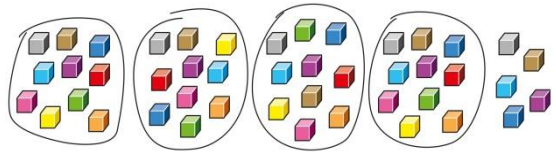
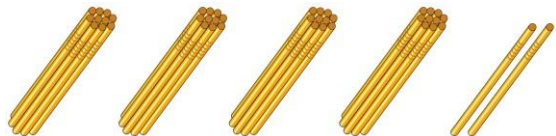
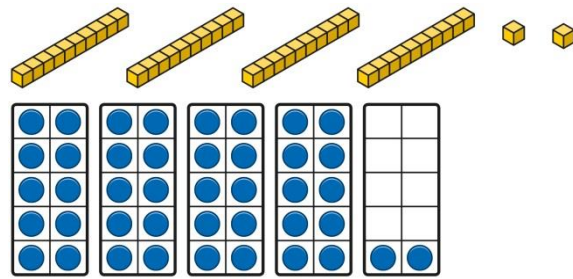
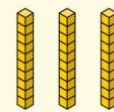

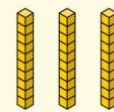

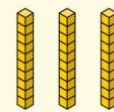


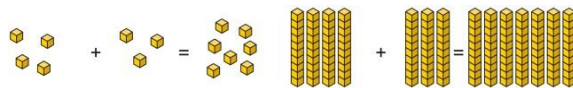
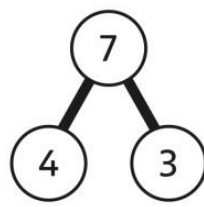


Year 2

Year 2 Addition	Concrete	Pictorial	Abstract										
Understanding 10s and 1s	<p>Group objects into 10s and 1s.</p>  <p>Bundle straws to understand unitising of 10s.</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="1554 445 1868 772"><tr><th>Tens</th><th>Ones</th></tr><tr><td></td><td></td></tr><tr><td>3</td><td>2</td></tr><tr><th>Tens</th><th>Ones</th></tr><tr><td>4</td><td>3</td></tr></table>	Tens	Ones			3	2	Tens	Ones	4	3
Tens	Ones												
													
3	2												
Tens	Ones												
4	3												
Adding 10s	<p>Use known bonds and unitising to add 10s.</p>  <p><i>I know that $4 + 3 = 7$. So, I know that 4 tens add 3 tens is 7 tens.</i></p>	<p>Use known bonds and unitising to add 10s.</p>  <p><i>I know that $4 + 3 = 7$. So, I know that 4 tens add 3 tens is 7 tens.</i></p>	<p>Use known bonds and unitising to add 10s.</p>  <p>$4 + 3 = \square$</p> <p>$4 + 3 = 7$ $4 \text{ tens} + 3 \text{ tens} = 7 \text{ tens}$ $40 + 30 = 70$</p>										

Adding a 1-digit number to a 2-digit number not bridging a 10

Add the 1s to find the total. Use known bonds within 10.



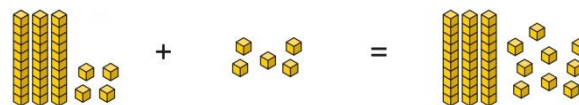
41 is 4 tens and 1 one.

41 add 6 ones is 4 tens and 7 ones.

This can also be done in a place value grid.

T	O

Add the 1s.



34 is 3 tens and 4 ones.

4 ones and 5 ones are 9 ones.

The total is 3 tens and 9 ones.

T	O

Adding a 1-digit number to a 2-digit number bridging 10

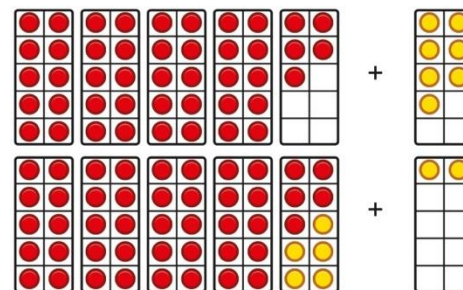
Complete a 10 using number bonds.



