
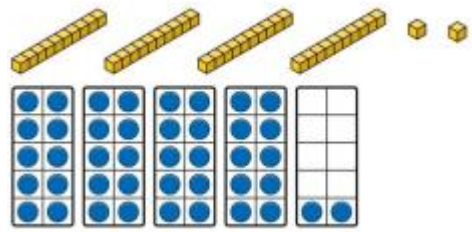








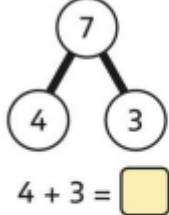
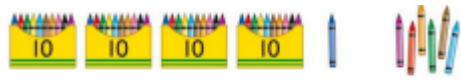
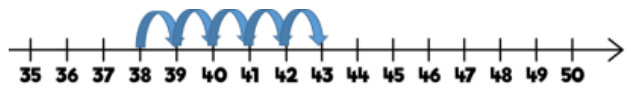
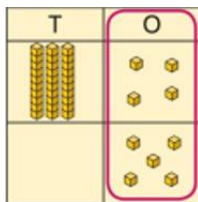


Year 2													
	Concrete	Pictorial	Abstract										
Year 2 addition													
Recognise the place value of each digit in a two-digit number (tens, ones)	<p>Group objects into 10s and 1s</p> 	<p>Understand 10s and 1s equipment, and link with visual representations on ten frames.</p> 	<p>Represent numbers on a place value grid, using equipment or numerals.</p> <table border="1" data-bbox="1702 462 1960 654"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td></td> <td></td> </tr> <tr> <td>3</td> <td>2</td> </tr> </tbody> </table> <table border="1" data-bbox="1702 662 1960 734"> <thead> <tr> <th>Tens</th> <th>Ones</th> </tr> </thead> <tbody> <tr> <td>4</td> <td>3</td> </tr> </tbody> </table>	Tens	Ones			3	2	Tens	Ones	4	3
Tens	Ones												
													
3	2												
Tens	Ones												
4	3												
<p>Solve problems with addition, using concrete objects, pictorials representations, including those involving numbers.</p> <p>Adding tens</p>	 <p><i>I know that 4 + 3 = 7. So, I know that 4 tens add 3 tens is 7 tens.</i></p>	 <p><i>I know that 4 + 3 = 7. So, I know that 4 tens add 3 tens is 7 tens.</i></p>	 <p>$4 + 3 = \square$</p> <p>$4 + 3 = 7$ $4 \text{ tens} + 3 \text{ tens} = 7 \text{ tens}$ $40 + 30 = 70$</p>										
<p>Adding a 1-digit number to a 2-digit number</p>	<p>Add the 1s to find the total. Use known bonds within 10.</p>  <p><i>41 is 4 tens and 1 one. 41 add 6 ones is 4 tens and 7 ones.</i></p>	<p>When adding a single digits to a two-digit number, children should be encouraged to count on from the larger number.</p> 	<p>When adding one-digit numbers that cross 10, it is important to highlight the importance of ten ones equalling one ten.</p>										

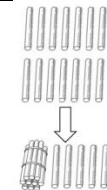


There are 4 tens and 5 ones. I need to add 7. I will use 5 to complete a 10, then add 2 more.



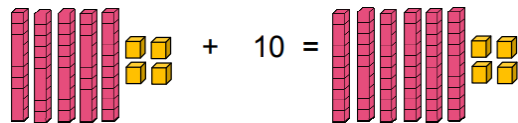
34 is 3 tens and 4 ones.
4 ones and 5 ones are 9 ones.
The total is 3 tens and 9 ones.

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



They should also apply their knowledge of number bonds to add more efficiently e.g., $8+5=13$ so $38+5=43$

Adding a multiple of 10 to a 2-digit number



Children to know that when you are adding or taking away tens alone, the number of ones remains unchanged.

Add the 10s and then recombine.



66 is 6 tens and 6 ones. $66 + 10 = 76$

Add the 10s and then recombine.

