

Subtraction Calculation Policy

Reception

Year	Topic/Strand	Representation	Key Idea
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Reception

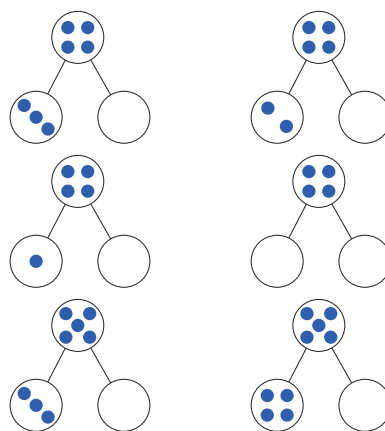
Perceptual Subitising

	0	zero
	1	one
	2	two
	3	three
	4	four
	5	five

A key development underpinning the ability to subtract is subitising. Perceptual subitising is when pupils can recognise the quantity of items in groups up to 5 without counting each item.


Reception

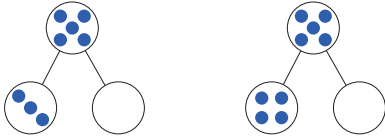
Part-Part-Whole

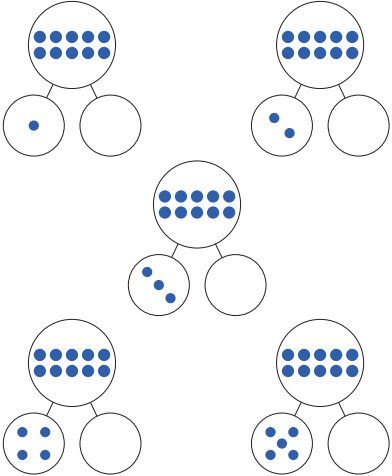


This is a mathematical structure that underpins subtraction situations. Numbers can be understood in terms of their parts; understanding that the parts are part of a larger collection.

Year	Topic/Strand	Representation	Key Idea
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Reception	Conceptual Subitising		<p>Pupils are able to recognise different quantities by combining within a group without counting them.</p> <p>Pupils can combine these quantities to find the whole amount. This skill is used when subtracting small amounts.</p>
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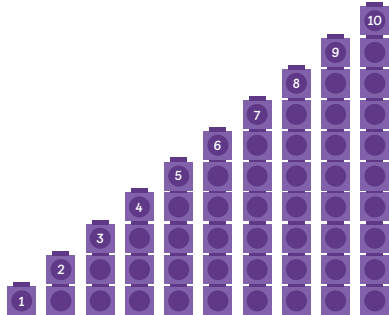
Reception	Composition of 5		<p>Pupils are able to demonstrate all possible whole number compositions of 5, including recognising and showing 5 on a five frame and using a number bond diagram.</p>
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Reception	Composition of 10		<p>Pupils are able to demonstrate all possible whole number compositions of 10, including recognising and showing 10 on a ten frame and using a number bond diagram.</p>
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Year	Topic/Strand	Representation	Key Idea
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Reception

**Subtracting 1,
1 Less**

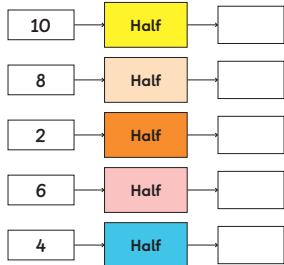


1 more than 3 is . 1 less than 4 is .
 1 more than 5 is . 1 less than 7 is .
 1 more than 9 is . 1 less than 10 is .

Pupils relate subtracting 1 to one less than the starting number.

Reception

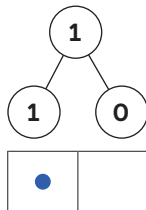
Doubles



By knowing doubles, pupils can find half of a quantity that remains after half the quantity is subtracted.

Reception

**Subtracting
Zero**


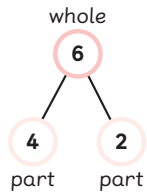



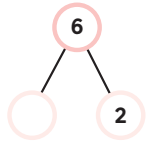
Pupils understand zero can be subtracted from any number but the number will remain unchanged.

Subtraction Calculation Policy

Year 1

Year	Topic/Strand	Representation	Key Idea
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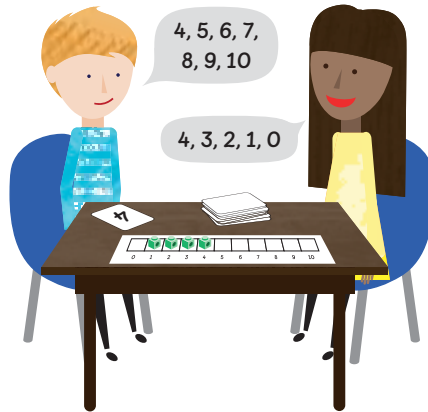
<p>Year 1</p> <p>Part-Part-Whole</p>	 <p>$6 - 4 = 2$</p>  <p>There are 6 elephants.</p> <p>4 elephants are adults.</p>  <p>2 elephants are not adults.</p>	<p>This is a mathematical structure that underpins subtraction situations. Numbers can be understood in terms of their parts; understanding that the parts are part of a larger collection.</p> <p>Pupils develop an understanding of the parts and the whole within an equation.</p>
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<p>Year 1</p> <p>Number Bonds to 10</p>	<p>$6 - 2 = \square$</p> 	<p>Pupils develop automatic recall of number bonds to 10. This can be shown using a ten frame, a number bond diagram and written as an equation. This understanding can be related to subtracting tens, hundreds and so on when used with a sound understanding of place value.</p>
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Year	Topic/Strand	Representation	Key Idea
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Year 1

Using a Number Track

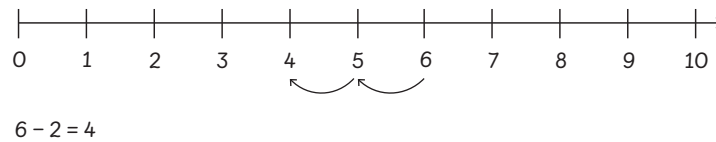


Pupils are first introduced to a linear number system through the number track. This is a precursor to the number line.

