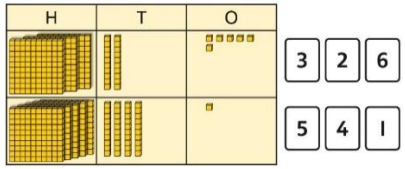
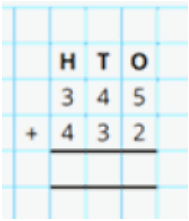
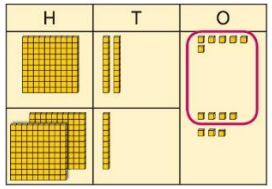
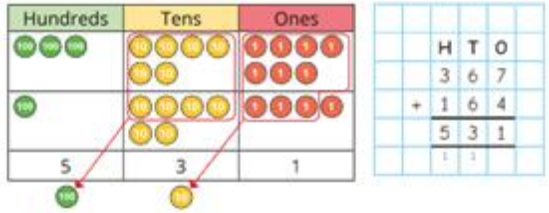
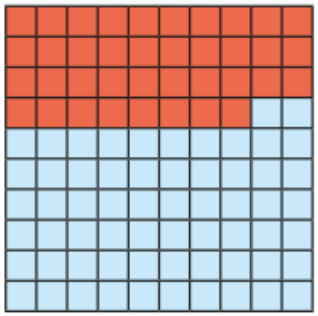
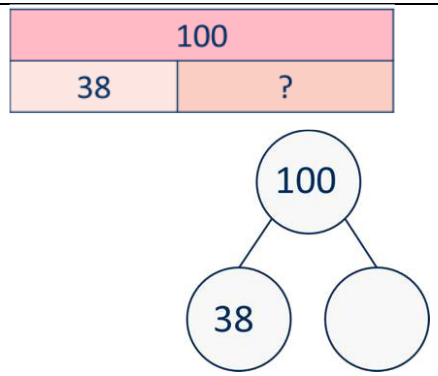
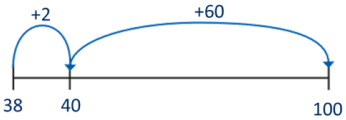
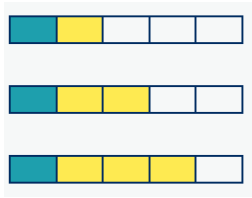
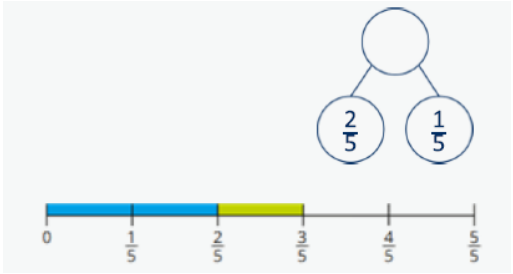
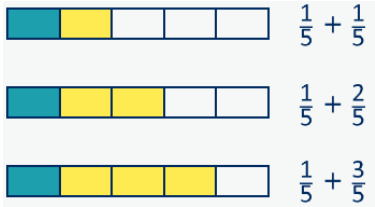
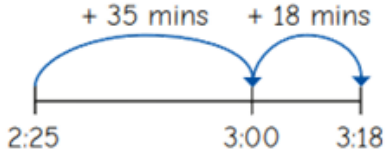
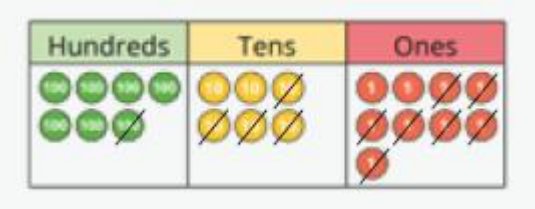
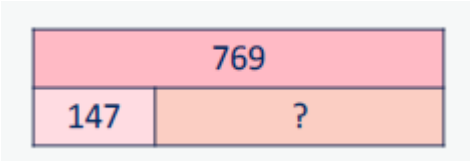
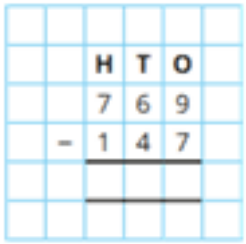
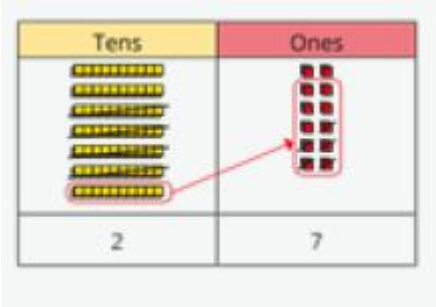
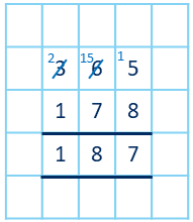
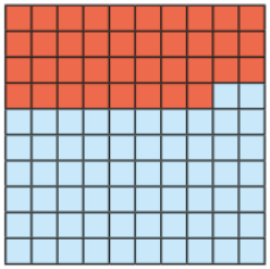
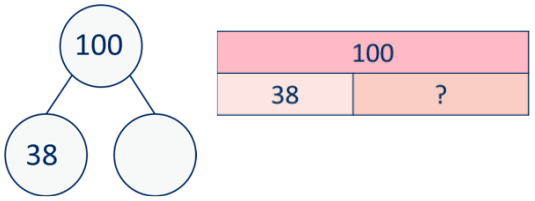
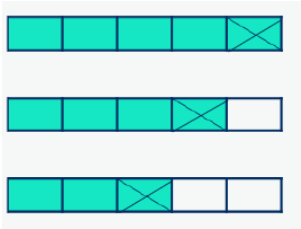
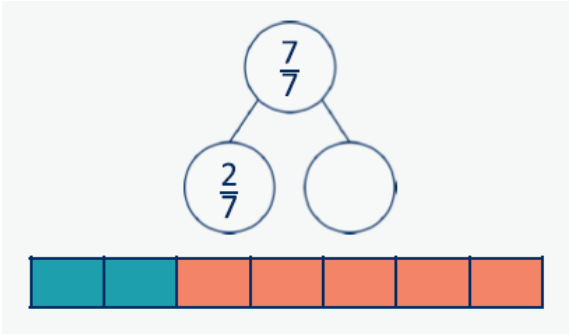
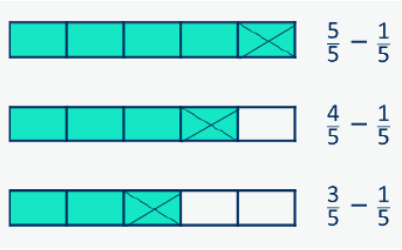
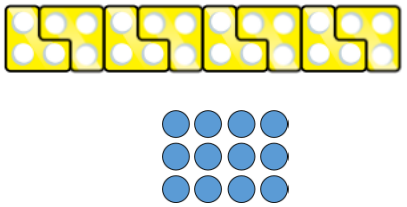
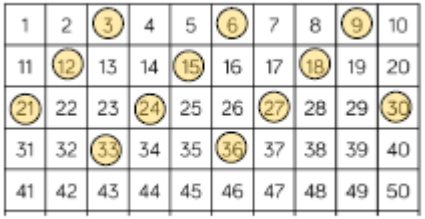
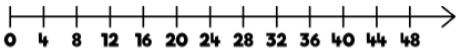
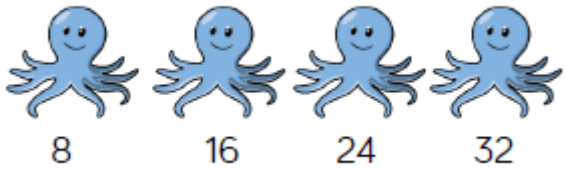
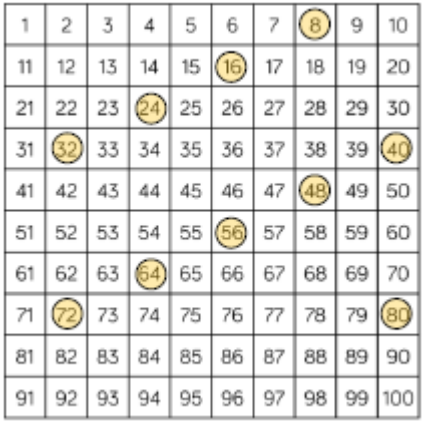
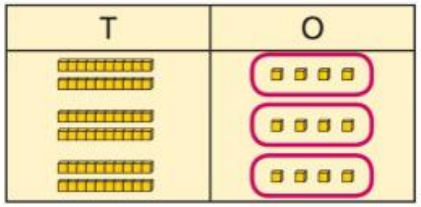
Year 3 Addition			
Concept	Concrete	Pictorial	Abstract
Add numbers with up to three digits using the formal written method of column addition- no exchange	Use place value equipment to make a representation of a calculation. This may or may not be structured in a place value grid. *326 + 541 is represented as:* 	Represent the place value grid with equipment to model the stages of column addition. 	Use a column method to solve efficiently, using known bonds. Children must understand how this relates to place value at every stage of the calculation. 
Add numbers with up to three digits using the formal written method of column addition- with exchange	Use place value equipment to enact the exchange required.  *There are 13 ones.* *I will exchange 10 ones for 1 ten.*	Model the stages of column addition using place value equipment on a place value grid. 	Use column addition, ensuring understanding of place value at every stage of the calculation.  Note: Children should also study examples where exchange is required in more than one column, for example *185 + 318 = ?*
Complements to 100	… plus … is equal to 100		I add … to get to the next 10, then ... to get to 100… 38 + 62 = 100

