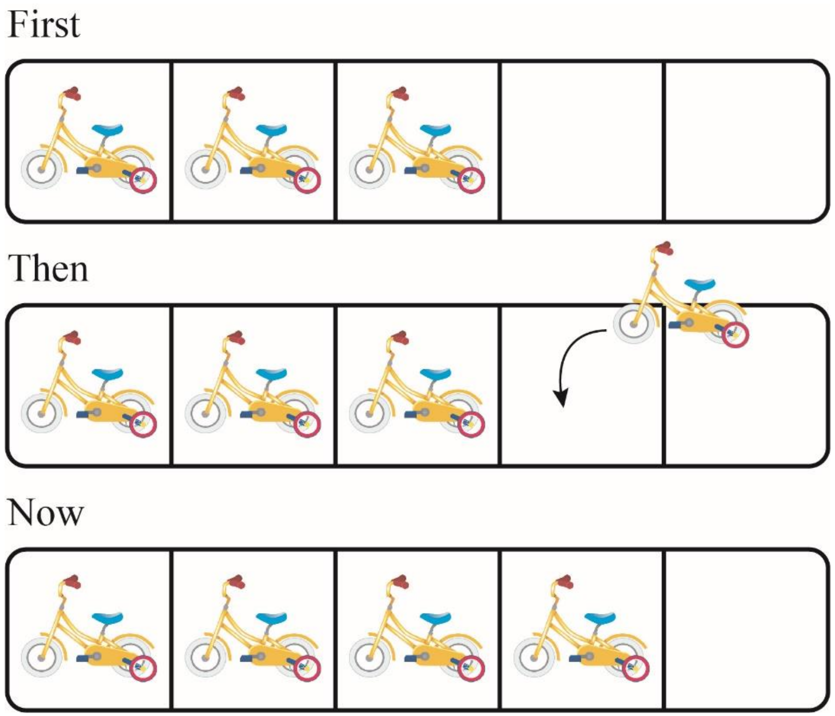
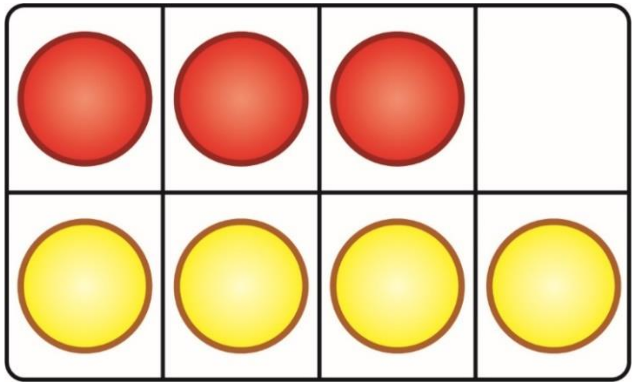
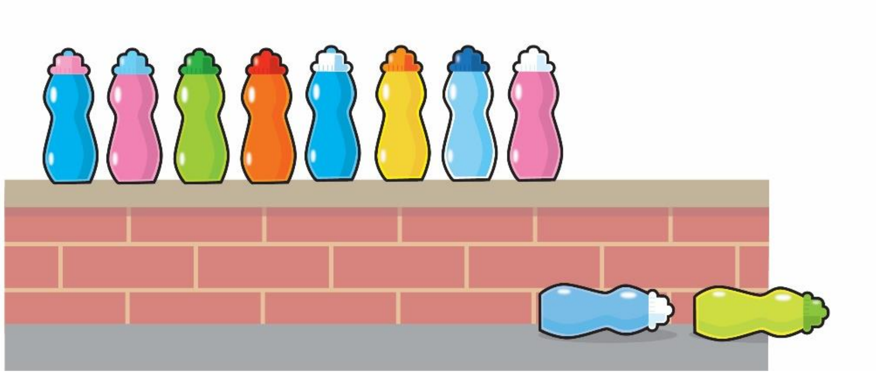
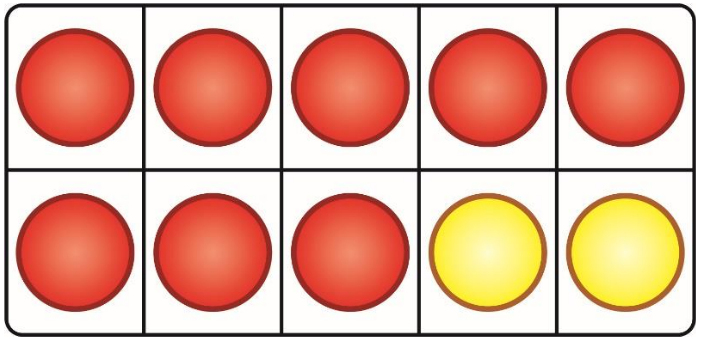
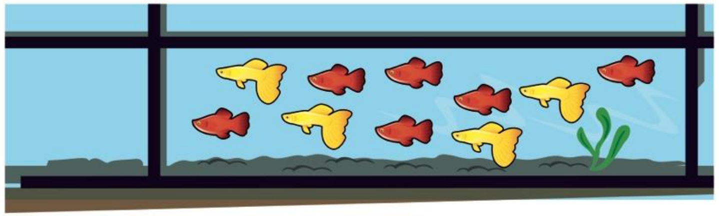
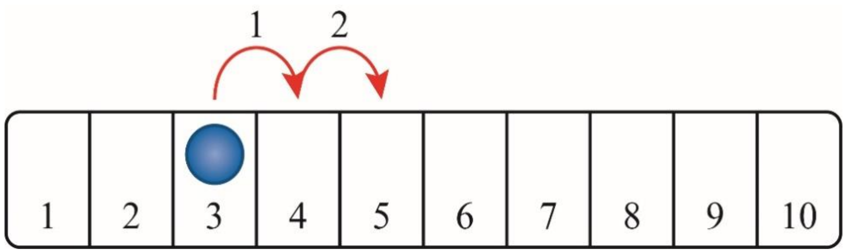
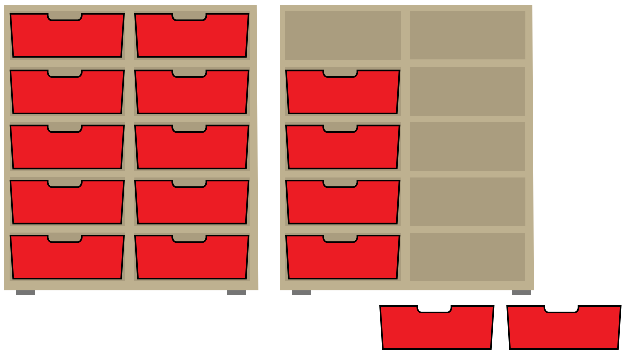
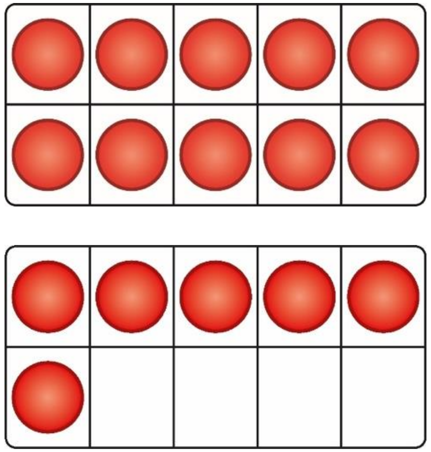
STRENGTH THROUGH WISDOM

Bournes Green Infant School Calculation Policy		
Reception		
Children develop the core ideas that underpin all calculation. They begin by connecting calculation with counting on and counting back, but they should learn that understanding wholes and parts will enable them to calculate efficiently and accurately and with greater flexibility. Children record their calculations in their own ways, there is no expectation of number sentences at this stage, however children may choose this way to record their thinking.		
Key language: count, forwards, backwards, whole, part, recombine, break apart, ones, ten, tens, number bond, add, adding together, addition, plus, total, altogether, first, then, now, subtract, subtraction, find the difference, take away, minus, left, less, more, fewer, group, share, equal, equals, is equal to, groups, equal groups, divide, share, shared equally		
Addition: Children start to explore addition by sorting groups. They then use sorting to develop their understanding of parts and wholes. Children combine groups to find the whole, using a part-whole model to support their thinking. They also use the part-whole model to find number bonds within and to 10. Using a five frame and ten frame, children add by counting on. They start by finding one more before adding larger numbers using counters or cubes on the frames. Children use a number track to add by counting on. Linking this learning to playing board games is an effective way to support children's addition.	**Subtraction:** Children start to explore subtraction by sorting groups. They use sorting to develop their understanding of parts and wholes. When comparing groups, children use the language more than and fewer than. This will lead to finding the difference when they move into KS1. Children then connect subtraction with the idea of counting back and finding one less using a five frame to support their thinking. They explore subtraction by breaking apart a whole to find a missing part. This links to their developing recall of number bonds. Children count back within 20 using number tracks and ten frames to see the effect of taking away.	**Multiplication and Division:** Children first start to look at the idea of equal groups through their exploration of doubles. They use five frames and objects to check that groups are equal. Children then explore halving numbers by making two equal groups. They highlight patterns between doubling and halving seeing that double 2 is 4 and half of 4 is 2. As well as halving, children also explore sharing into more than two equal groups. They share objects one by one, ensuring that each group has an equal share.

