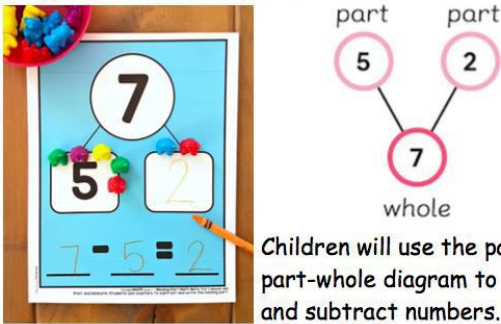
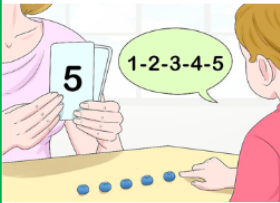
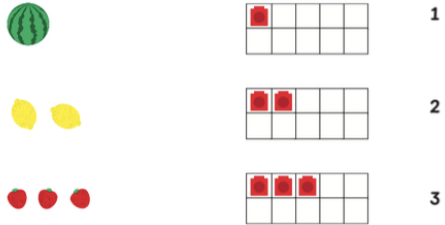
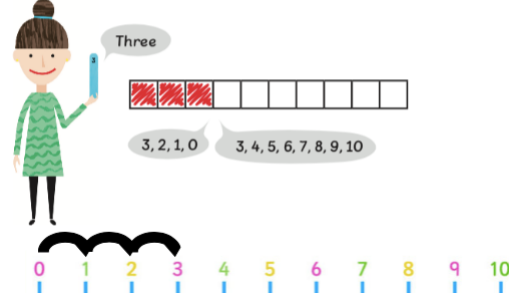
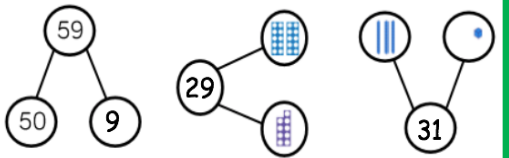
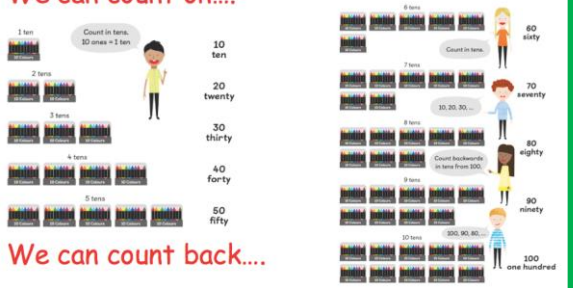
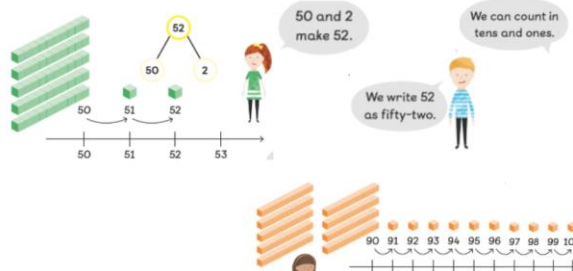
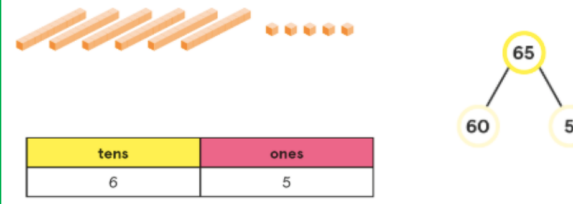
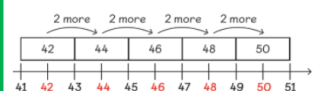


Main Principles	Foundation (1-20)	Year 1 (1-100)	Year 2 (HTU)
Place Value	One-to-one correspondence: Children first learn to count using one to one correspondence.  Children will be encouraged to say a number each time they touch an object. Using physical resources:  Children begin by practically taking away one or adding one more. They will also be able to use drawings to support them. Part-part-whole model:  Children will use the part-part-whole diagram to add and subtract numbers. Number lines:   Children will be able to use a number line to count, as well as using it to take away or add one. This will be for numbers up to 20. Recognising numerals:  Children learn to recognise numerals to 20. They are beginning to match the numeral with the correct corresponding quantity.	Counting to 10: We can count on....  Count on from 1. 1, 2, 3, 4, 5 Counting with objects:  Physical objects Tens squares Counting with number lines:  Three 3, 2, 1, 0 3, 4, 5, 6, 7, 8, 9, 10 Number bond method:  Separating the numbers apart like this is called partitioning. Comparing numbers: There are 3 cupcakes. There are 5 cookies. There are 7 doughnuts. Which number is more than the others? Which number is less than the others?  7 is more than 5. 7 is more than 3. 7 is the greatest. 3 is less than 7. 3 is less than 5. 3 is the smallest.	Counting in tens to 100: We can count on....  Count in tens. 10 ones = 1 ten. Count in tens. Count back in tens. Count back in tens from 100. We can count back.... Counting in tens and ones:  50 and 2 make 52. We can count in tens and ones. We write 52 as fifty-two. We can represent two-digit numbers in these ways:  Comparing numbers: using more than and less than signs (> and <) We can extend number patterns:  We can make a number pattern. Each number is 2 more than the number before it. We can find the missing numbers in patterns: 