$37 + 20 = ?$
 $30 + 20 = 50$
 $50 + 7 = 57$
 $37 + 20 = 57$

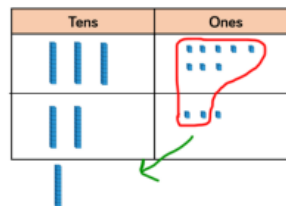
Adding two 2-digit numbers

Add the 10s and 1s separately.



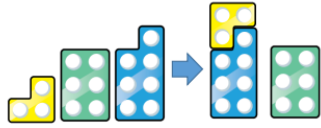
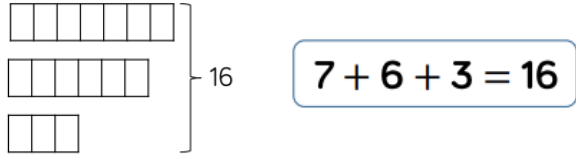
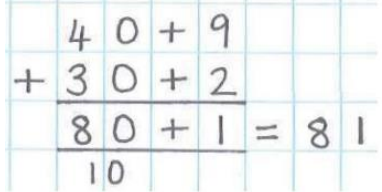

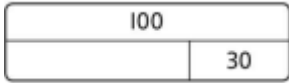
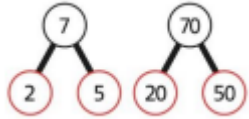
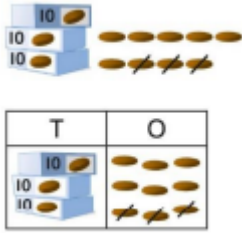
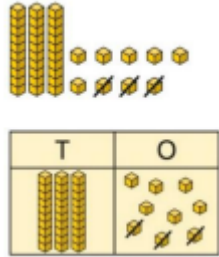

$5 + 3 = 8$ There are 8 ones in total. $3 + 2 = 5$
There are 5 tens in total. $35 + 23 = 58$

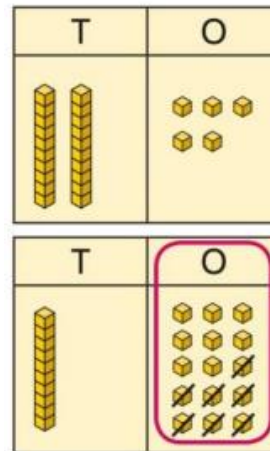
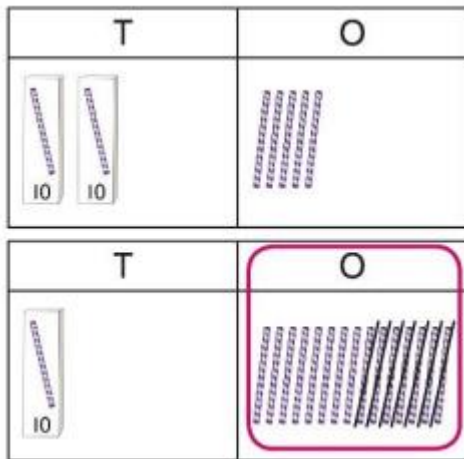
Add the 10s and 1s separately.



4	9	+	3	2	=			
4	0	+	3	0	=	70		
9		+	2		=	11		
7	0	+	1	0	+	1	=	81

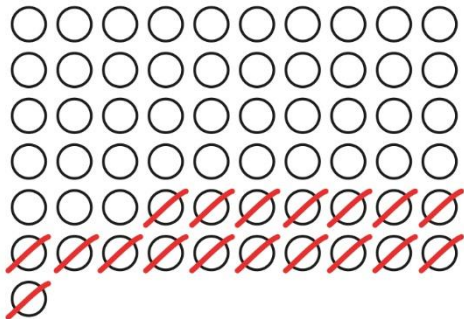
Children can record their jottings as above.
They will then progress to a more formal columnar method (in preparation for Year 3):

