÷ 5 58 ÷ 4 83 ÷ 6

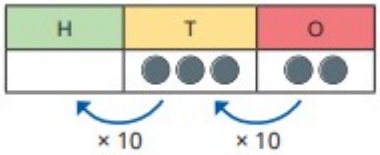
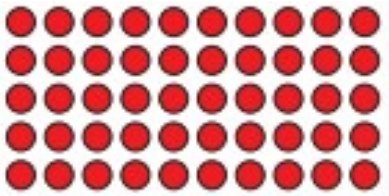
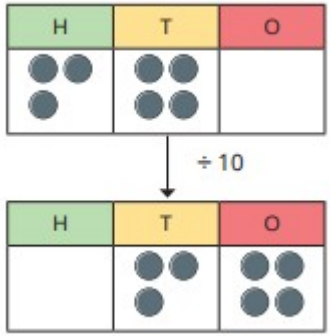
Year 4	Multiples of 3	  	Number track 3 | 6 | | 12 | | 18 | 21 | 24 | | | 33 | 36 Hundred square 1 2 **3** 4 5 **6** 7 8 **9** 10 11 **12** 13 14 **15** 16 17 **18** 19 20 **21** 22 23 **24** 25 26 **27** 28 29 **30** 31 32 **33** 34 35 **36** 37 38 **39** 40 41 **42** 43 44 **45** 46 47 **48** 49 50 **51** 52 53 **54** 55 56 **57** 58 59 **60** 61 62 **63** 64 65 **66** 67 68 **69** 70 71 **72** 73 74 **75** 76 77 **78** 79 80 **81** 82 83 **84** 85 86 **87** 88 89 **90** 91 92 **93** 94 95 **96** 97 98 **99** 100	

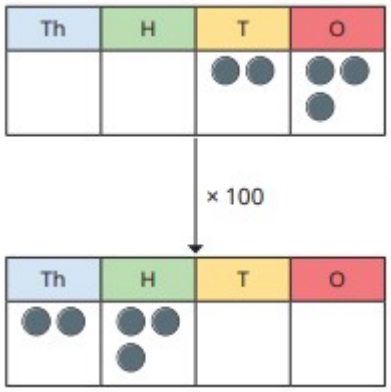
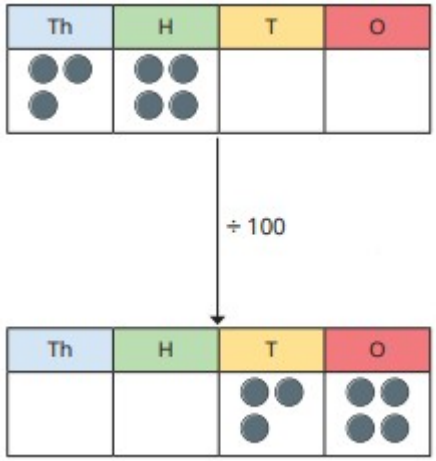
Year 4	Multiply and divide by 6	30 ÷ 6   6 x 3 		6 + 6 + 6 + 6 + 6

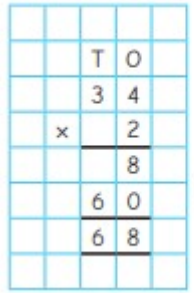
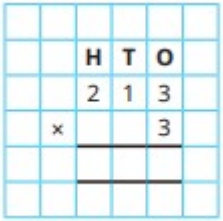
Yea 4	Multiply and divide by 9	Refer to strategies used in Year 4, multiply and divide by 6		7 x 9 3 x 9 9 x 9 19 x 9 108 ÷ 9 81 ÷ 9 27 ÷ 9 63 ÷ 9
Year 4	Multiply and divide by 7	Refer to strategies used in Year 4, multiply and divide by 6		6 x 7 9 x 7 11 x 7 7 x 3 28 ÷ 7 84 ÷ 7 56 ÷ 7