Reception		
	Real-life representation	**Other representations**
Addition	**Counting and adding more (within 5)** Children add one more person or object to a group to find one more.  *One more than 3 is 4.*	**Counting and adding more (within 5)** Children represent first, then, now stories on a five frame. They make the first number and then add one more.  *First, there are 3 bikes.* *Then, 1 more bike came.* *Now, there are 4 bikes.*

	Combining groups to find the whole Children sort people and objects into parts and combine them to find the whole.  *The parts are 3 and 4. The whole is 7.*	**Combining groups to find the whole** Children use counters or cubes in a part-whole model to find the whole.  *The parts are 3 and 4. The whole is 7.*

	Finding number bonds to 10 Children combine two groups to find a number bond to 10.  *There are 8 bottles on the wall.* *There are 2 bottles on the floor.* *There are 10 bottles altogether.*	**Finding number bonds to 10** Use ten frames and part-whole models to represent key number bonds.  *8 and 2 is 10.* *There are 10 altogether.*  *6 and 4 is 10.* *There are 10 altogether.*

	Adding by counting on (number track) Children jump along a physical number track. They start at the larger number and count on the smaller number to find the total. 	**Adding by counting on (number track)** Children use a number track and a counter. They start at the larger number and count on the smaller number to find the total. 
	Adding by counting on (ten frames) Children find the total number by counting on from the larger number. 	**Adding by counting on (ten frames)** Children make the larger number on the ten frames and then make the smaller number, counting on to find the total. They can use counters, cubes or other objects on the ten frames. 

<table>
<tr>
<td></td>
<td>Sorting groups (optional)

Children sort everyday objects into groups.

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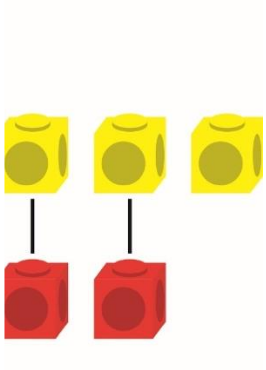
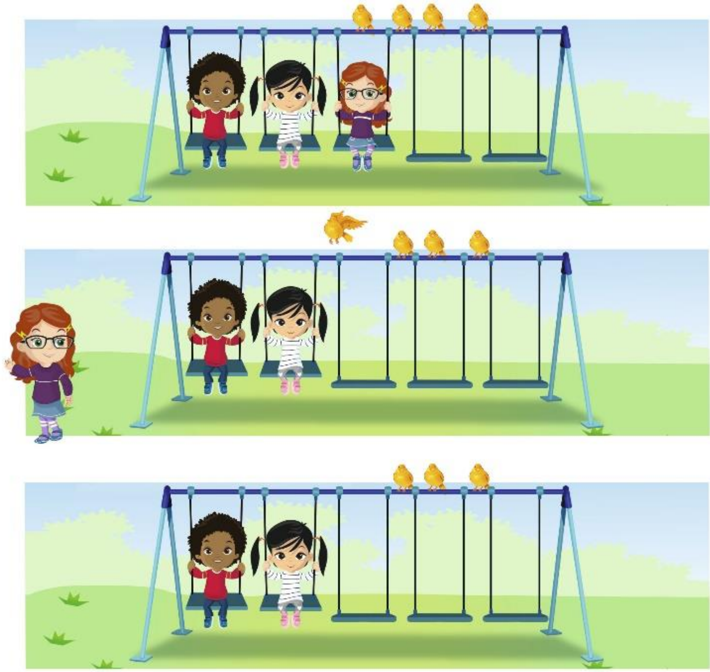
</table>

Subtraction	**Comparing groups** Children line up objects to compare the amount. They line the objects up either horizontally or vertically.  *Ella has more conkers.* *Tom has fewer conkers.*	**Comparing groups** Children line up cubes or counters to compare the amount in each group. Lines can either be horizontal or vertical. A starting line helps to line the objects accurately.  *There are more yellow cubes.* *There are fewer red cubes.*

Counting back and taking away (within 5)

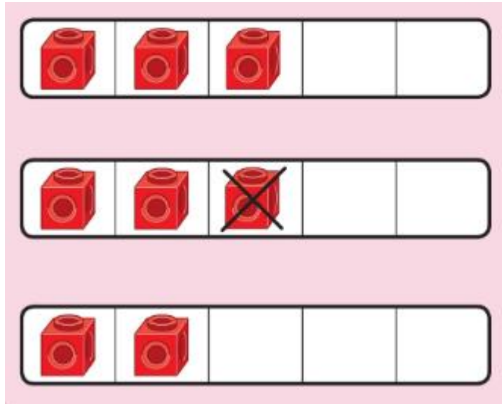
Children remove one more person or object from a group to find one less.



First, there were 3 children.
Then, 1 child left.
Now, there are 2 children.

Counting back and taking away (within 5)

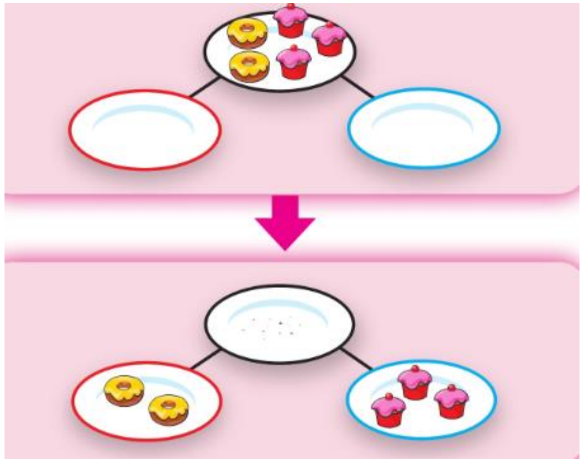
Children use five frames and objects to make a number. They then remove or cross out one object to find one less.



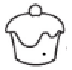
One less than 3 is 2.

<table>
<tr>
<td></td>
<td>Introducing the part-whole model

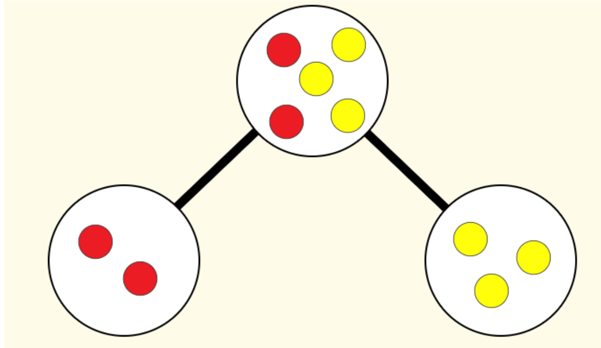
Children sort everyday objects into parts.



One part is the 

The other part is the </td>
<td>Introducing the part-whole model

Children use counters or cubes to represent objects in a part-whole model.



The whole is 5.
2 is a part.
3 is a part.</td>
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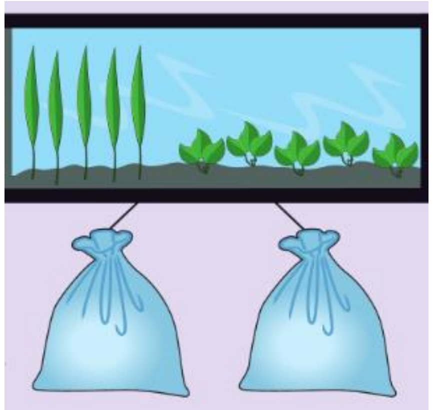
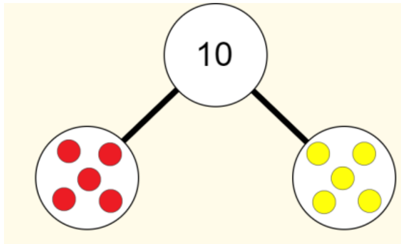
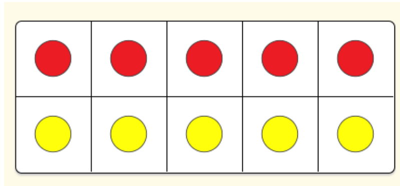
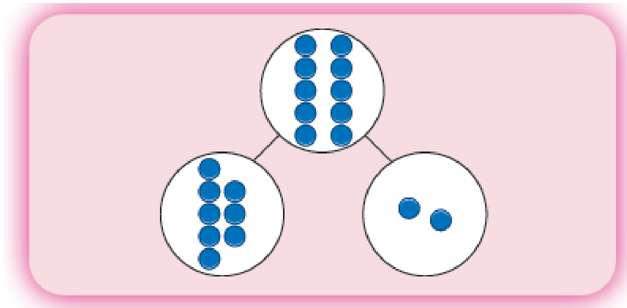
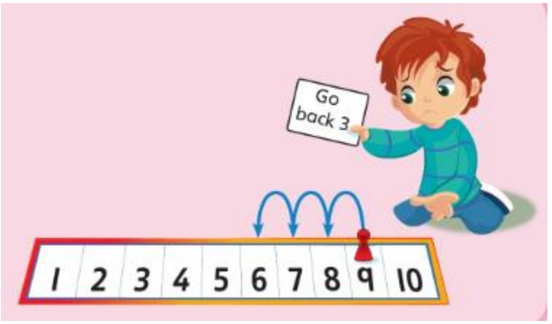
	Finding number bonds to 10 Children partition 10 into different groups to find the number bonds to 10.  Children begin to work with subtraction number bonds. They break apart 10 to identify different number bonds to 10**.**  *10 are bouncing.* *2 get off.* *8 are left.* *10 – 2 = 8*	**Finding number bonds to 10** Children use part-whole models, ten frames and counters to find the number bonds to 10.  *10 is the whole.* *5 is a part and 5 is a part.*  *10 is the whole.* *5 is a part and 5 is a part.* Children use part-whole models, and counters to find missing parts and the subtraction number bonds to 10.  *The parts are 8 and 2.* *10 is the whole.*

Counting back and taking away (number track)

Children use game boards and human number tracks to subtract by counting back.