There are 4 tens and 5 ones.

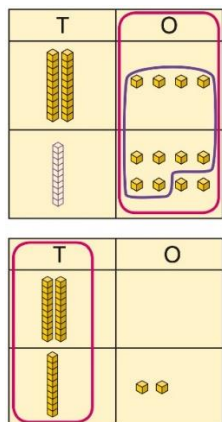
I need to add 7. I will use 5 to complete a 10, then add 2 more.

Complete a 10 using number bonds.

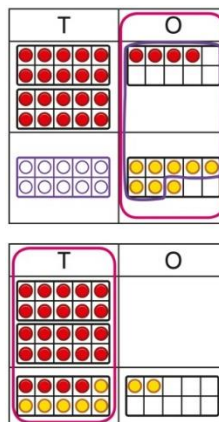


Adding a 1-digit number to a 2-digit number using exchange

Exchange 10 ones for 1 ten.



Exchange 10 ones for 1 ten.



Exchange 10 ones for 1 ten.

Adding a multiple of 10 to a 2-digit number

Add the 10s and then recombine.



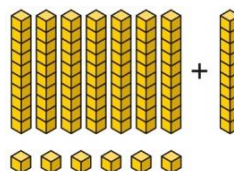
27 is 2 tens and 7 ones.

50 is 5 tens.

There are 7 tens in total and 7 ones.

So, $27 + 50$ is 7 tens and 7 ones.

Add the 10s and then recombine.



66 is 6 tens and 6 ones.

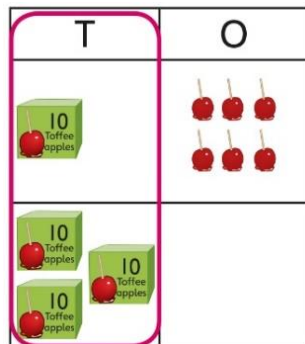
$66 + 10 = 76$

A 100 square can support this understanding.

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

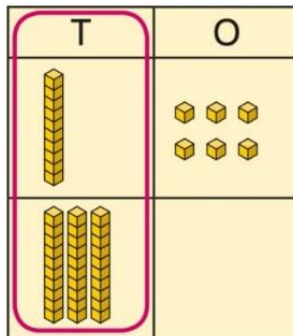
Adding a multiple of 10 to a 2-digit number using columns

Add the 10s using a place value grid to support.



16 is 1 ten and 6 ones.
30 is 3 tens.
There are 4 tens and 6 ones in total.

Add the 10s using a place value grid to support.

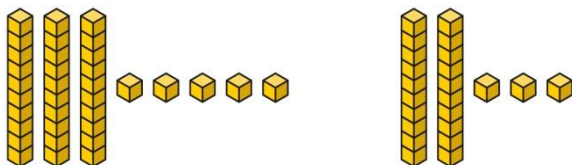


16 is 1 ten and 6 ones.
30 is 3 tens.
There are 4 tens and 6 ones in total.

Add the 10s represented vertically. Children must understand how the method relates to unitising of 10s and place value.

Adding two 2-digit numbers

Add the 10s and 1s separately.

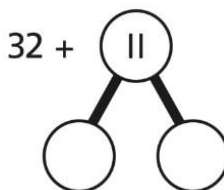


$5 + 3 = 8$
There are 8 ones in total.

$3 + 2 = 5$
There are 5 tens in total.