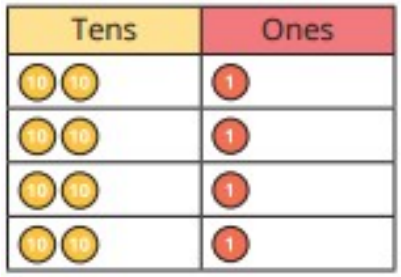
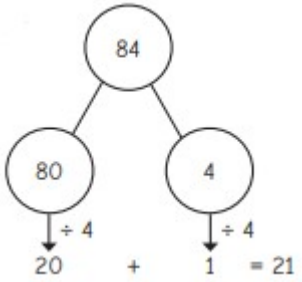
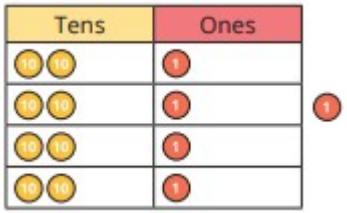
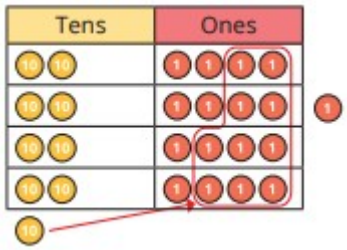
Year 4	11 times table and division facts	Refer to strategies used in Year 4, multiply and divide by 6.		5 x 11 8 x 11 10 x 11 11 x 6 11 x 7
Year 4	12 times table and division facts	Refer to strategies used in Year 4, multiply and divide by 6.		5 x 12 8 x 12 12 x 10 7 x 12 12 x 6 12 x 12

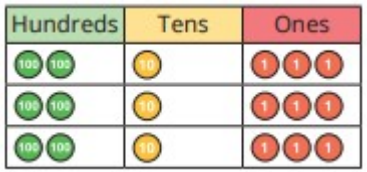
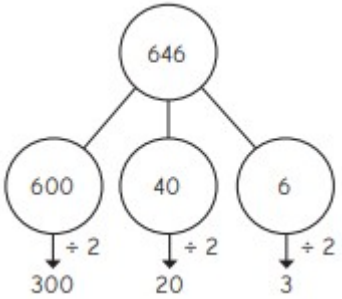
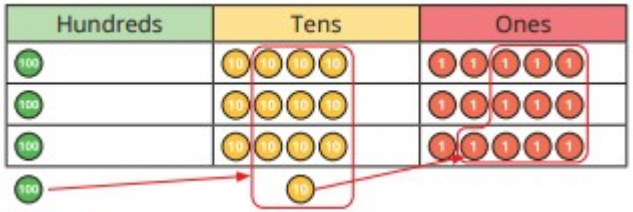
Year 4	Multiply three numbers		2 x 4 x 3  4 x 2 x 5 	5 x 2 x 6 8 x 4 x 5 2 x 8 x 6 7 x 4 x 2 3 x 5 x 4
Year 4	Factor pairs		Complete the factor pairs of 12 and the sentences.  	18 = 1 x 18 18 = 2 x 9 18 = 3 x 6

Year 4	Multiply by 10		13 x 10  	23 x 10 16 x 10 31 x 10 10 x 82 10 x 43
Year 4	Divide by 10		  	480 ÷ 10 620 ÷ 10 930 ÷10

Year 4	Multiply by 100		23 x 100 	41 x 100 94 x 100 83 x 100
Year 4	Divide by 100		400 ÷ 100  3400 ÷ 100 	

Year 4	Multiply a 2digit number by a 1-digit number		34 x 2  	 (4 × 2 = 8) (30 × 2 = 60)
Year 4	Multiply a 3-digit number by a 1-digit number		 	

Year 4	Divide a 2-digit number by a 1-digit number		84 ÷ 4   85 ÷ 4  97 ÷ 4  	84 ÷ 7 78 ÷ 6 96 ÷ 8

Year 4	Divide a 3-digit number by a 1-digit number		639 ÷ 3  646 ÷ 2  435 ÷ 3  	

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<td>Multiplies and common multiples</td>
<td></td>
<td>Multiplies of 5
 