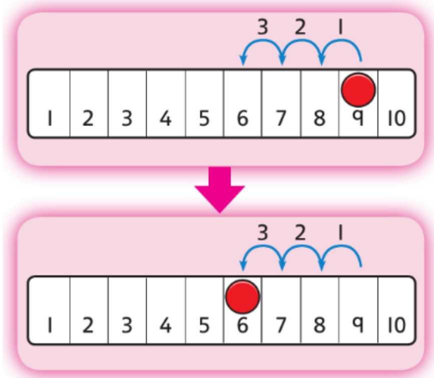


9 take away 3 equals 6

9…8…7…6

Counting back and taking away (number track)

Children use a number track and a counter. They start at the larger number and count back the smaller number to find the answer.

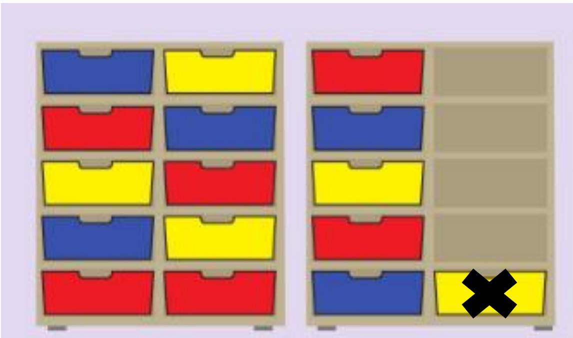


9 take away 3 equals 6

9…8…7…6

Counting back and taking away (ten frames)

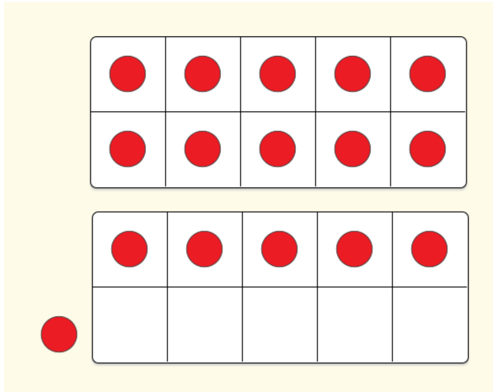
Children count backwards to find one less with numbers up to 20.



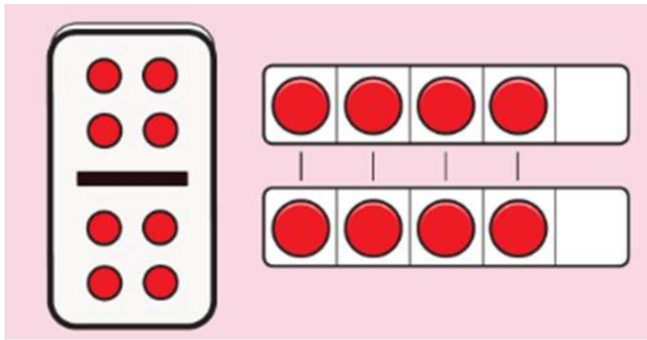
One less than 16 is 15.

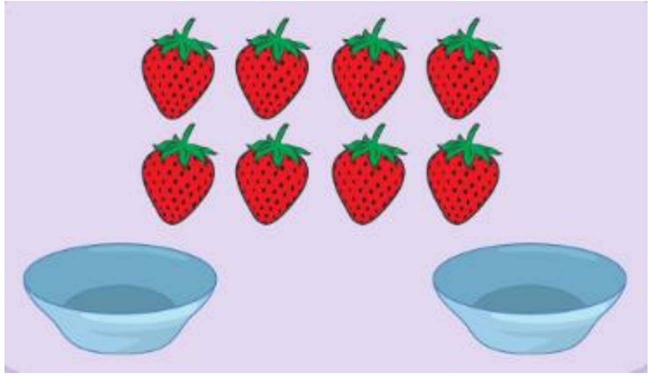
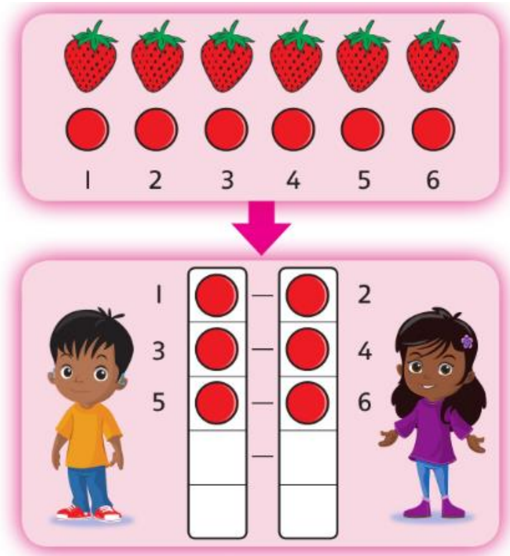
Counting back and taking away (ten frames)

Children remove counters from ten frames to support in counting back with numbers up to 20.



One less than 16 is 15.

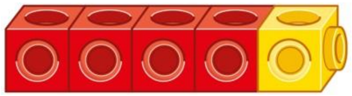
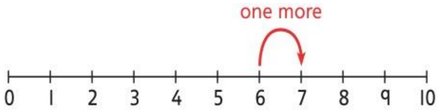
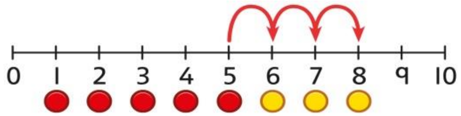
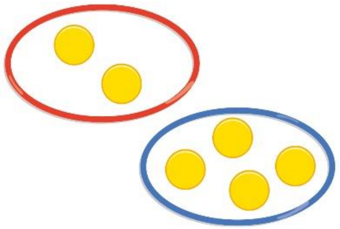
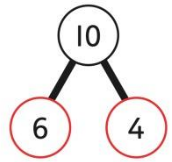
	Sorting groups (optional) Children sort everyday objects into groups. 	
Multiplication	**Making doubles** Children explore doubles in their environment including in games such as on dominoes or dice. They focus on the understanding of doubles being 2 equal groups.  *Double 4 is 8.* *Double 2 is 4.* *Double 3 is 6.*	**Making doubles** Children use five frames to find doubles by lining up counters or cubes.  *Double 4 is 8.*

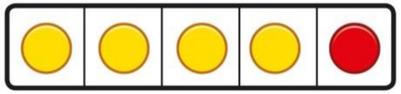
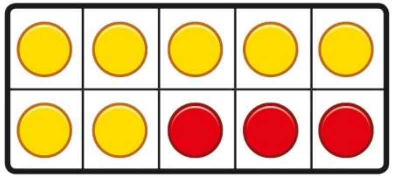
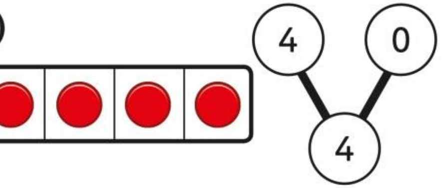
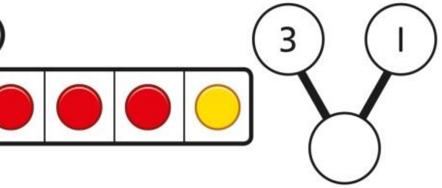
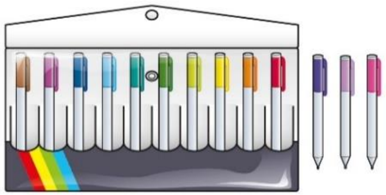
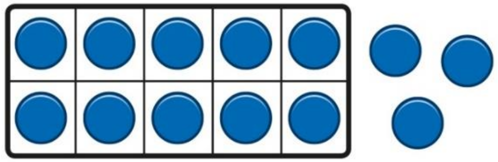
Division	**Halving and sharing** Children explore halving and sharing through practical sharing using real life scenarios including sharing fruit or classroom equipment.  *Half of 8 is 4.*	**Halving and sharing** Children use five frames to share amounts fairly and to check that the groups are equal. They share the counters/cubes one by one.  *Half of 6 is 3.*

KEY STAGE 1
Children develop the core ideas that underpin all calculation. They begin by connecting calculation with counting on and counting back, but they should learn that understanding wholes and parts will enable them to calculate efficiently and accurately and with greater flexibility. They learn how to use an understanding of 10s and 1s to develop their calculation strategies, especially in addition and subtraction.
Key language: whole, part, ones, ten, tens, number bond, add, addition, plus, total, altogether, subtract, subtraction, find the difference, take away, minus, less, more, group, share, equal, equals, is equal to, groups, equal groups, times, multiply, multiplied by, divide, share, shared equally, times-table