Main Principles

Addition

Key written methods to be taught.

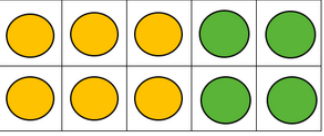
Potential mental methods for extension.

Foundation

Number bonds using Tens frame:

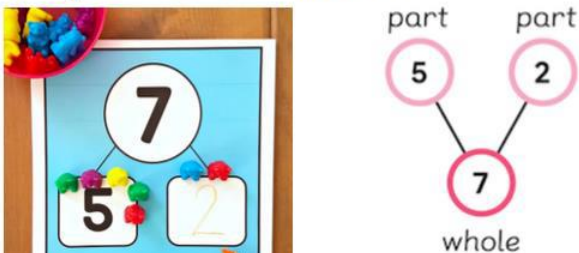
Tens frame:

Children will be able to use a tens frame to find number bonds to 10.



The tens frame shows $6 + 4 = 10$

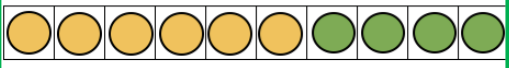
Part-part-whole model:



Children will use the part-part-whole diagram to add and subtract numbers.

Year 1 (U + U)

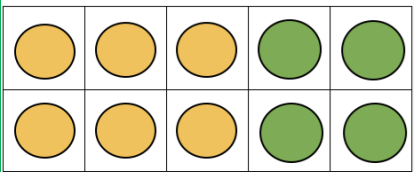
Tens strip:



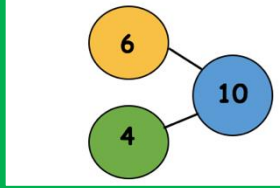
Count on from the biggest number:

$$6 + 4 = 10$$

Tens frame:



Number bond method:



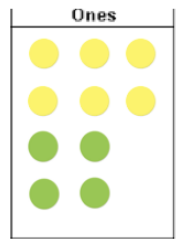
Number bond method:

$$6 + 4 = 10$$

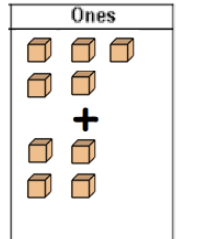
Picture method:



Counters method:



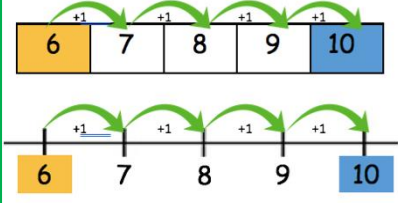
Base 10 method:



Bar model:



Number line method:

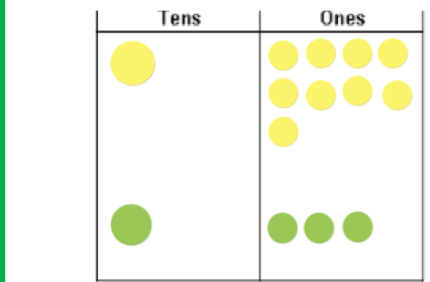


Abstract calculations:

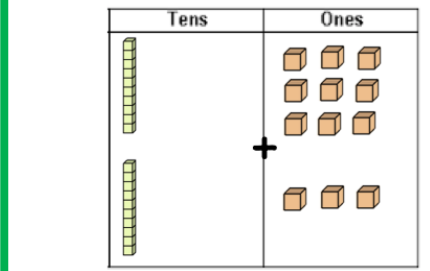
Commutative	Inverse
$2 + 5 = 7$	$7 - 5 = 2$
$5 + 2 = 7$	$7 - 2 = 5$

Year 2 (TU + TU)

