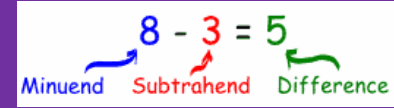


# Calculation Policy: Subtraction

Key language: take away, less than, the difference, subtract, minus, fewer, decrease, reduction (taking away), minuend, subtrahend



## EYFS

- Using quantities and objects, they subtract two single-digit numbers and count back to find the answer.

Concrete	Pictorial	Abstract				
<p><b>Physically taking away and removing objects from a whole</b> (ten frames, Numicon, cubes and other items such as beanbags could be used).</p> <p>Focus on the language of 1 less</p>	<p>Children to draw the concrete resources they are using and cross out the correct amount. The bar model can also be used.</p>	<p><math>4 - 3 =</math></p> <p><math>= 4 - 3</math></p> <table border="1" data-bbox="1783 762 2096 842"> <tr> <td colspan="2">4</td> </tr> <tr> <td>3</td> <td>?</td> </tr> </table>	4		3	?
4						
3	?					

**Counting back – Also used in Band 1**

Use counters and move them away from the group as you take them away counting backwards as you go.

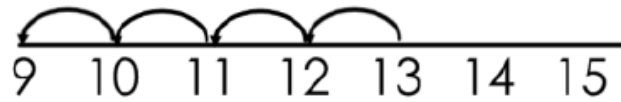


Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones.

13 – 4



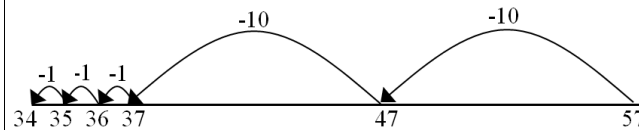
Count back on a number line or number track



Start at the bigger number and count back the smaller number showing the jumps on the number line.

This can progress all the way to counting back using two 2 digit numbers for later bands.

57 – 23 = 24

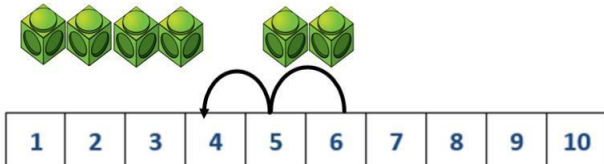


Children to draw their own number lines.

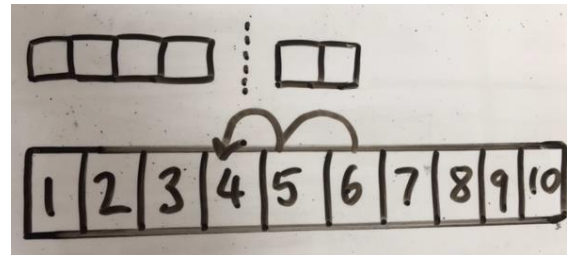
Put 13 in your head, count back 4. What number are you at? Use your fingers to help.

**Counting back** (using number lines or number tracks) children start with 6 and count back 2.

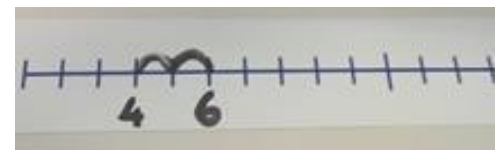
6 – 2 = 4



Children to represent what they see pictorially e.g.