Addition and subtraction: Children first learn to connect addition and subtraction with counting, but they soon develop two very important skills: an understanding of parts and wholes, and an understanding of unitising 10s, to develop efficient and effective calculation strategies based on known number bonds and an increasing awareness of place value. Addition and subtraction are taught in a way that is interlinked to highlight the link between the two operations. A key idea is that children will select methods and approaches based on their number sense. For example, in Year 1, when faced with 15 − 3 and 15 − 13, they will adapt their ways of approaching the calculation appropriately. The teaching should always emphasise the importance of mathematical thinking to ensure accuracy and flexibility of approach, and the importance of using known number facts to harness their recall of bonds within 20 to support both addition and subtraction methods. In Year 2, they will start to see calculations presented in a column format, although this is not expected to be formalised until KS2. We show the column method in Year 2 as an option; teachers may not wish to include it until Year 3.	**Multiplication and division:** Children develop an awareness of equal groups and link this with counting in equal steps, starting with 2s, 5s and 10s. In Year 2, they learn to connect the language of equal groups with the mathematical symbols for multiplication and division. They learn how multiplication and division can be related to repeated addition and repeated subtraction to find the answer to the calculation. In this key stage, it is vital that children explore and experience a variety of strong images and manipulative representations of equal groups, including concrete experiences as well as abstract calculations. Children begin to recall some key multiplication facts, including doubles, and an understanding of the 2, 5 and 10 times-tables and how they are related to counting.	**Fractions:** In Year 1, children encounter halves and quarters, and link this with their understanding of sharing. They experience key spatial representations of these fractions, and learn to recognise examples and non-examples, based on their awareness of equal parts of a whole. In Year 2, they develop an awareness of unit fractions and experience non-unit fractions, and they learn to write them and read them in the common format of numerator and denominator.

Year 1

	Concrete	**Pictorial**	**Abstract**
Year 1 Addition	**Counting and adding more** Children add one more person or object to a group to find one more.	**Counting and adding more** Children add one more cube or counter to a group to represent one more.  *One more than 4 is 5.*	**Counting and adding more** Use a number line to understand how to link counting on with finding one more.  *One more than 6 is 7.* *7 is one more than 6.* Learn to link counting on with adding more than one.  *5 + 3 = 8*
	Understanding part-part-whole relationship Sort people and objects into parts and understand the relationship with the whole.  *The parts are 2 and 4. The whole is 6.*	**Understanding part-part-whole relationship** Children draw to represent the parts and understand the relationship with the whole.  *The parts are 1 and 5. The whole is 6.*	**Understanding part-part-whole relationship** Use a part-whole model to represent the numbers.  $\boxed{6} + \boxed{4} = \boxed{10}$ *6 + 4 = 10*

	Knowing and finding number bonds within 10 Break apart a group and put back together to find and form number bonds.  *3 + 4 = 7*  *6 = 2 + 4*	**Knowing and finding number bonds within 10** Use five and ten frames to represent key number bonds.  *5 = 4 + 1*  *10 = 7 + 3*	**Knowing and finding number bonds within 10** Use a part-whole model alongside other representations to find number bonds. Make sure to include examples where one of the parts is zero. a)  b)  *4 + 0 = 4* *3 + 1 = 4*
	Understanding teen numbers as a complete 10 and some more Complete a group of 10 objects and count more.  *13 is 10 and 3 more.*	**Understanding teen numbers as a complete 10 and some more** Use a ten frame to support understanding of a complete 10 for teen numbers.  *13 is 10 and 3 more.*	**Understanding teen numbers as a complete 10 and some more.** *1 ten and 3 ones equal 13.* *10 + 3 = 13*

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<tr>
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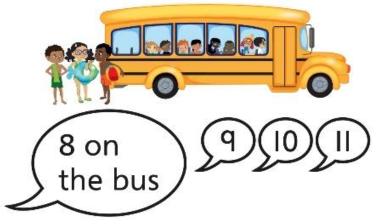
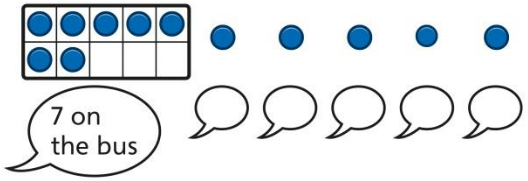
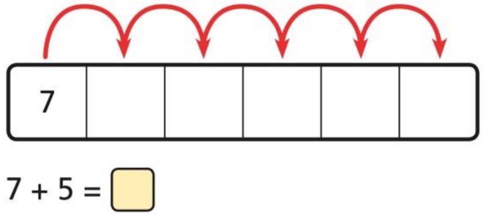
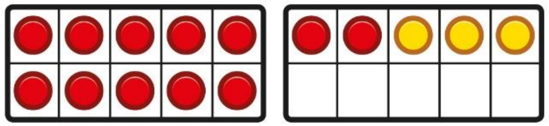
<td>Adding by counting on
Children use knowledge of counting to 20 to find a total by counting on using people or objects.
</td>
<td>Adding by counting on
Children use counters to support and represent their counting on strategy.
</td>
<td>Adding by counting on
Children use number lines or number tracks to support their counting on strategy.
</td>
</tr>
<tr>
<td></td>
<td>Adding the 1s
Children use bead strings to recognise how to add the 1s to find the total efficiently.

2 + 3 = 5
12 + 3 = 15</td>
<td>Adding the 1s
Children represent calculations using ten frames to add a teen and 1s.