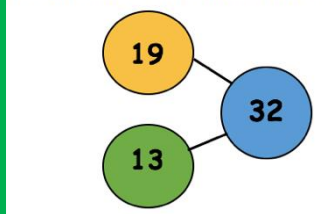
Counters method:



Base 10 method:



Number bond method:



Number bond method:

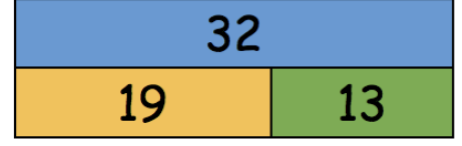
$$19 + 13 = 32$$

$9 + 3 = 12$
 $10 + 10 = 20$
 $20 + 12 = 32$

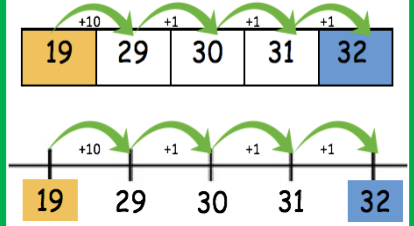
Column addition:

Without renaming:	With renaming:	Expanded method:
$\begin{array}{r} 18 \\ + 11 \\ \hline 29 \end{array}$	$\begin{array}{r} 19 \\ + 13 \\ \hline 32 \end{array}$	$\begin{array}{r} 19 \\ + 13 \\ \hline 12 \\ 20 \\ \hline 32 \end{array}$

Bar model:

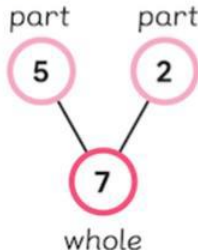
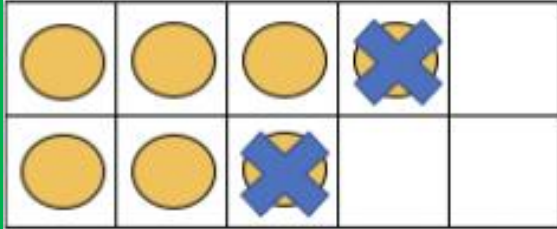
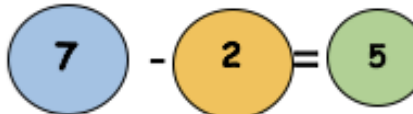
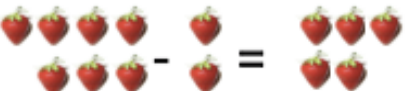
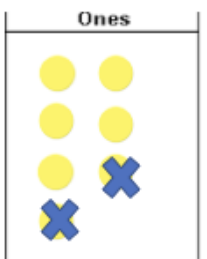
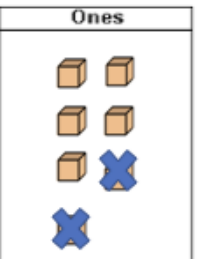
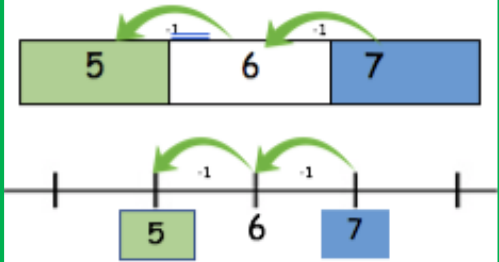
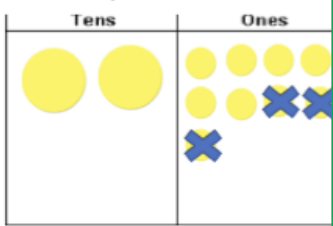
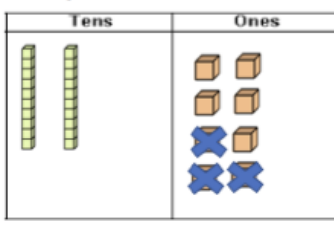
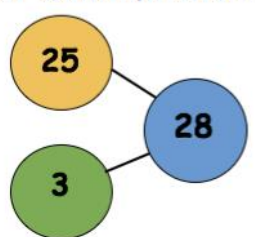
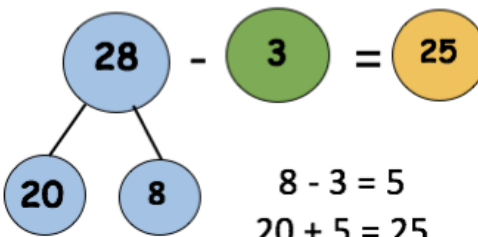
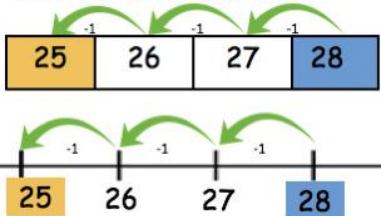
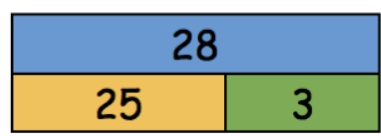