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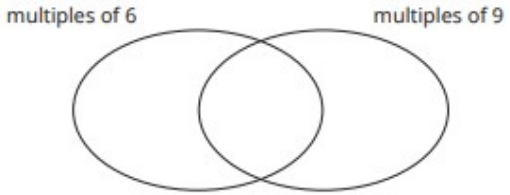
<td>  </td>
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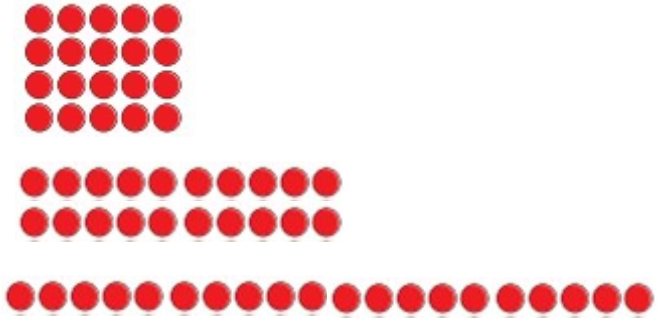
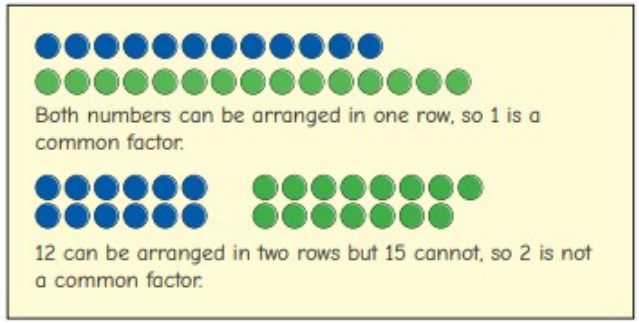
<td>Year 5</td>
<td>Factors and common factors</td>
<td></td>
<td>Factors of 20
 
Common factors of 12 and 15
  </td>
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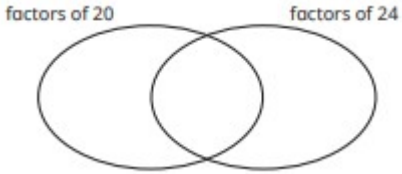
20 = 2 x 10
20 = 4 x 5
  </td>
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<table>
<tr>
<td>Year 5</td>
<td>Prime numbers</td>
<td></td>
<td>Arrays for 5:
5 x 1
 