2 + 3 = 5
12 + 3 = 15</td>
<td>Adding the 1s
Children recognise that a teen is made from a 10 and some 1s and use their knowledge of addition within 10 to work efficiently.
3 + 5 = 8
So, 13 + 5 = 18</td>
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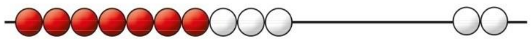
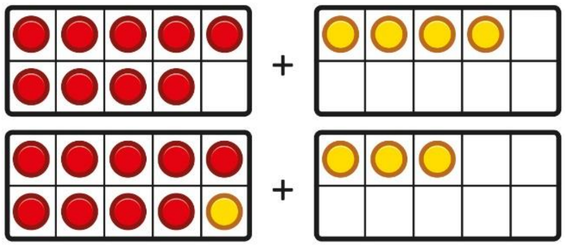
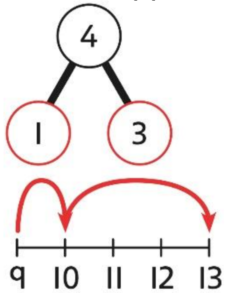
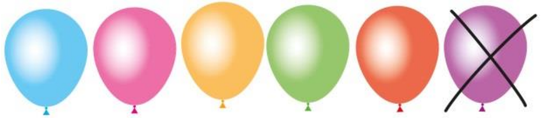
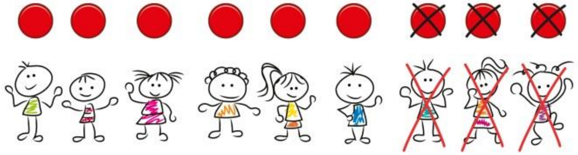
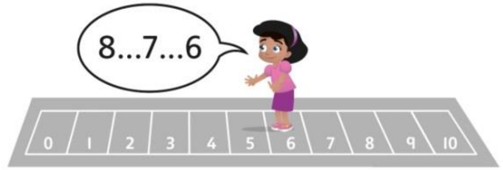
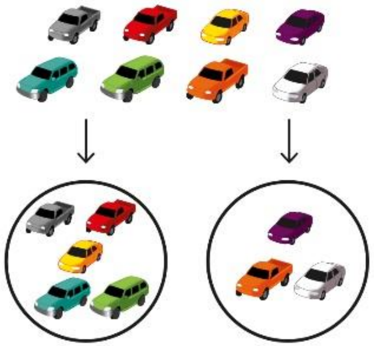
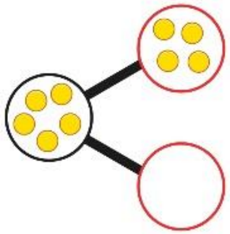
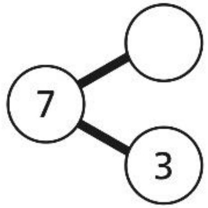
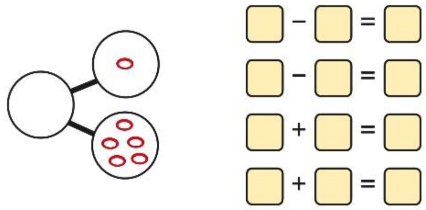
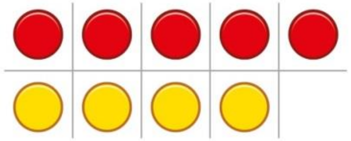
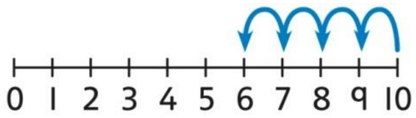
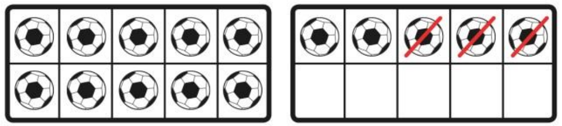
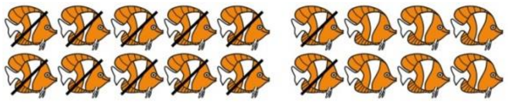
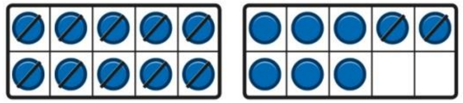
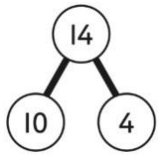
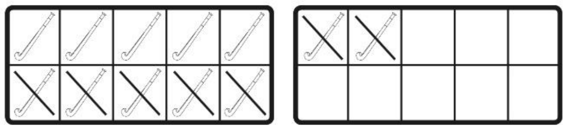
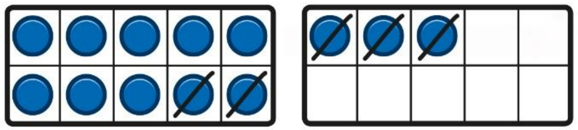
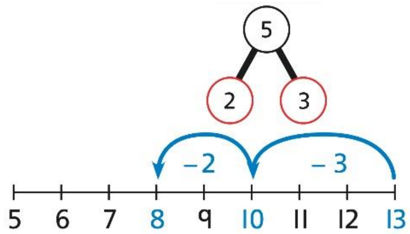
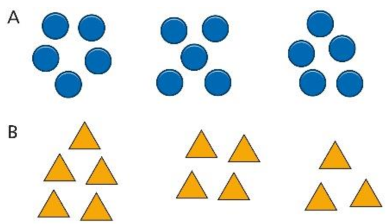
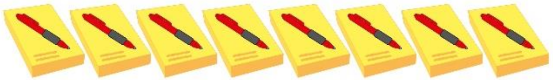
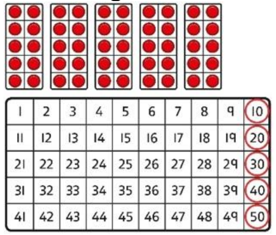
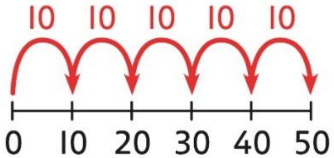
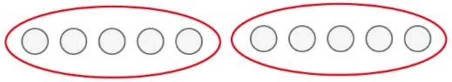
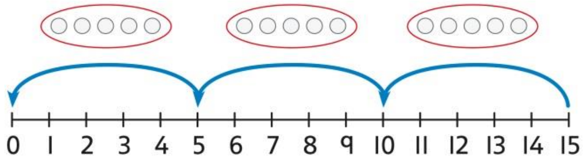
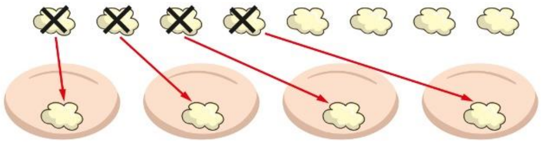
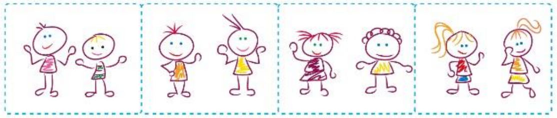
<tr>
<td></td>
<td>Bridging the 10 using number bonds
Children use a bead string to complete a 10 and understand how this relates to the addition.

7 add 3 makes 10.
So, 7 add 5 is 10 and 2 more.</td>
<td>Bridging the 10 using number bonds
Children use counters to complete a ten frame and understand how they can add using knowledge of number bonds to 10.

.</td>
<td>Bridging the 10 using number bonds
Use a part-whole model and a number line to support the calculation.

9 + 4 = 13</td>
</tr>
</table>

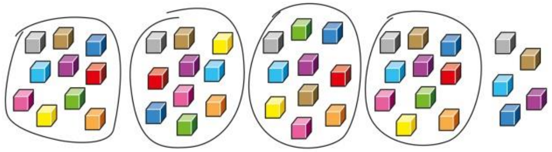
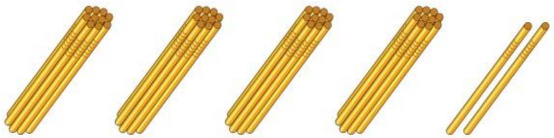
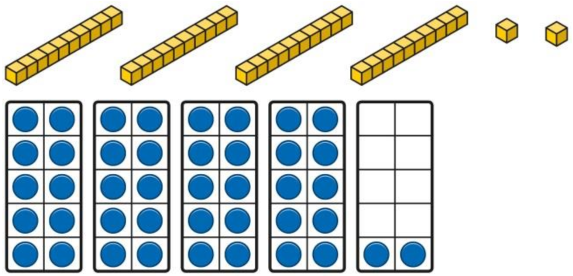
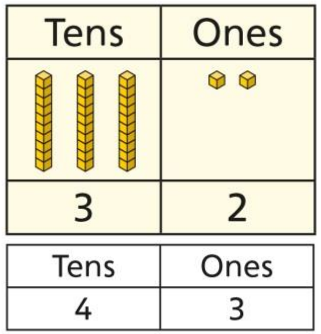
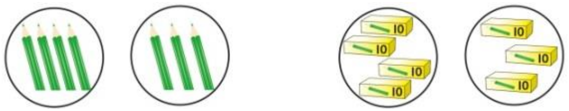
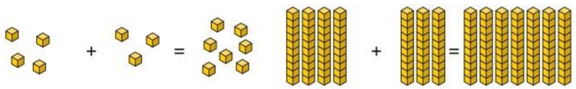
Year 1 Subtraction	**Counting back and taking away** Children arrange objects and remove to find how many are left.  *1 less than 6 is 5.* *6 subtract 1 is 5.*	**Counting back and taking away** Children draw and cross out or use counters to represent objects from a problem.  9 – ☐ = ☐ There are ☐ children left.	**Counting back and taking away** Children count back to take away and use a number line or number track to support the method.  *9 − 3 = 6*
	Finding a missing part, given a whole and a part Children separate a whole into parts and understand how one part can be found by subtraction.  *8 − 5 = ?*	**Finding a missing part, given a whole and a part** Children represent a whole and a part and understand how to find the missing part by subtraction.  5 – 4 = ☐	**Finding a missing part, given a whole and a part** Children use a part-whole model to support the subtraction to find a missing part.  *7 − 3 = ?* Children develop an understanding of the relationship between addition and subtraction facts in a part-whole model.

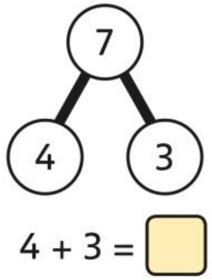
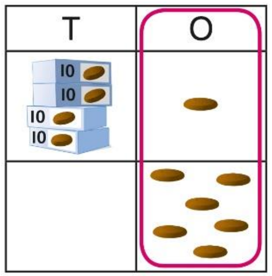
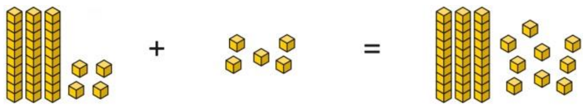
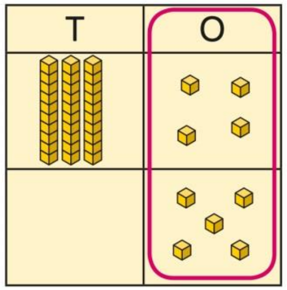
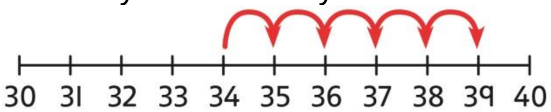
			
	Finding the difference Arrange two groups so that the difference between the groups can be worked out.  *8 is 2 more than 6.* *6 is 2 less than 8.* *The difference between 8 and 6 is 2.*	**Finding the difference** Represent objects using sketches or counters to support finding the difference.  *5 − 4 = 1* *The difference between 5 and 4 is 1.*	**Finding the difference** Children understand 'find the difference' as subtraction.  *10 − 4 = 6* *The difference between 10 and 6 is 4.*
	Subtraction within 20 Understand when and how to subtract 1s efficiently. Use a bead string to subtract 1s efficiently.  *5 − 3 = 2* *15 − 3 = 12*	**Subtraction within 20** Understand when and how to subtract 1s efficiently.  *5 − 3 = 2* *15 − 3 = 12*	**Subtraction within 20** Understand how to use knowledge of bonds within 10 to subtract efficiently. *5 − 3 = 2* *15 − 3 = 12*
	Subtracting 10s and 1s For example: 18 − 12	**Subtracting 10s and 1s** For example: 18 − 12	**Subtracting 10s and 1s** Use a part-whole model to support the calculation.