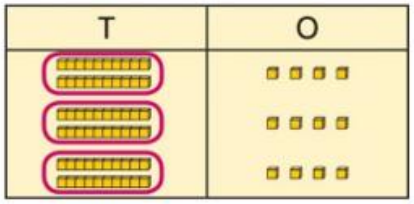
Pairs of numbers which total 100			62 + 38 = 100 100 = 38 + 62 100 = 62 + 38 
Add fractions with the same denominator within 1 whole Make links with known facts.	When adding fractions with the same denominator, I only add the numerator. … fifths + … fifths = … fifths 		
Calculate the duration of events Find durations of time between a given start and end point. Children will need to calculate			From … to … o'clock is … minutes. From … o'clock to … is … minutes. The total time taken is … minutes. 

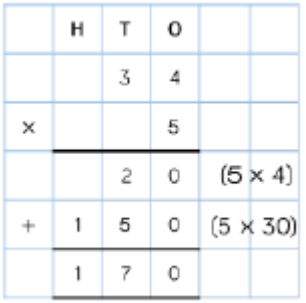
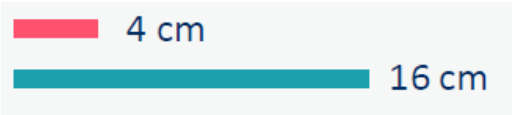
complements to 60			
Year 3 Subtraction			
Concept	Concrete	Pictorial	Abstract
Subtract numbers with up to three digits using formal written methods of column subtraction ***without*** exchange.	... ones − ... ones = ... ones ... tens − ... tens = ... tens ... hundreds − ... hundreds = ... hundreds 		
Subtract numbers with up to three digits using formal written methods of column subtraction ***with*** exchange.	I need to subtract ... ones. I do/do not need to make an exchange. I need to subtract ... tens. I do/do not need to make an exchange. I can exchange 1 ... for 10 ... 		

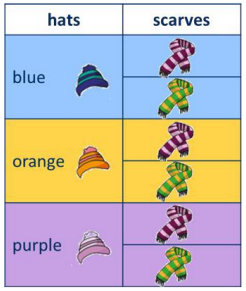
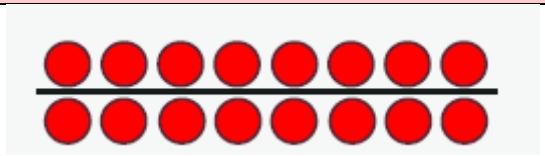
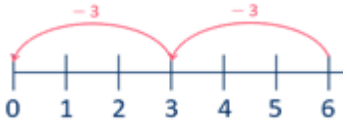
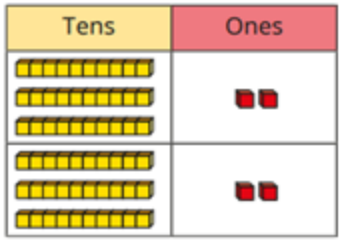
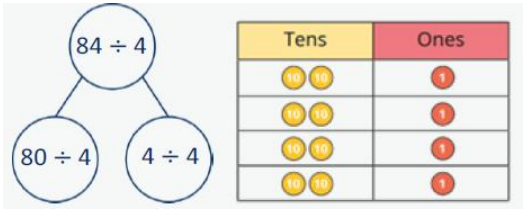
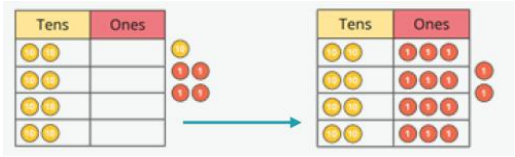
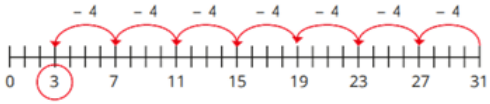
Complements to 100 Focus on subtraction facts. Encourage children to notice patterns.	100 minus … is equal to … 	I subtract … tens, then I subtract … ones. 	100 − 38 = 62 100 − 62 = 38 62 = 100 − 38 38 = 100 − 62
Subtract fractions with the same denominator within 1 whole Make links with known facts.	When subtracting fractions with the same denominator, I only subtract the numerator. … fifths − … fifths = … fifths 		