This array does not work
 
There is no other way to arrange 5, so it must be a prime number</td>
<td><table>
<tr><th>Prime</th><th>Composite</th></tr>
<tr><td></td><td></td></tr>
<tr><td></td><td></td></tr>
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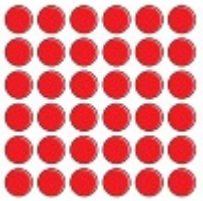
</tr>
<tr>
<td>Year 5</td>
<td>Square numbers</td>
<td></td>
<td>  3 x 3 = 9
  6 x 6 = 36</td>
<td>$3^2 = 9$
$6^2 = 36$</td>
</tr>
<tr>
<td>Year 5</td>
<td>Cubed numbers</td>
<td></td>
<td>$3^3 = 27$
  </td>
<td><table>
<tr><th>Size of cube</th><th>Calculation</th><th>Number of cubes</th></tr>
<tr><td>1^3</td><td></td><td>1</td></tr>
<tr><td>2^3</td><td></td><td>8</td></tr>
<tr><td>3^3</td><td>3 × 3 × 3</td><td></td></tr>
<tr><td>4^3</td><td></td><td></td></tr>
<tr><td>5^3</td><td></td><td></td></tr>
<tr><td>6^3</td><td>6 × 6 × 6</td><td></td></tr>
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</tr>
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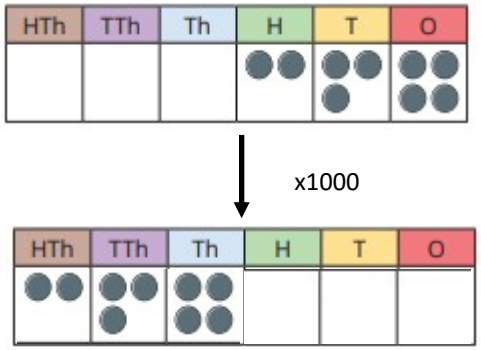
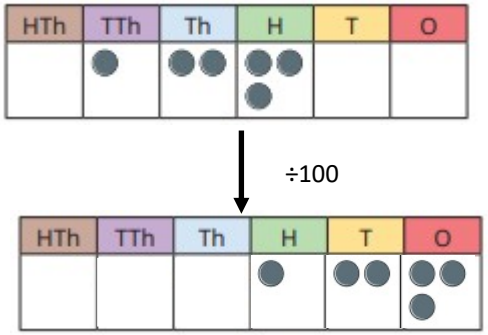
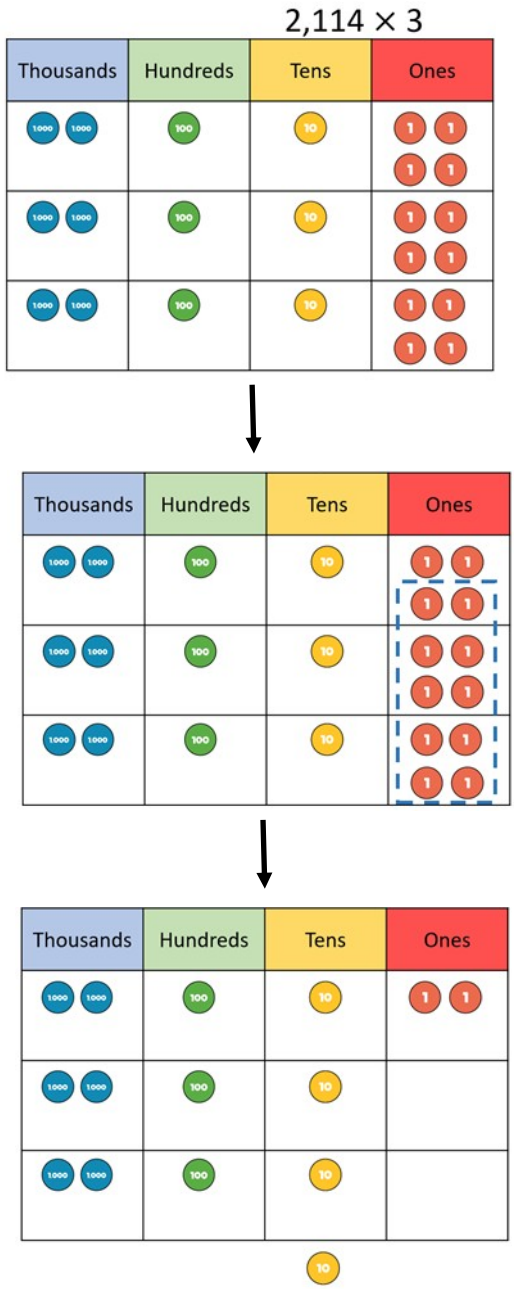
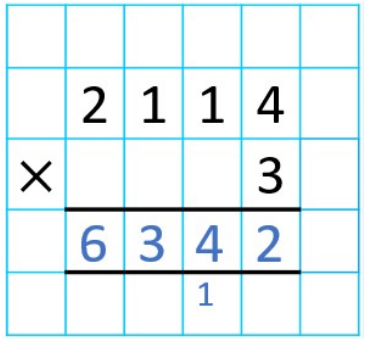
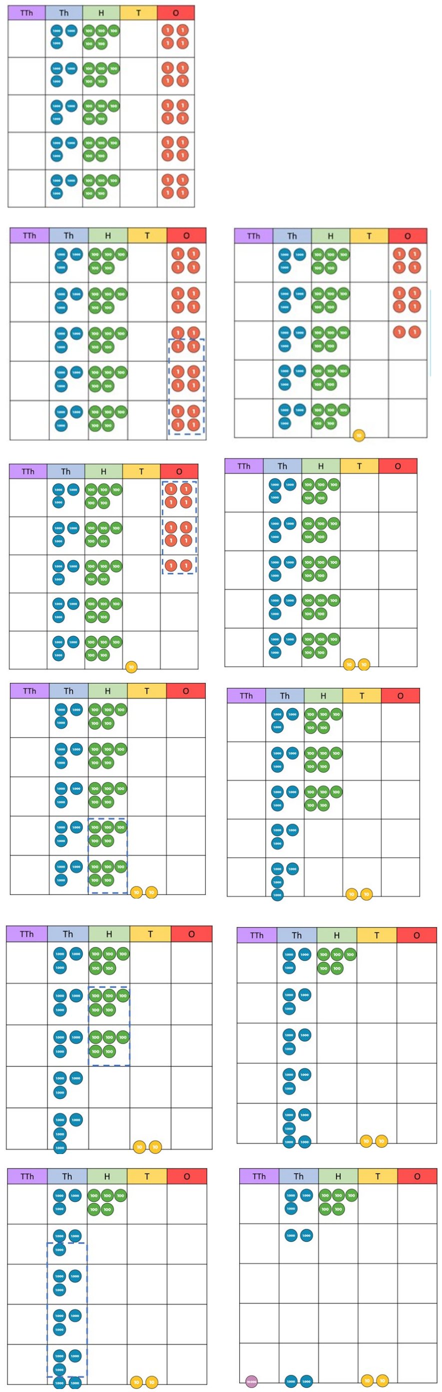
Year 5	Multiply by 10, 100 and 1000			4 x 10 4 x 100 4 x 1000 204 x 10 204 x 100 204 x 1000
Year 5	Divide by 10, 100 and 1000			64 000 ÷ 10 64 000 ÷ 100 64 000 ÷ 1000 5300 ÷ 100 460 ÷ 10 62 000 ÷ 1000