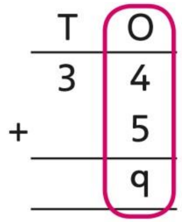
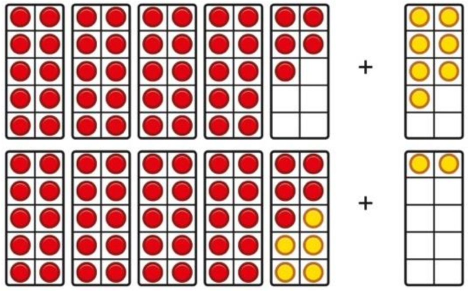
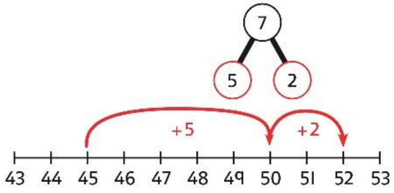
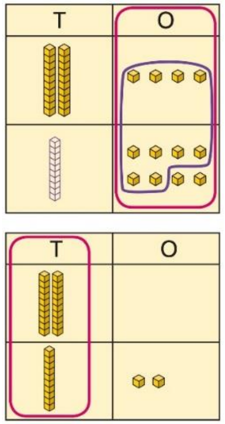
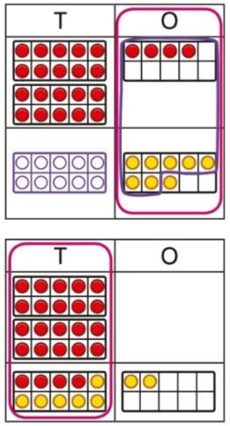
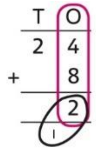
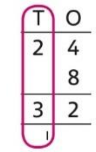
	Subtract 12 by first subtracting the 10, then the remaining 2.  *First subtract the 10, then take away 2.*	Use ten frames to represent the efficient method of subtracting 12.  *First subtract the 10, then subtract 2.*	 *19 − 14* *19 − 10 = 9* *9 − 4 = 5* *So, 19 − 14 = 5*
	Subtraction bridging 10 using number bonds For example: 12 − 7 Arrange objects into a 10 and some 1s, then decide on how to split the 7 into parts.  *7 is 2 and 5, so I take away the 2 and then the 5.*	**Subtraction bridging 10 using number bonds** Represent the use of bonds using ten frames.  *For 13 – 5, I take away 3 to make 10, then take away 2 to make 8.*	**Subtraction bridging 10 using number bonds** Use a number line and a part-whole model to support the method. *13 − 5* 
Year 1 Multiplication	**Recognising and making equal groups** Children arrange objects in equal and unequal groups and understand how to recognise whether they are equal. 	**Recognising and making equal groups** Children draw and represent equal and unequal groups. 	**Describe equal groups using words** *Three equal groups of 4.* *Four equal groups of 3.*

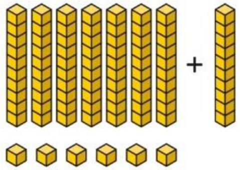
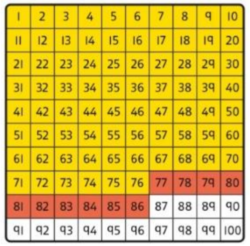
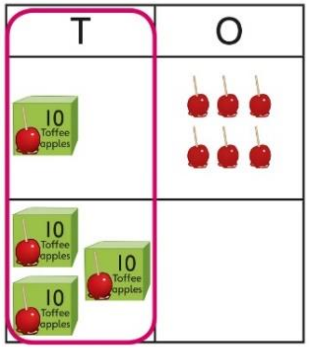
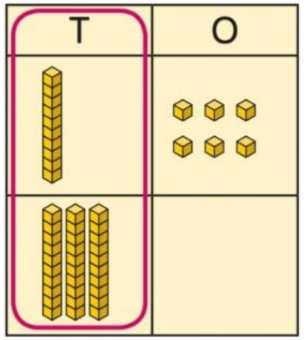
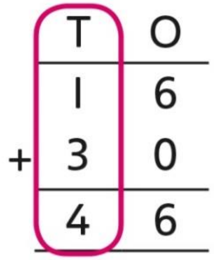
	Finding the total of equal groups by counting in 2s, 5s and 10s  There are 5 pens in each pack … 5…10…15…20…25…30…35…40…	**Finding the total of equal groups by counting in 2s, 5s and 10s** 100 squares and ten frames support counting in 2s, 5s and 10s. 	**Finding the total of equal groups by counting in 2s, 5s and 10s** Use a number line to support repeated addition through counting in 2s, 5s and 10s. 
Year 1 Division	**Grouping** Learn to make equal groups from a whole and find how many equal groups of a certain size can be made. Sort a whole set people and objects into equal groups.  *There are 10 children altogether.* *There are 2 in each group.* *There are 5 groups.*	**Grouping** Represent a whole and work out how many equal groups.  *There are 10 in total.* *There are 5 in each group.* *There are 2 groups.*	**Grouping** Children may relate this to counting back in steps of 2, 5 or 10. 
	Sharing Share a set of objects into equal parts and work out how many are in each part**.**	**Sharing** Sketch or draw to represent sharing into equal parts. This may be related to fractions.	**Sharing** *10 shared into 2 equal groups gives 5 in each group.*

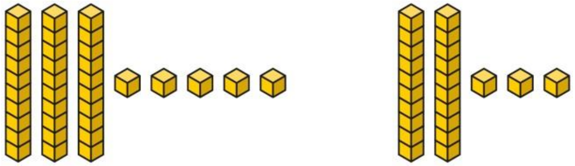
			

Year 2			
	Concrete	**Pictorial**	**Abstract**
Year 2 Addition			
Understanding 10s and 1s	Group objects into 10s and 1s.  Bundle straws to understand unitising of 10s. 	Understand 10s and 1s equipment, and link with visual representations on ten frames. 	Represent numbers on a place value grid, using equipment or numerals. 
Adding 10s	Use known bonds and unitising to add 10s. 	Use known bonds and unitising to add 10s. 	Use known bonds and unitising to add 10s.

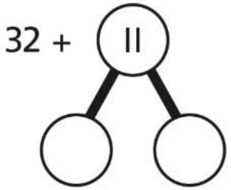
	I know that 4 + 3 = 7. *So, I know that 4 tens add 3 tens is 7 tens.*	*I know that 4 + 3 = 7.* *So, I know that 4 tens add 3 tens is 7 tens.*	 *4 + 3 = 7* *4 tens + 3 tens = 7 tens* *40 + 30 = 70*
Adding a 1-digit number to a 2-digit number not bridging a 10	Add the 1s to find the total. Use known bonds 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. 	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.* 	Add the 1s. Understand the link between counting on and using known number facts. Children should be encouraged to use known number bonds to improve efficiency and accuracy.  This can be represented horizontally or vertically. *34 + 5 = 39* *or*

			
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. 	Complete a 10 using number bonds.  *7 = 5 + 2* *45 + 5 + 2 = 52*
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.	Add the 10s and then recombine.	Add the 10s and then recombine. *37 + 20 = ?*

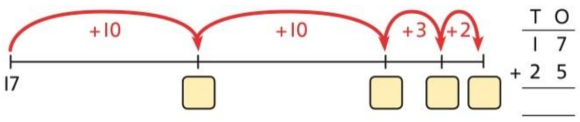
	 *27 is 2 tens and 7 ones.* *50 is 5 tens.* *There are 7 tens in total and 7 ones.* *So, 27 + 50 is 7 tens and 7 ones.*	 *66 is 6 tens and 6 ones.* *66 + 10 = 76* A 100 square can support this understanding. 	*30 + 20 = 50* *50 + 7 = 57* *37 + 20 = 57*
Adding a multiple of 10 to a 2-digit number using 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.  *1 + 3 = 4* *1 ten + 3 tens = 4 tens* *16 + 30 = 46*

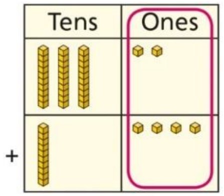
<table>
<tr><td></td><td></td><td></td><td></td></tr>
<tr>
<td>Adding two 2-digit numbers</td>
<td>Add the 10s and 1s separately.

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

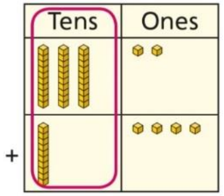
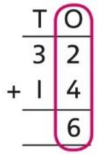
3 + 2 = 5
There are 5 tens in total.

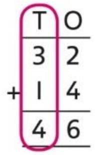
35 + 23 = 58</td>
<td>Add the 10s and 1s separately. Use a part-whole model to support.