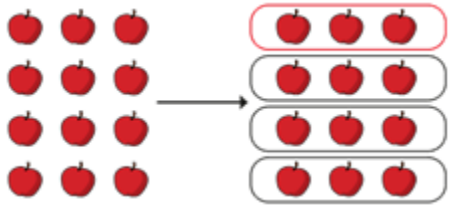
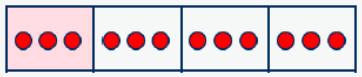
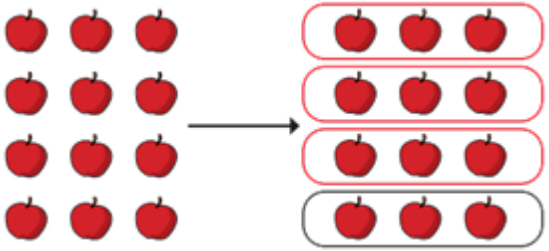
Year 3 Multiplication			
Concept	Concrete	Pictorial	Abstract
Recall and use multiplication and division facts for the 3x tables			1 x 3 = 3 2 x 3 = 6 3 x 3 = 9
Recall and use multiplication and division facts for the 4x tables			3 x 4 = 12 4 x 4 = 16 5 x 4 = 20
Recall and use multiplication and division facts for the 8x tables			5 x 8 = 40 6 x 8 = 48 7 x 8 = 42

<table>
<tr>
<td>Multiply 2 digit numbers by a one digit number</td>
<td>… tens multiplied by … is equal to … tens.
… ones multiplied by … is equal to … ones.
 
</td>
<td>3 × 24 = ?
 

3 × 4 = 12
 

3 × 20 = 60
60 + 12 = 72
3 × 24 = 72</td>
<td> 
</td>
</tr>
<tr>
<td>Scaling
Children focus on multiplication as scaling (…. times the size) as opposed to repeated addition.</td>
<td>There are 3 times as many triangles as circles.
  </td>
<td>… is … times the size of …
… is … times the length/height of …
 
</td>
<td>Miss Smith is twice the height of Jo.
If Mrs Smith is 180cm, how tall is Jo?</td>
</tr>
</table>

Correspondence problems (How many ways?) Encourage children to work systematically to find all the different possible combinations.	For every … , there are … possible … There are … × … possibilities altogether. 		For every hat, there are two possible scarves. 3 × 2 = 6 There are 6 possibilities altogether.
Year 3 Division			
Concept	Concrete	Pictorial	Abstract
Divide by 3, 4 and 8 Use related multiplication facts			2 × 4 = 8 8 ÷ 4 = 2
Divide a 2 digit number by a 1 digit number without an exchange			60 ÷ 2 = 30 4 ÷ 2 = 2 64 ÷ 2 = 32
Divide a 2 digit number by 1 digit number with a remainder		 64 ÷ 2 = 32	There are … groups of … There are … remaining. 29 ÷2 = 14 remainder 1

Unit fractions of a set of objects	The whole is divided into … equal parts.  ¼ of 12 apples is 3 apples	$\frac{1}{4}$ of 12 is 3 	1/3 of 36 is 12
Non-unit fractions of a set of objects	The whole is divided into … equal parts.  ¾ of 12 apples is 9 apples.	$\frac{2}{3}$ of 36 is 24 	¾ of 12 is 9.