Year 5	Multiply up to a 4-digit number by a 1-digit number			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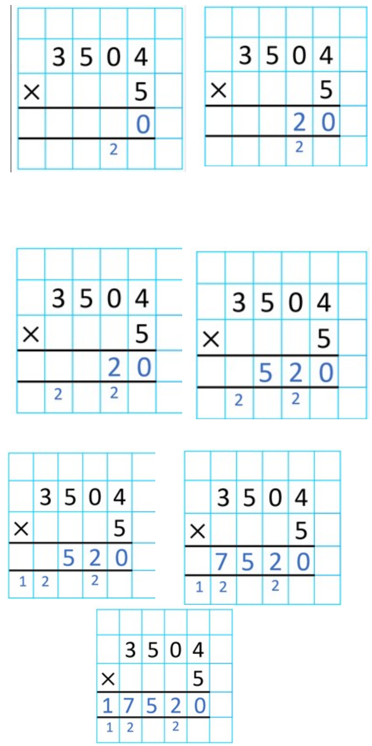
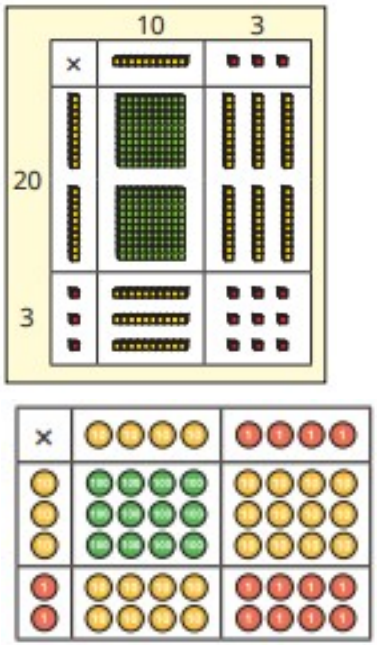
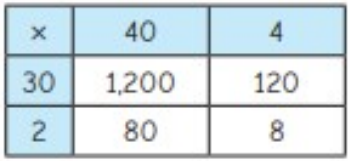
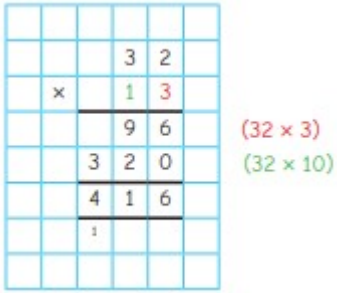
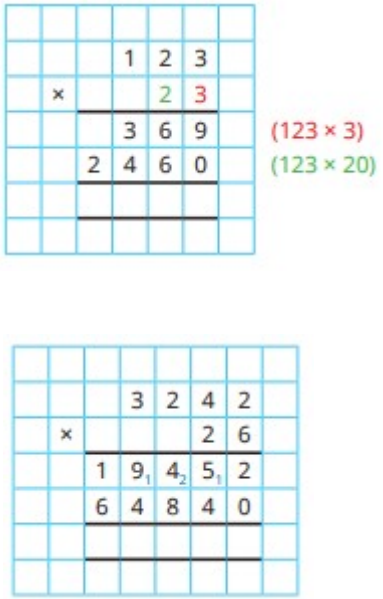
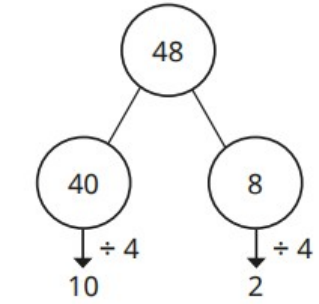
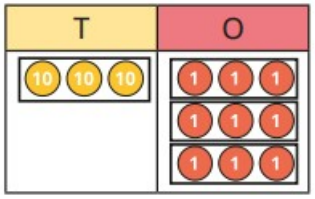
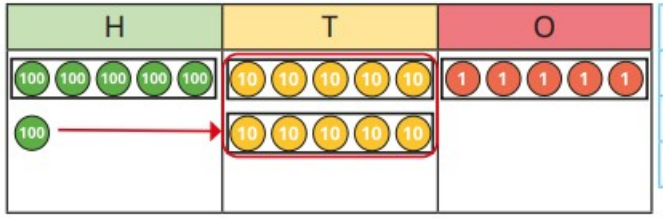
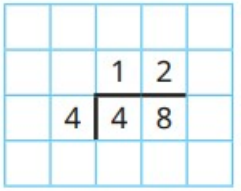
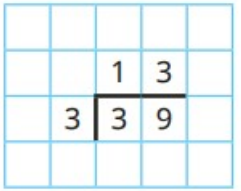
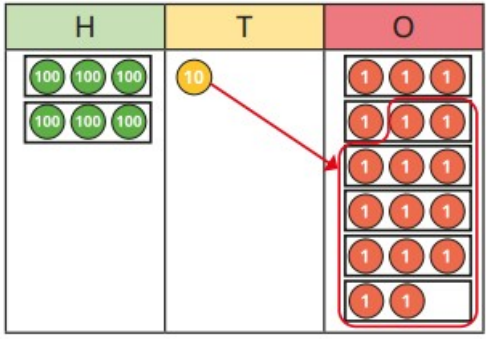
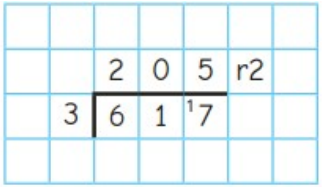