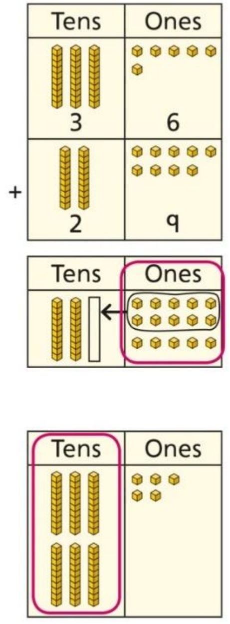
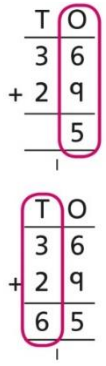
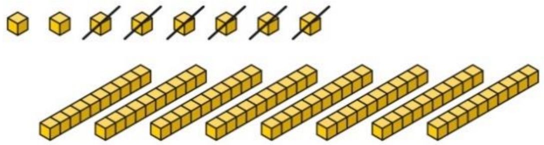
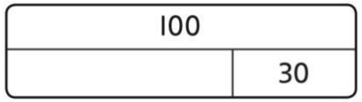
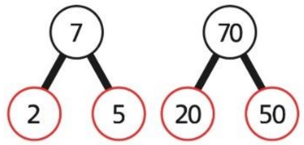
11 = 10 + 1
32 + 10 = 42
42 + 1 = 43

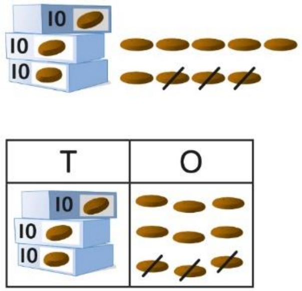
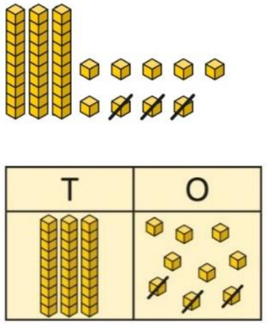
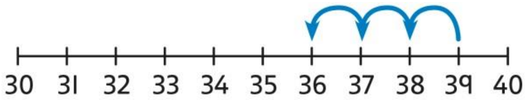
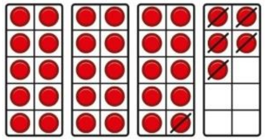
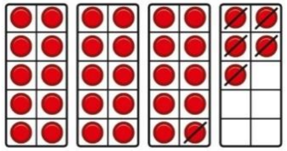
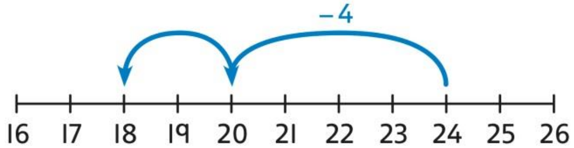
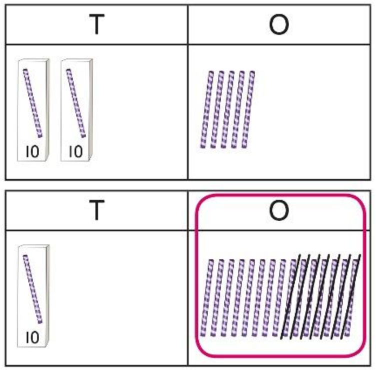
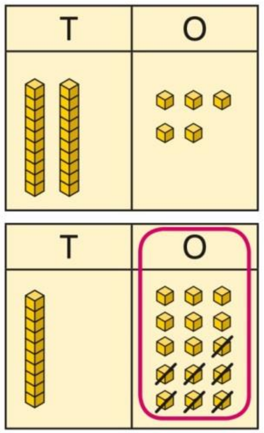
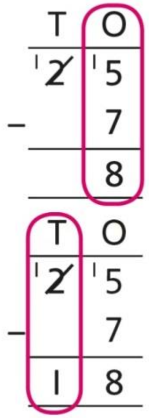
32 + 11 = 43</td>
<td>Add the 10s and the 1s separately, bridging 10s where required. A number line can support the calculations.


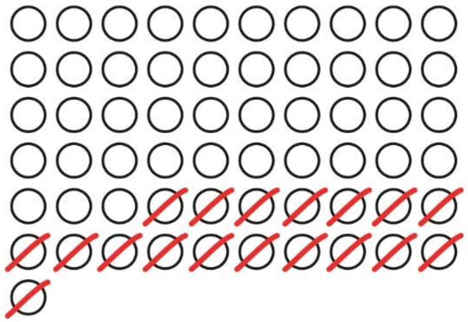
17 + 25</td>
</tr>
<tr>
<td>Adding two 2-digit numbers using a place value grid</td>
<td>Add the 1s. Then add the 10s.


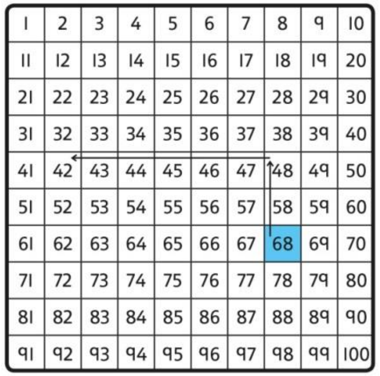

</td>
<td></td>
<td>Add the 1s. Then add the 10s.


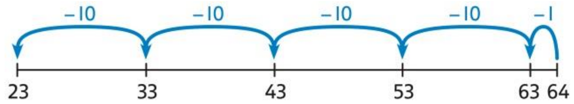

</td>
</tr>
<tr>
<td>Adding two 2-digit numbers with exchange</td>
<td>Add the 1s. Exchange 10 ones for a ten. Then add the 10s.</td>
<td></td>
<td>Add the 1s. Exchange 10 ones for a ten. Then add the 10s.</td>
</tr>
</table>

	 		
Year 2 Subtraction			
Subtracting multiples of 10	Use known number bonds and unitising to subtract multiples of 10.  *8 subtract 6 is 2.* *So, 8 tens subtract 6 tens is 2 tens.*	Use known number bonds and unitising to subtract multiples of 10.  *10 − 3 = 7* *So, 10 tens subtract 3 tens is 7 tens.*	Use known number bonds and unitising to subtract multiples of 10.  *7 tens subtract 5 tens is 2 tens.* *70 − 50 = 20*
Subtracting a single-digit number	Subtract the 1s. This may be done in or out of a place value grid.	Subtract the 1s. This may be done in or out of a place value grid.	Subtract the 1s. Understand the link between counting back and subtracting the 1s using known bonds.

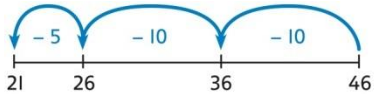
			 T O 3 9 − 3 3 6 *9 − 3 = 6* *39 − 3 = 36*
Subtracting a single-digit number bridging 10	Bridge 10 by using known bonds.  *35 − 6* *I took away 5 counters, then 1 more.*	Bridge 10 by using known bonds.  *35 − 6* *First, I will subtract 5, then 1.*	Bridge 10 by using known bonds.  *24 − 6 = ?* *24 − 4 − 2 = ?*
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. 	Exchange 1 ten for 10 ones. 	Exchange 1 ten for 10 ones.  *25 − 7 = 18*

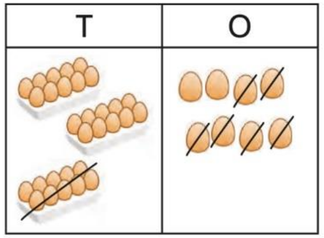
<table>
<tr>
<td>Subtracting a 2-digit number</td>
<td>Subtract by taking away.

61 − 18
I took away 1 ten and 8 ones.</td>
<td>Subtract the 10s and the 1s.

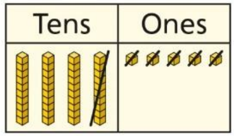
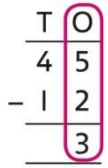
This can be represented on a 100 square.

</td>
<td>Subtract the 10s and the 1s.

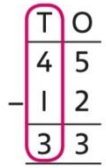
This can be represented on a number line.


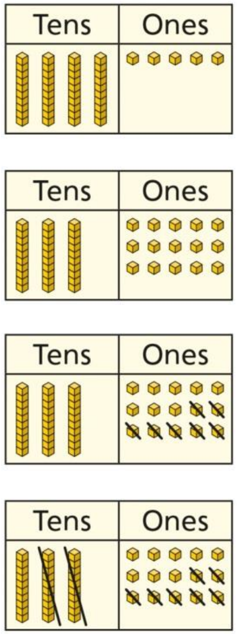
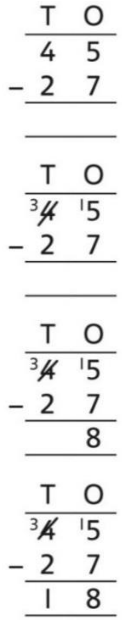
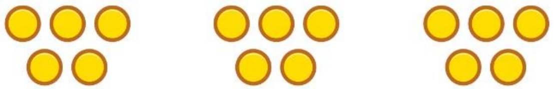
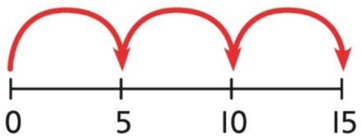
64 − 41 = ?