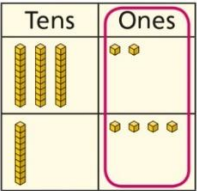
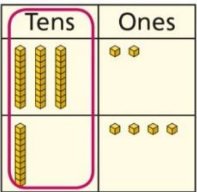
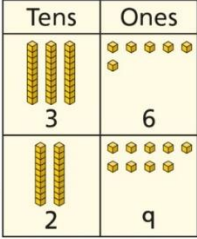
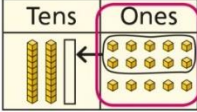
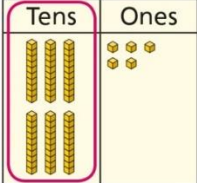
$35 + 23 = 58$

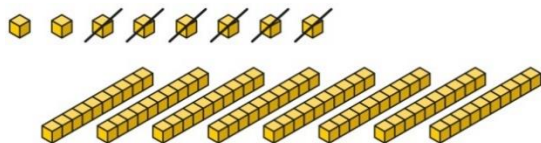
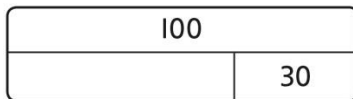
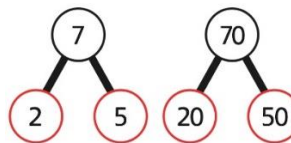
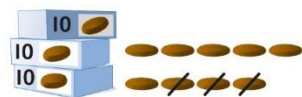
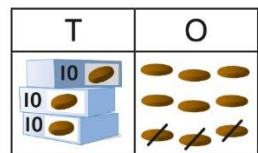
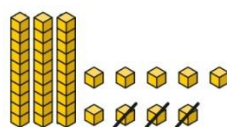
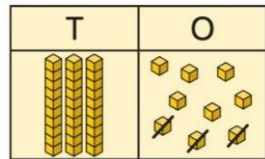
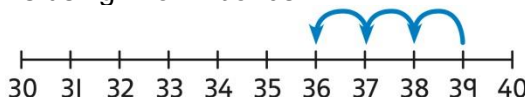
Add the 10s and 1s separately. Use a part-whole model to support.



$11 = 10 + 1$
 $32 + 10 = 42$
 $42 + 1 = 43$

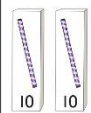


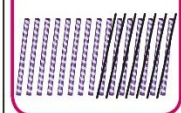
$32 + 11 = 43$

<p>Adding two 2-digit numbers using a place value grid</p>	<p>Add the 1s. Then add the 10s.</p>  		<p>Add the 1s. Then add the 10s.</p>
<p>Adding two 2-digit numbers with exchange</p>	<p>Add the 1s. Exchange 10 ones for a ten. Then add the 10s.</p>   		<p>Add the 1s. Exchange 10 ones for a ten. Then add the 10s.</p>





Year 2 Subtraction	Concrete	Pictorial	Abstract												
Subtracting multiples of 10	<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><i>10 - 3 = 7 So, 10 tens subtract 3 tens is 7 tens.</i></p>	<p>Use known number bonds and unitising to subtract multiples of 10.</p>  <p><i>7 tens subtract 5 tens is 2 tens. 70 - 50 = 20</i></p>												
Subtracting a single-digit number	<p>Subtract the 1s. 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>Subtract the 1s. Understand the link between counting back and subtracting the 1s using known bonds.</p>  <table><tr><td>T</td><td>O</td><td></td></tr><tr><td>3</td><td>9</td><td></td></tr><tr><td>-</td><td>3</td><td></td></tr><tr><td>3</td><td>6</td><td></td></tr></table> <p><i>9 - 3 = 6 39 - 3 = 36</i></p>	T	O		3	9		-	3		3	6	
T	O														
3	9														
-	3														
3	6														

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.

T	O
	
T	O
	

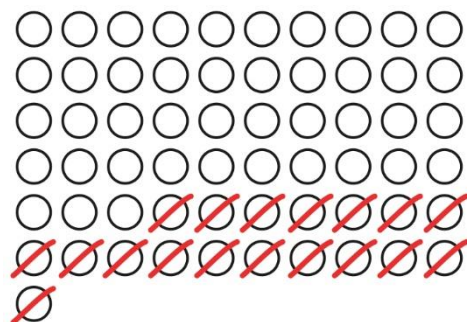
Exchange 1 ten for 10 ones.

T	O
	
T	O
	

Exchange 1 ten for 10 ones.

Subtracting a 2-digit number

Subtract by taking away.



$$61 - 18$$

I took away 1 ten and 8 ones.