Number line method:



Abstract calculations:

Commutative	Inverse
$19 + 13 = 32$	$32 - 13 = 19$
$13 + 19 = 32$	$32 - 19 = 13$

Main Principles	Foundation	Year 1 (U - U)	Year 2 (TU – TU)						
Subtraction	Number lines:   Children will be able to use a number line to count, as well as using it to take away or add one. This will be for numbers up to 20. Part-part-whole model:  Children will use the part-part-whole diagram to add and subtract numbers.	Tens strip:  Count back from the biggest number: $7 - 2 = 5$ Tens frame:  Number bond method:  Picture method:  Counters method:  Base 10 method:  Number line method: 	Counters method:  Base 10 method:  Number bond method:  Number bond method:  Number line method:  Bar model:  Column subtraction: Without renaming: $28 - 3 = 25$ With renaming: $28 - 19 = 9$ Expanded method: $29 - 14 = 15$ Abstract calculations: <table><tr><th>Commutative</th><th>Inverse</th></tr><tr><td>$25 + 3 = 28$</td><td>$28 - 3 = 25$</td></tr><tr><td>$3 + 25 = 28$</td><td>$28 - 25 = 3$</td></tr></table>	Commutative	Inverse	$25 + 3 = 28$	$28 - 3 = 25$	$3 + 25 = 28$	$28 - 25 = 3$
Commutative	Inverse								
$25 + 3 = 28$	$28 - 3 = 25$								
$3 + 25 = 28$	$28 - 25 = 3$								

Key written methods to be taught.

Potential mental methods for extension

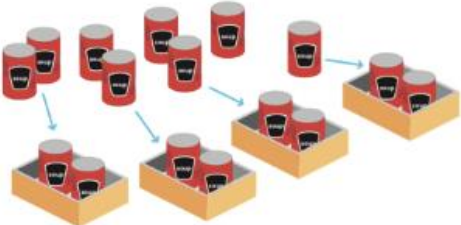
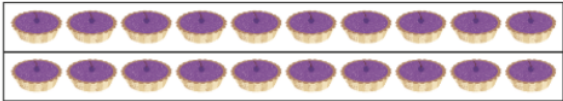
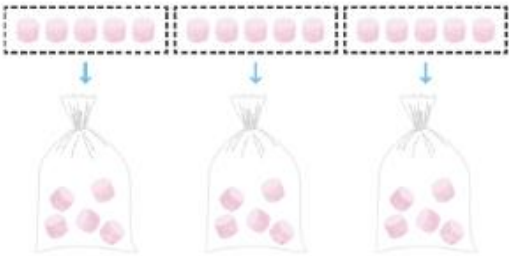
Key written methods to be taught.

Potential mental methods for extension

Main Principles	Foundation	Year 1	Year 2
Multiplication	Making doubles Making equal groups	Making equal rows Adding equal groups	Number line method: Groups of: Repeated addition: Multiplication: Grouping Method: Abstract calculations: Commutative $3 \times 4 = 12$ $4 \times 3 = 12$

Key written methods to be taught.

Potential mental methods for extension

Main Principles	Foundation	Year 1	Year 2
Division Key written methods to be taught. Potential mental methods for extension	Grouping equally There are 8 cans.  There are 4 boxes of 2 cans. Sharing equally There are 6 cookies and 3 children. Each child takes one cookie.  Each child takes one more cookie.  Each child gets 2 cookies.		Make a family of multiplication and division facts: Look at the picture. Make a family of multiplication and division facts.  $\begin{array}{l} 2 \times 10 = 20 \quad \quad 20 \div 2 = 10 \\ 10 \times 2 = 20 \quad \quad 20 \div 10 = 2 \end{array}$ Solving Problems Ruby has 15 marshmallows. She packs 5 marshmallows into each bag. How many bags does Ruby need? Method 1 Use  to stand for . Use  for each bag.  Method 2 Draw a picture.  Method 3 Use a division equation. $15 \div 5 = 3$ Ruby needs 3 bags.