<p>Adding three one-digit numbers</p>	 <p>Encourage children to look for number bonds.</p>		
<p>Year 2 Subtraction</p> <p>Subtracting multiples of 10</p>	<p>Use known number bonds and unitising to subtract multiples of 10</p>  <p><i>8 subtract 6 is 2. So, 8 tens subtract 6 tens is 2 tens.</i></p>	<p>Use known number bonds and unitising to subtract multiples of 10.</p>  <p>$10 - 3 = 7$ So, 10 tens subtract 3 tens is 7 tens</p>	<p>Use known number bonds and unitising to subtract multiples of 10.</p>  <p>7 tens subtract 5 tens is 2 tens. $70 - 50 = 20$</p>
<p>Subtracting a single-digit number</p>	<p>Subtract the 1s. This may be done in or out of a place value grid</p>  <p>When subtracting a single-digit number using exchange, exchange 1 ten for 10 ones. This may be done in or out of a place value grid.</p>	<p>Subtract the 1s. This may be done in or out of a place value grid.</p>  <p>Exchange 1 ten for 10 ones.</p>	<p>Subtract the 1s. Understand the link between counting back and subtracting the 1s using known bonds.</p>  <p>$9 - 3 = 6$ $39 - 3 = 36$</p>



Subtracting a 2-digit number

Subtract by taking away.



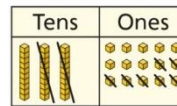
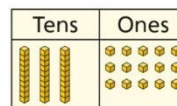
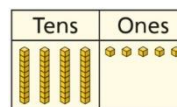
$$61 - 18$$

I took away 1 ten and 8 ones.

Subtract the 1s. Then subtract the 10s. This may be done in or out of a place value grid.

Subtract the 10s and the 1s.

This can be represented on a 100 square.



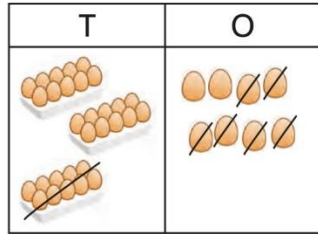
1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20
21	22	23	24	25	26	27	28	29	30
31	32	33	34	35	36	37	38	39	40
41	42	43	44	45	46	47	48	49	50
51	52	53	54	55	56	57	58	59	60
61	62	63	64	65	66	67	68	69	70
71	72	73	74	75	76	77	78	79	80
81	82	83	84	85	86	87	88	89	90
91	92	93	94	95	96	97	98	99	100

This can be represented on a place value grid using base 10.
 $45 - 27 =$

5	6	-	2	4	=		
5	6	-	2	0	=	3	6
3	6	-	4		=	3	2

Children will record their workings informally to start with ..before progressing to a more formal partitioned columnar method (in preparation for Year 3):

5	0	+	6		
-	2	0	+	4	
3	0	+	2	=	3 2



$$38 - 16 = 22$$

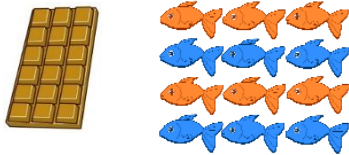
Year 2 addition and subtraction vocabulary

+, add, addition, more, plus, make, sum, total, altogether, how many more to make=? how many more is= than=? how much more is=? =, equals, sign, is the same as, tens, ones, partition, multiple of 10, tens boundary, more than, one more, two more= ten more= one hundred more, -, subtraction, subtract, take away, difference, difference between, minus, less than, one less, two less= ten less= one hundred less

Year 2 multiplication

Show that multiplication of two numbers can be done in any order (commutative)

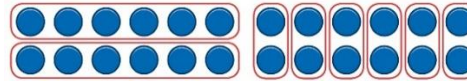
Use arrays to visualise commutativity. There are 6 groups of 3 and 3 groups of 6.



$$3 \text{ groups of } 4 = 3 \times 4 = 12$$

$$4 \text{ groups of } 3 = 4 \times 3 = 12$$

Form arrays using counters to visualise commutativity. Rotate the array to show that orientation does not change the multiplication.