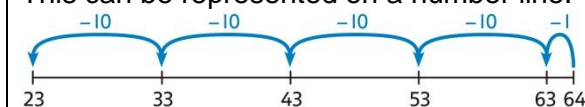
Subtract the 10s and the 1s.

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

Subtract the 10s and the 1s.

This can be represented on a number line.

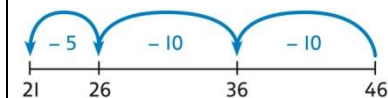


$$64 - 41 = ?$$

$$64 - 1 = 63$$

$$63 - 40 = 23$$

$$64 - 41 = 23$$



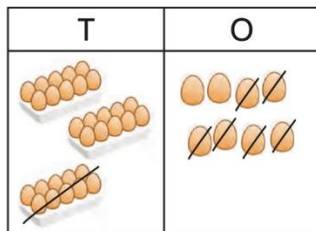
$$46 - 20 = 26$$

$$26 - 5 = 21$$

$$46 - 25 = 21$$

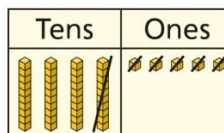
Subtracting a 2-digit number using place value and columns

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



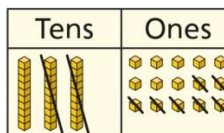
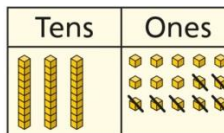
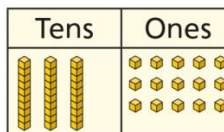
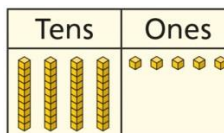
$$38 - 16 = 22$$


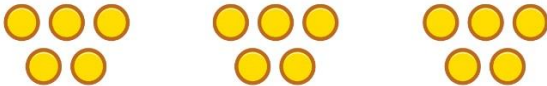
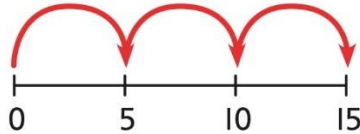

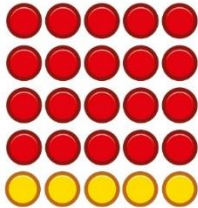
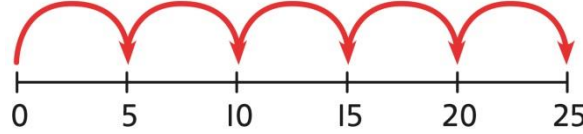

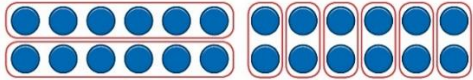

Subtract the 1s. Then subtract the 10s.



Subtracting a 2-digit number with exchange

Exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s.



Year 2 Multiplication	Concrete	Pictorial	Abstract
Equal groups and repeated addition	<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>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>Use a number line and write as repeated addition and as multiplication.</p>  <p>$5 + 5 + 5 = 15$ $3 \times 5 = 15$</p>
Using arrays to represent multiplication and support understanding	<p>Understand the relationship between arrays, multiplication and repeated addition.</p>  <p><i>4 groups of 5</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>Understand the relationship between arrays, multiplication and repeated addition.</p>  <p>$5 \times 5 = 25$</p>
Understanding commutativity	<p>Use arrays to visualise commutativity.</p>  <p><i>I can see 6 groups of 3. I can see 3 groups of 6.</i></p>	<p>Form arrays using counters to visualise commutativity. Rotate the array to show that orientation does not change the multiplication.</p>  <p><i>This is 2 groups of 6 and also 6 groups of 2.</i></p>	<p>Use arrays to visualise commutativity.</p>  <p>$4 + 4 + 4 + 4 = 20$ $5 + 5 + 5 + 5 = 20$ $4 \times 5 = 20$ and $5 \times 4 = 20$</p>

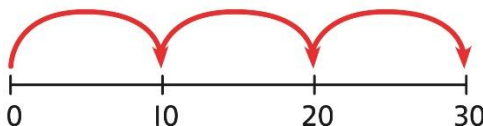
Learning $\times 2$, $\times 5$ and $\times 10$ table facts