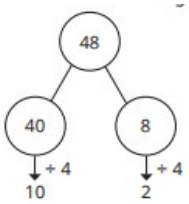
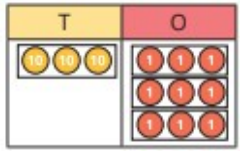
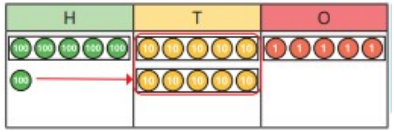
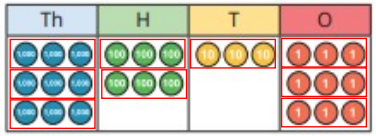
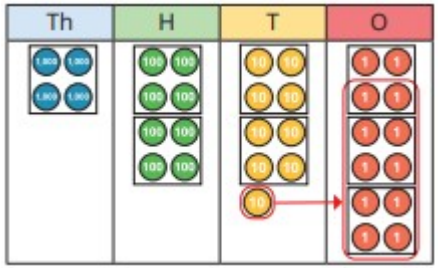
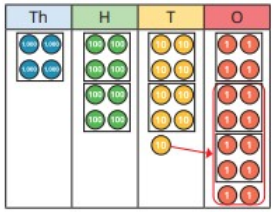
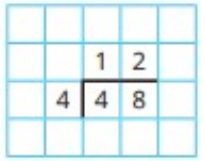
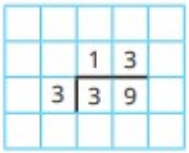
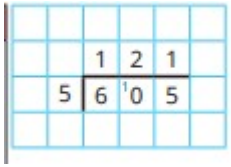
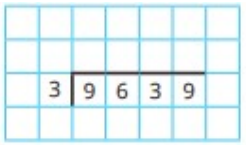
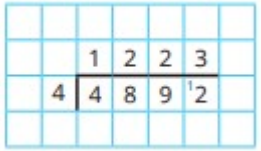
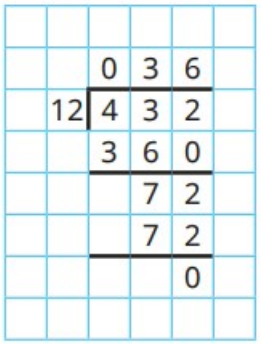
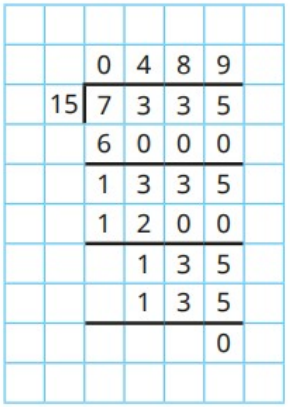
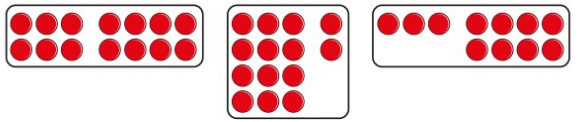