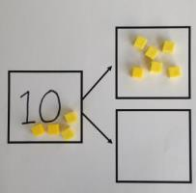
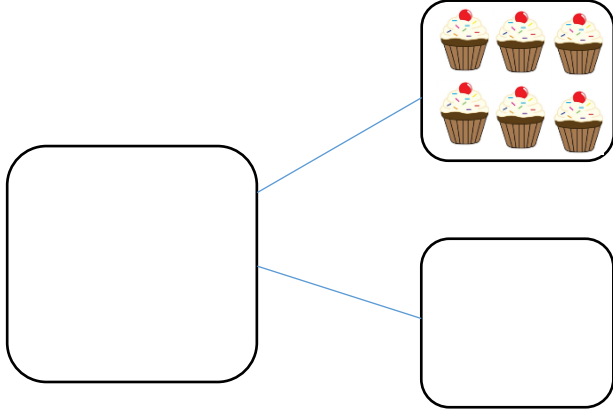
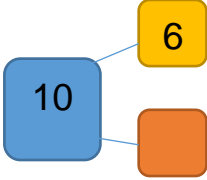
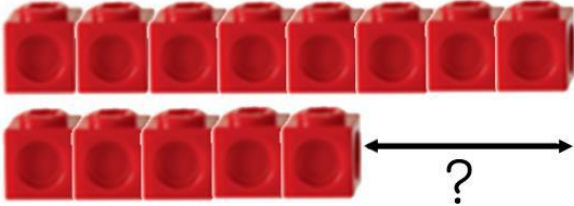
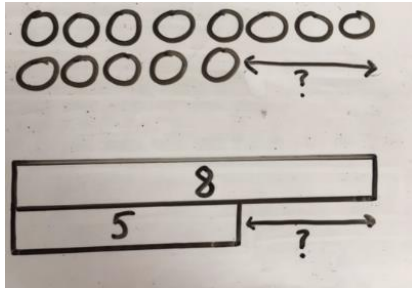
Children to represent the calculation on a number line or number track and show their jumps. Encourage children to use an empty number line



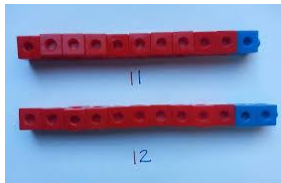
Also used in Band 1

Band 1

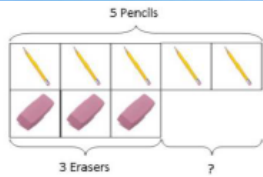
- Subtract one-digit and two-digit numbers to 20, including zero.

<p><b>Part-part whole model</b></p>  <p>Link to addition- use the part whole model to help explain the inverse between addition and subtraction.</p> <p>If 10 is the whole and 6 is one of the parts. What is the other part?</p> <p style="text-align: center;"><math>10 - 6 =</math></p> <p>Link numbers to stories to give them a context, e.g. There are 10 children in the park. 6 are on the swings, the rest are on the slides. How many on the slides?</p> <p>There are 10 cakes on the plate. We ate 6, how many are left?</p>	<p>Use a pictorial representation of objects to show the part whole model.</p> 	<p>Move to using numbers within the part whole model.</p>  <p>Children can create stories themselves about the part-part whole model.</p>
<p><b>Finding the difference</b> (using cubes, Numicon or Cuisenaire rods, other objects can also be used).</p> <p>Calculate the difference between 8 and 5.</p> 	<p>Children to draw the cubes/other concrete objects which they have used or use the bar model to illustrate what they need to calculate.</p> 	<p>Find the difference between 8 and 5.</p> <p>8 – 5, the difference is [ ]</p> <p>Children to explore why <math>9 - 6 = 8 - 5 = 7 - 4</math> have the same difference.</p>

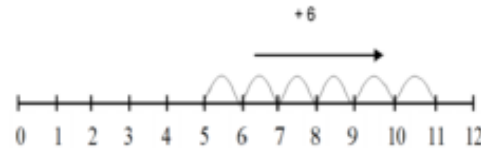
Compare amounts and objects to find the difference.



Use cubes to build towers or make bars to find the difference



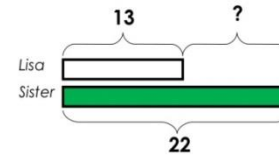
Use basic bar models with items to find the difference



Count on to find the difference.

**Comparison Bar Models**

Lisa is 13 years old. Her sister is 22 years old. Find the difference in age between them.

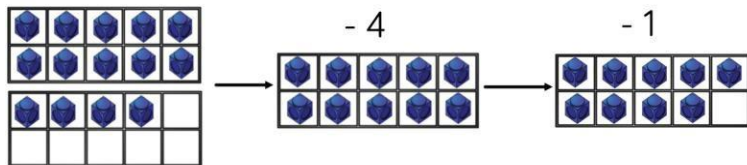


Draw bars to find the difference between two numbers.

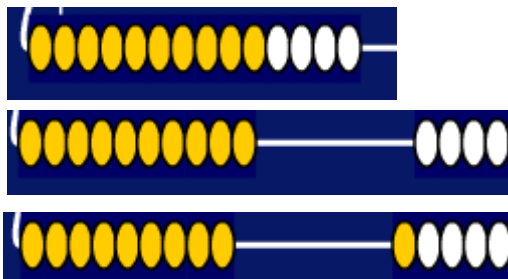
Hannah has 23 sandwiches, Helen has 15 sandwiches. Find the difference between the number of sandwiches.