This is 2 groups of 6 and also 6 groups of 2

Use arrays to visualise commutativity.



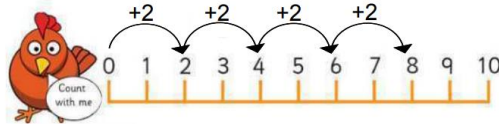
$$4 + 4 + 4 + 4 + 4 = 20$$

$$5 + 5 + 5 + 5 = 20$$

$$4 \times 5 = 20 \text{ and } 5 \times 4 = 20$$

Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables, including recognising odd and even numbers.

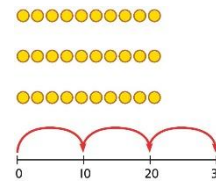
Develop an understanding of how to count groups of 2, 5 and 10 and learn corresponding times-table facts.



Understand how to relate counting in unitised groups and repeated addition with knowing key times-table facts.

$$10 + 10 + 10 = 30$$

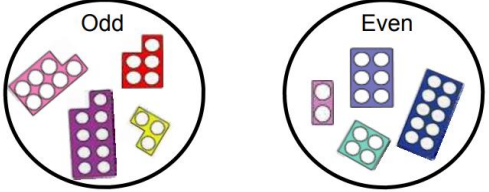

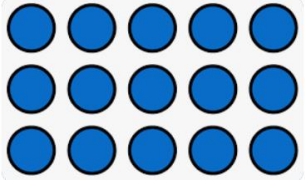
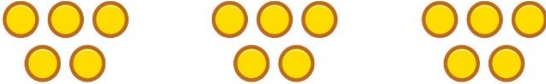
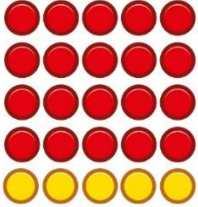
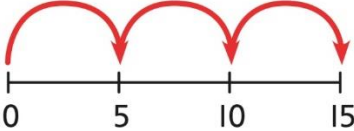
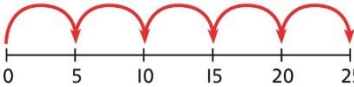
$$3 \times 10 = 30$$

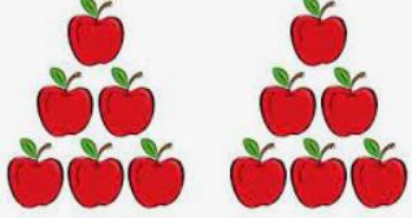

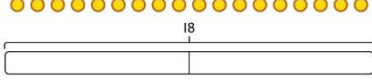





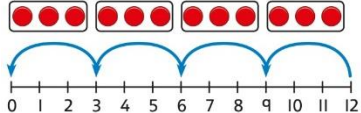


Understand how the times-tables increase and contain patterns.

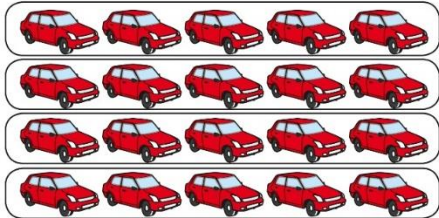
5 times table	
1 x 5 = 5	
2 x 5 = 10	
3 x 5 = 15	
4 x 5 = 20	
5 x 5 = 25	
6 x 5 = 30	
7 x 5 = 35	
8 x 5 = 40	
9 x 5 = 45	
10 x 5 = 50	
11 x 5 = 55	
12 x 5 = 60	

10 times table	
1 x 10 = 10	
2 x 10 = 20	
3 x 10 = 30	
4 x 10 = 40	
5 x 10 = 50	
6 x 10 = 60	
7 x 10 = 70	
8 x 10 = 80	
9 x 10 = 90	
10 x 10 = 100	
11 x 10 = 110	
12 x 10 = 120	