3 5 0 4
× 5
0
2
3 5 0 4
× 5
2 0
2
3 5 0 4
× 5
2 0
2 2
3 5 0 4
× 5
5 2 0
2 2
3 5 0 4
× 5
5 2 0
1 2 2
3 5 0 4
× 5
7 5 2 0
1 2 2
3 5 0 4
× 5
1 7 5 2 0
1 2 2

Year 5	Multiply a 2-digit number by a 2-digit number (area model)			
Year 5	Multiply a 2-digit number by a 2-digit number (long multiplication)		Use resources shown in Year 3 _____ to support children with multiplication steps	

Year 5	Multiply a 3-digit or 4-digit number by a 2-digit number		Use resources shown in: Year 3 divide by 3, 4 and 8 to support children with multiplication steps. Year 4 divide by 6, 9, 7, 11 and 12 to support children with multiplication steps.	

Year 5	Short division of numbers up to 4 digits by a 1 digit number		  	 
Year 5	Division with remainders			

Year 5	Dividing a 2-digit, 3-digit or 4-digit number by a one digit number (short division). Includes remainders		48 ÷ 4  39 ÷ 3  605 ÷ 5  9639 ÷ 3  4892 ÷ 4  4892 ÷ 4  	     

Year 6	Using long division to divide 4 digit numbers by 2 digit numbers		Use resources shown in: Year 3 divide by 3, 4 and 8 to support children with multiplication steps. Year 4 divide by 6, 9, 7, 11 and 12 to support children with multiplication steps.	 (12 × 30) (12 × 6)  (15 × 400) (15 × 80) (15 × 9)
Year 6	To understand the order of operations		 3 + 4 × 2 3 × 4 + 2 (3 + 4) × 2	(5 + 2) × 3 6 + 4 ÷ 2 5 + 2 × 3 (6 + 4) ÷ 2