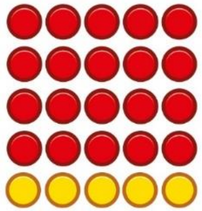
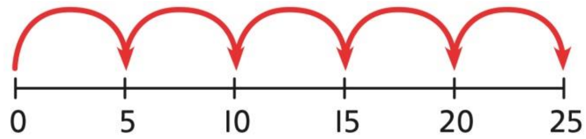
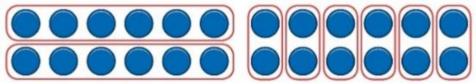
64 − 1 = 63
63 − 40 = 23
64 − 41 = 23


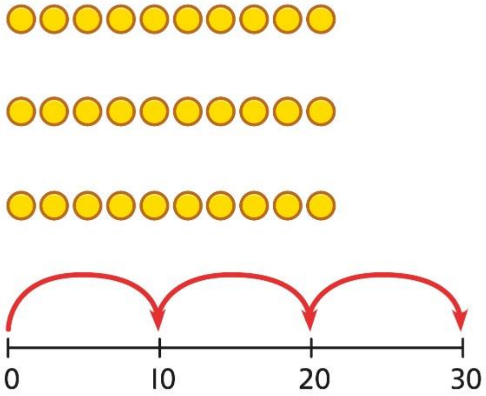
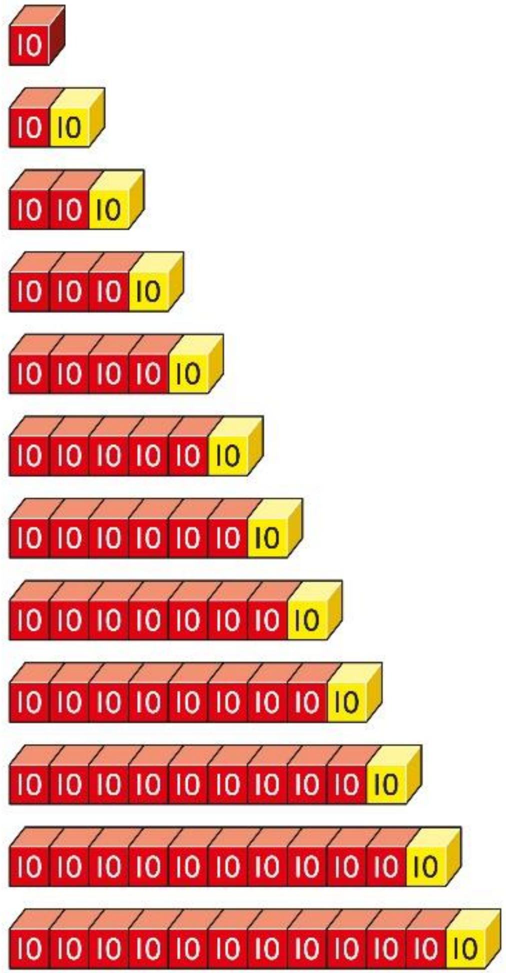
46 − 20 = 26
26 − 5 = 21
46 − 25 = 21</td>
</tr>
<tr>
<td>Subtracting a 2-digit number using place value and columns</td>
<td>Subtract the 1s. Then subtract the 10s. This may be done in or out of a place value grid.


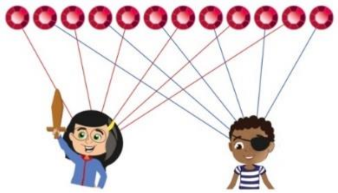
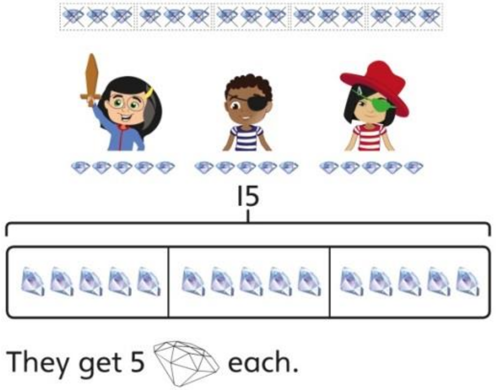
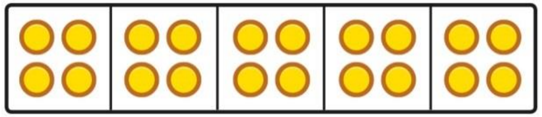
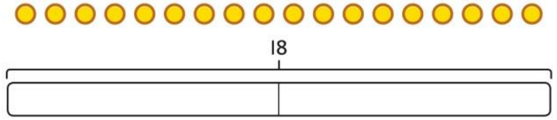
38 − 16 = 22</td>
<td>Subtract the 1s. Then subtract the 10s.

</td>
<td>Using column subtraction, subtract the 1s. Then subtract the 10s.


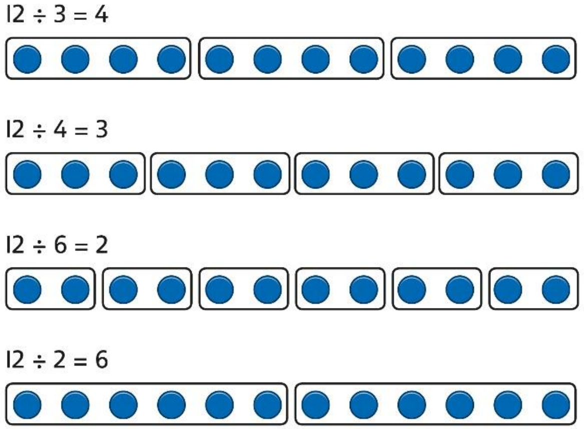
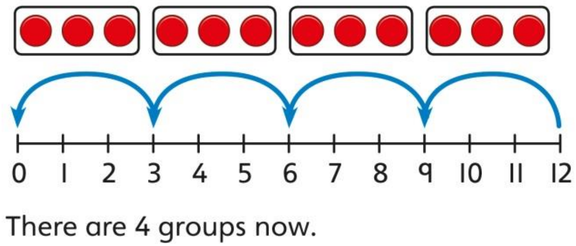

</td>
</tr>
</table>

Subtracting a 2-digit number with exchange		Exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s.  	Using column subtraction, exchange 1 ten for 10 ones. Then subtract the 1s. Then subtract the 10s. 
Year 2 Multiplication			
Equal groups and repeated addition	Recognise equal groups and write as repeated addition and as multiplication.  *3 groups of 5 chairs* *15 chairs altogether*	Recognise equal groups using standard objects such as counters and write as repeated addition and multiplication.  *3 groups of 5* *15 in total*	Use a number line and write as repeated addition and as multiplication.  *5 + 5 + 5 = 15* *3 × 5 = 15*

Using arrays to represent multiplication and support understanding	Understand the relationship between arrays, multiplication and repeated addition.  *4 groups of 5*	Understand the relationship between arrays, multiplication and repeated addition.  *4 groups of 5 … 5 groups of 5*	Understand the relationship between arrays, multiplication and repeated addition.  *5 × 5 = 25*
Understanding commutativity	Use arrays to visualise commutativity.  *I can see 6 groups of 3.* *I can see 3 groups of 6.*	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 × 5 = 20 and 5 × 4 = 20*
Learning ×2, ×5 and ×10 table facts	Develop an understanding of how to unitise 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.	Understand how the times-tables increase and contain patterns.

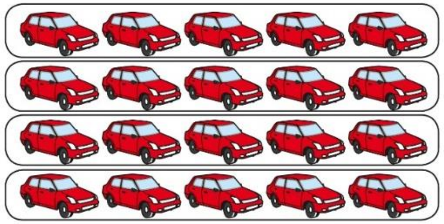
	 *3 groups of 10 … 10, 20, 30* *3 × 10 = 30*	 *10 + 10 + 10 = 30* *3 × 10 = 30*	 *5 × 10 = 50* *6 × 10 = 60*
Year 2 Division			
Sharing equally	Start with a whole and share into equal parts, one at a time.	Represent the objects shared into equal parts using a bar model.	Use a bar model to support understanding of the division.

	 *12 shared equally between 2.* *They get 6 each.* 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  *15 shared equally between 3.* *They get 5 each.*	 *20 shared into 5 equal parts.* *There are 4 in each part.*	 *18 ÷ 2 = 9*
Grouping equally	Understand how to make equal groups from a whole. 	Understand the relationship between grouping and the division statements.	Understand how to relate division by grouping to repeated subtraction.

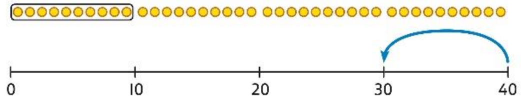
<table>
<tr>
<td></td>
<td>8 divided into 4 equal groups.
There are 2 in each group.</td>
<td>
</td>
<td>

12 divided into groups of 3.
12 ÷ 3 = 4

There are 4 groups.</td>
</tr>
<tr>
<td>Using known times-tables to solve divisions</td>
<td>Understand the relationship between multiplication facts and division.

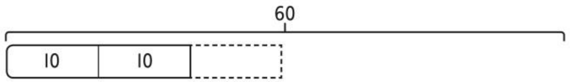


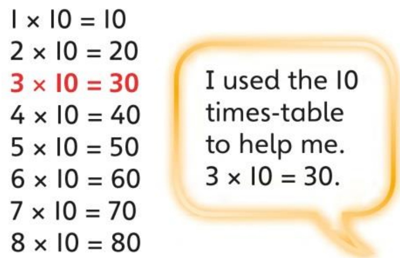
4 groups of 5 cars is 20 cars in total.
20 divided by 4 is 5.</td>
<td>Link equal grouping with repeated subtraction and known times-table facts to support division.



40 divided by 4 is 10.

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


</td>
<td>Relate times-table knowledge directly to division.



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

3 × 10 = 30 so 30 ÷ 10 = 3</td>
</tr>
</table>