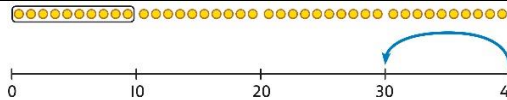
			<p>The 5 times table is half the 10 times table. So to find 6×5, I could work out 6×10 and then halve it!</p>
<p>Solve problems involving multiplication and division, using materials, arrays, repeated addition, mental methods, and multiplication and division facts, including problems in contexts.</p>	<p>Recognise equal groups and write as repeated addition and as multiplication.</p>  <p><i>3 groups of 5 chairs 15 chairs altogether</i></p> <p>Understand the relationship between arrays, multiplication and repeated addition.</p>  <p><i>4 groups of 5</i></p>	<p>Recognise equal groups using standard objects such as counters and write as repeated addition and multiplication.</p>  <p><i>3 groups of 5 15 in total</i></p> <p>Understand the relationship between arrays, multiplication and repeated addition.</p>  <p><i>4 groups of 5 ... 5 groups of 5</i></p>	<p>Use a number line and write as repeated addition and as multiplication.</p>  <p>$5 + 5 + 5 = 15$ $3 \times 5 = 15$</p> <p>Understand the relationship between arrays, multiplication and repeated addition.</p>  <p>$5 \times 5 = 25$</p>
<p>Year 2 division</p>			
<p>Solve problems involving division, using materials,</p>	<p>Start with a whole and share into equal parts, one at a time.</p>	<p>Represent the objects shared into equal parts using a bar model.</p>	<p>Use a bar model to support understanding of the division.</p>

<p>arrays, and division facts, including problems in contexts.</p>	 <p>12 shared equally between 2. They get 6 each.</p> <p>Start to understand how this also relates to grouping. To share equally between 3 people, take a group of 3 and give 1 to each person. Keep going until all the objects have been shared.</p>	 <p>20 shared into 5 equal parts. There are 4 in each part.</p>	 <p>$18 \div 2 = 9$</p>
<p>Calculate mathematical statements for division within the multiplication tables and write them using the division (\div) and equals (=) signs.</p>	<p>Understand how to make equal groups from a whole.</p>  <p>8 divided into 4 equal groups. There are 2 in each group.</p>	<p>Understand the relationship between grouping and the division statements.</p> <p>$12 \div 3 = 4$</p>  <p>$12 \div 4 = 3$</p>  <p>$12 \div 6 = 2$</p>  <p>$12 \div 2 = 6$</p> 	<p>Understand how to relate division by grouping to repeated subtraction.</p>  <p>There are 4 groups now.</p> <p>12 divided into groups of 3. $12 \div 3 = 4$</p> <p>There are 4 groups.</p>
<p>Recall and use multiplication and division facts for the 2, 5 and 10 multiplication tables,</p>	<p>Understand the relationship between multiplication facts and division.</p>	<p>Link equal grouping with repeated subtraction and known times-table facts to support division.</p>	<p>Relate times-table knowledge directly to division.</p>

including recognising odd and even numbers

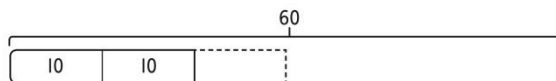


4 groups of 5 cars is 20 cars in total.
20 divided by 4 is 5.



40 divided by 4 is 10.

Use a bar model to support understanding of the link between times-table knowledge and division.



- 1 × 10 = 10
- 2 × 10 = 20
- 3 × 10 = 30**
- 4 × 10 = 40
- 5 × 10 = 50
- 6 × 10 = 60
- 7 × 10 = 70
- 8 × 10 = 80

I used the 10 times-table to help me.
3 × 10 = 30.

I know that 3 groups of 10 makes 30, so I know that 30 divided by 10 is 3.

$3 \times 10 = 30$ so $30 \div 10 = 3$

Year 2 Multiplication and division vocabulary

multiple, multiplication array, multiplication tables/facts, groups of, lots of, times, columns, rows, group in pairs, 3s D 10s etc, equal groups of, divide, ÷, divided by, divided into, shared into, remainder