**Bridging through 10**

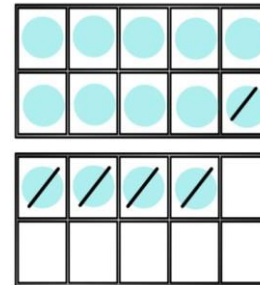
Using ten frames. 14 - 5



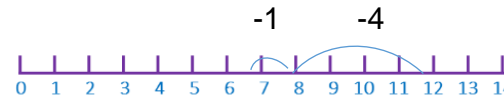
Using bead strings



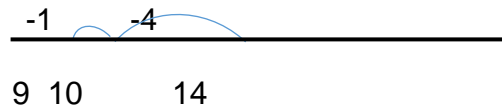
Children to present the ten frame pictorially and discuss what they did to make 10.



Children to use a number line



Children to draw their own number line.



Children to show how they can make 10 by partitioning the subtrahend.

$$14 - 5 = 9$$

$$\begin{array}{c} 4 \quad 1 \end{array}$$

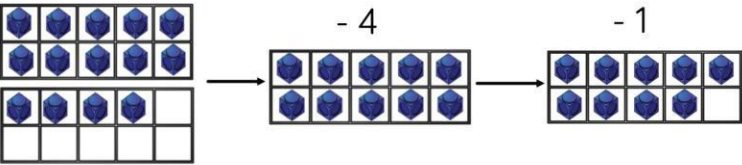
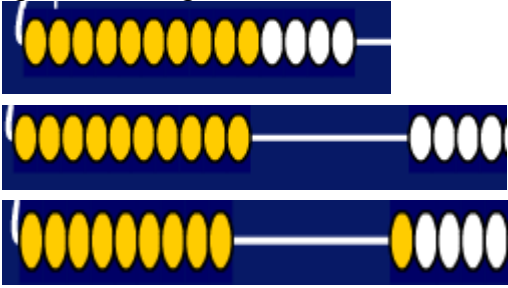
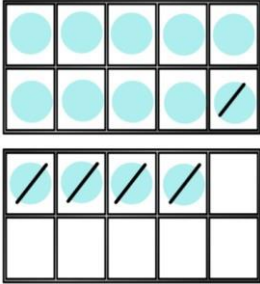
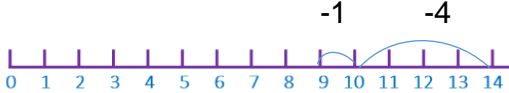
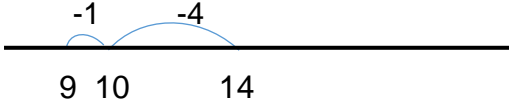
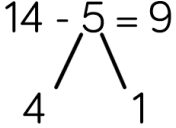
$$14 - 4 = 10$$

$$10 - 1 = 9$$

Band 2

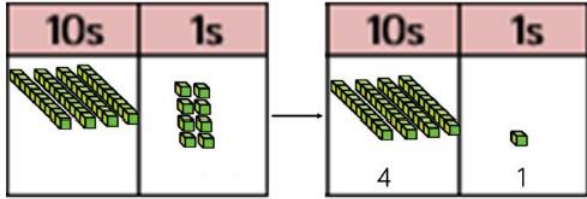
Subtract numbers using concrete objects, pictorial representations, and mentally, including:

- a two-digit number and ones
- a two-digit number and tens
- two two-digit numbers

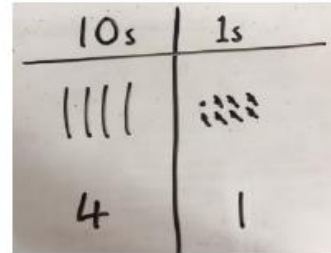
Concrete	Pictorial	Abstract
<p><b>Bridging through 10</b> Using ten frames. <math>14 - 5</math></p>  <p>Using bead strings</p> 	<p>Children to present the ten frame pictorially and discuss what they did to make 10.</p>  <p>Children to use a number line</p>  <p>Children to draw their own number line.</p> 	<p>Children to show how they can make 10 by partitioning the subtrahend.</p> $14 - 5 = 9$  $14 - 4 = 10$ $10 - 1 = 9$

Column method using dienes

48-7



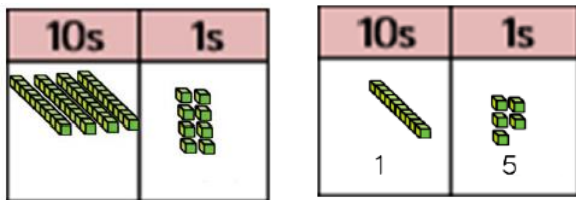
Children to represent the dienes pictorially.