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



3 groups of 10 ... 10, 20, 30
 $3 \times 10 = 30$

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

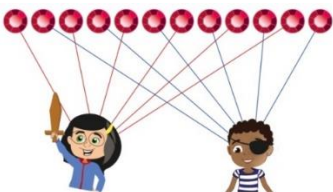



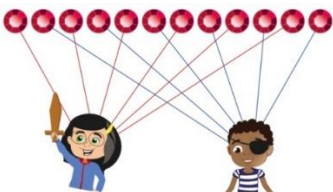



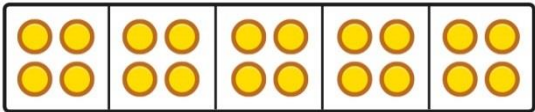

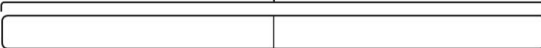







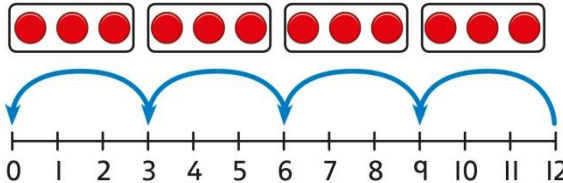
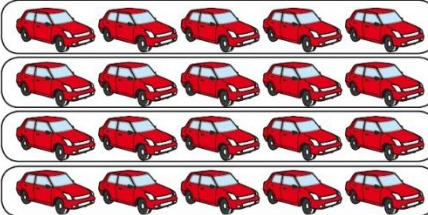
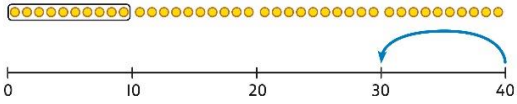
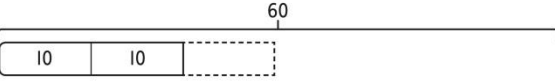
$10 + 10 + 10 = 30$
 $3 \times 10 = 30$

Understand how the times-tables increase and contain patterns.



$5 \times 10 = 50$
 $6 \times 10 = 60$

Year 2 Division	Concrete	Pictorial	Abstract
<p>Sharing equally</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>They get 5  each.</p> <p>15 shared equally between 3. They get 5 each.</p>	<p>Start with a whole and share into equal parts, one at a time.</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>They get 5  each.</p> <p>15 shared equally between 3. They get 5 each.</p>	<p>Represent the objects shared into equal parts using a bar model.</p>  <p>20 shared into 5 equal parts. There are 4 in each part.</p>	<p>Use a bar model to support understanding of the division.</p>   <p>18 ÷ 2 = 9</p>

<p>Grouping equally</p>	<p>Understand how to make equal groups from a whole.</p>  <p><i>8 divided into 4 equal groups. There are 2 in each group.</i></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><i>12 divided into groups of 3. $12 \div 3 = 4$</i></p> <p><i>There are 4 groups.</i></p>
<p>Using known times-tables to solve divisions</p>	<p>Understand the relationship between multiplication facts and division.</p>  <p><i>4 groups of 5 cars is 20 cars in total. 20 divided by 4 is 5.</i></p>	<p>Link equal grouping with repeated subtraction and known times-table facts to support division.</p>  <p><i>40 divided by 4 is 10.</i></p> <p>Use a bar model to support understanding of the link between times-table knowledge and division.</p> 	<p>Relate times-table knowledge directly to division.</p> <p> $1 \times 10 = 10$ $2 \times 10 = 20$ $3 \times 10 = 30$ $4 \times 10 = 40$ $5 \times 10 = 50$ $6 \times 10 = 60$ $7 \times 10 = 70$ $8 \times 10 = 80$ </p> <p><i>I used the 10 times-table to help me. $3 \times 10 = 30$.</i></p> <p><i>I know that 3 groups of 10 makes 30, so I know that 30 divided by 10 is 3.</i></p> <p>$3 \times 10 = 30$ so $30 \div 10 = 3$</p>