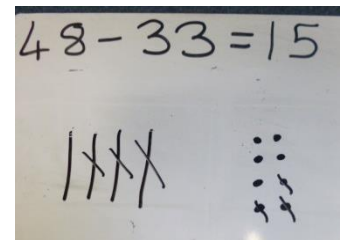
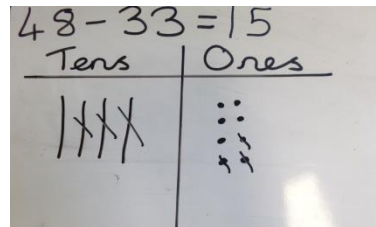
$$\begin{array}{r} 48 - 7 \\ 40 - 0 = 40 \\ 8 - 7 = 1 \end{array}$$

	4	8
-		7
	4	1

48 - 33 = 15



Children to represent the dienes pictorially.



48 - 33 = 15

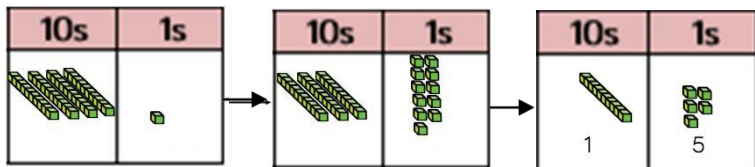
$$\begin{array}{r} 48 - 33 = 15 \\ 40 \quad 8 \quad 30 \quad 3 \\ 40 - 30 = 10 \\ 8 - 3 = 5 \\ 10 + 5 = 15 \end{array}$$

48 - 33 = 15

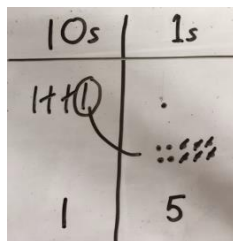
$$\begin{array}{r} 48 - 33 = 15 \\ 30 \quad 3 \\ 48 - 30 = 18 \\ 18 - 3 = 5 \end{array}$$

**Column method** using base 10 and having to exchange.

41 - 26



Represent the base 10 pictorially, remembering to show the exchange.



Expanded column method

$$41 - 26 = 15$$

$$41 - 20 = 21$$

$$21 - 6 = 15$$

or

$$41 - 6 = 35$$

$$35 - 20 = 15$$

Formal column method. Children must understand that when they have exchanged the 10 they still have 41 because  $41 = 30 + 11$ .

	<del>4</del> <sup>3</sup>	1
-	2	6
	1	5

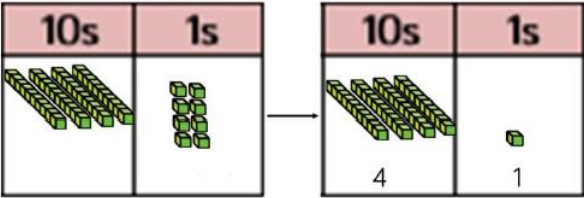
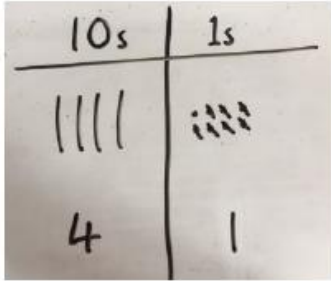
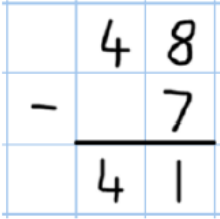
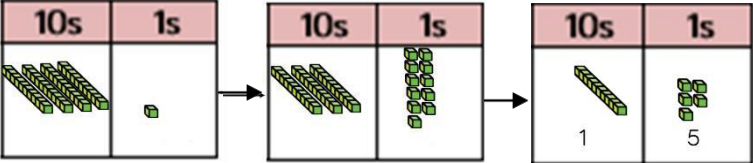
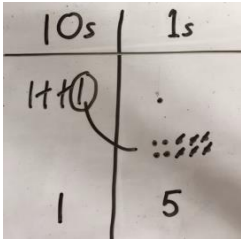
Band 3

Subtract number mentally, including:

- a three-digit number and ones
- a three-digit number and tens
- a three-digit number and hundreds

Subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction

Solve problems including missing number problems, using number facts, place value, and more complex subtraction

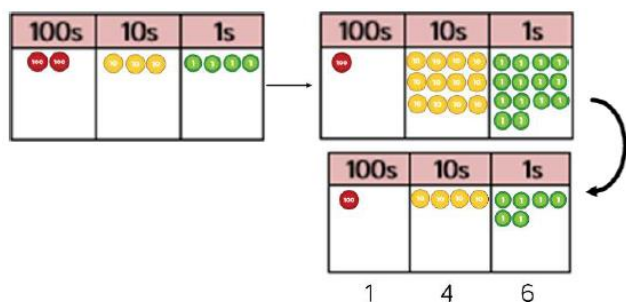
Concrete	Pictorial	Abstract
<p><b>Column method</b> using dienes 48-7</p> 	<p>Children to represent the dienes pictorially.</p> 	
<p><b>Column method</b> using base 10 and having to exchange. 41-26</p> 	<p>Represent the base 10 pictorially, remembering to show the exchange.</p> 	<p>Expanded column method  <math>41 - 26 = 15</math>  <math>\begin{array}{r} 41 \\ - 26 \\ \hline 20 \quad 6 \\ 41 - 20 = 21 \\ 21 - 6 = 15 \end{array}</math>          or  <math>41 - 6 = 35</math>  <math>35 - 20 = 15</math></p> <p>Formal column method. Children</p>



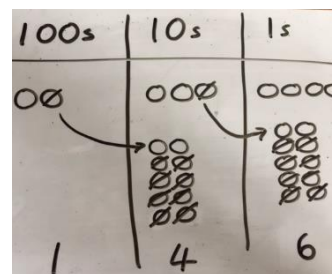
must understand that when they have exchanged the 10 they still have 41 because  $41 = 30 + 11$ .

$$\begin{array}{r} \cancel{3} \cancel{4} 1 \\ - 26 \\ \hline 15 \end{array}$$

**Column method** using place value counters.  
234 – 88



Represent the place value counters pictorially; remembering to show what has been exchanged.



Formal column method. Children must understand what has happened when they have crossed out digits.

$$\begin{array}{r} \overset{2}{2} \overset{1}{3} 4 \\ - 88 \\ \hline 6 \end{array}$$

#### Band 4

- subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate
- estimate and use inverse operations to check answers to a calculation
- solve addition and subtraction two-step problems in contexts, deciding which operations and methods to use and why.

Concrete

Pictorial

Abstract

See strategies taught in earlier bands

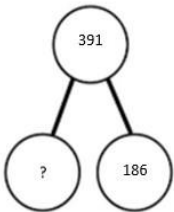
Band 5

- subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)
- subtract numbers mentally with increasingly large numbers
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Band 6

- perform mental calculations, including with mixed operations and large numbers
- use their knowledge of the order of operations to carry out calculations involving the four operations
- solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why

Concrete	Pictorial	Abstract
See strategies taught in earlier bands		

Conceptual variation; different ways to ask children to solve 391 - 186							
	<p>Raj spent £391, Timmy spent £186. How much more did Raj spend?</p> <p>Calculate the difference between 391 and 186.</p>	$\square\square\square = 391 - 186$ $\begin{array}{r} 391 \\ -186 \\ \hline \end{array}$ <p>What is 186 less than 391?</p>	<p>Missing digit calculations</p> $\begin{array}{r} 39\square \\ -\square\square 6 \\ \hline \square 0 5 \end{array}$				
<table border="1" style="margin-left: auto; margin-right: auto;"> <tr> <td colspan="2" style="text-align: center;">391</td> </tr> <tr> <td style="text-align: center;">186</td> <td style="text-align: center;">?</td> </tr> </table>	391		186	?			
391							
186	?						