Pupils may benefit from placing items on the number track as they count and subtract before moving on to use the more abstract number line.

Year 1

Counting Back Using a Number Line

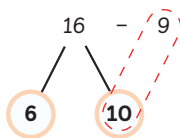


Pupils move from a number track to a number line, starting from zero and having marked increments of 1.

The use of the number line is further developed when counting back starts from a given number, relying on pupils' ability to locate and count back from a given number.

Year 1

Subtracting from 10



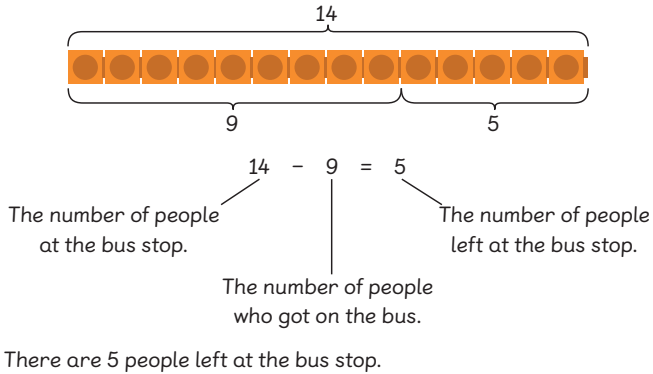
$10 - 9 = 1$
 $1 + 6 = 7$
 $16 - 9 = 7$
 There are 7 logs left.

Pupils use their part-whole understanding to rename a number into its component parts in order to subtract from 10 within an equation.

Year	Topic/Strand	Representation	Key Idea
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Year 1

**Subtraction
Word
Problems**



Pupils develop an understanding of situations and problems that require subtraction.

Subtraction Calculation Policy

Year 2



Year	Topic/Strand	Representation	Key Idea
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Year 2	Part-Part-Whole	<p> $37 - 5 = 32$ $7 - 5 = 2$ $30 + 2 = 32$ </p>	<p>This is a mathematical structure that underpins subtraction situations. Numbers can be understood in terms of their parts; understanding that the parts are part of a larger collection.</p> <p>Pupils develop an understanding of the parts and the whole within an equation.</p>
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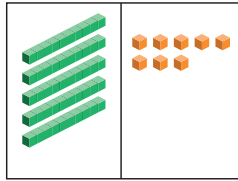
Year 2	Counting Back Using a Number Line	<p>$37 - 5 =$ </p> <p>Start counting back from 37.</p> <p>$37 - 5 = 32$</p>	<p>The use of the number line is further developed when counting back starts from a given number, relying on pupils' ability to locate and count back from a given number, including starting from a 2-digit number.</p> <p>Initially a 1-digit number is subtracted from a 2-digit number, then this progresses to a number line shown with intervals of 10 when subtracting 2-digit numbers that do not have any ones.</p>
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Year 2	Base 10 Blocks	<p>Use to help you.</p> <p>5 ones - 1 one = 4 ones $5 - 1 = 4$</p> <p>5 tens - 1 ten = 4 tens $50 - 10 = 40$</p> <p>5 tens = 50</p>	<p>The use of base 10 blocks provides a representation of the place value primarily of 2-digit numbers. This representation is related to the formal written method but also encourages pupils to use their understanding of subtracting the same noun to subtract 2-digit numbers. For example, $50 - 30$ can be understood as 5 tens - 3 tens. The difference between the numbers is 20 or 2 tens.</p> <p>An understanding of place value will support subtraction as well as addition, multiplication and division.</p>
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Year	Topic/Strand	Representation	Key Idea
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Year 2

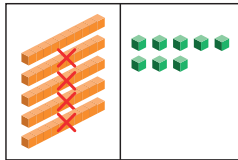
**Formal
Written
Method**



$$8 \text{ ones} - 0 \text{ ones} = 8 \text{ ones}$$

$$8 - 0 = 8$$

	tens	ones
	5	8
-	4	0
<hr/>		8



$$5 \text{ tens} - 4 \text{ tens} = 1 \text{ ten}$$

$$50 - 40 = 10$$

$$58 - 40 = 18$$

	tens	ones
	5	8
-	4	0
<hr/>		8
	1	

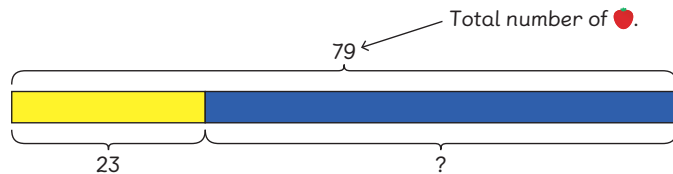
This is a procedural method that relies on a pupil's conceptual understanding of subtraction.

Initially, this begins without renaming and progresses to the renaming of 1 ten into 10 ones. Pupils understand that at this stage, they start with the subtraction of the ones before they subtract the tens. This method is supported with base 10 block representation.

The formal written method is always accompanied by a written equation to ensure that the relationship between the representations are made.

Year 2

**Subtraction
Word
Problems**



Number of strawberries Hannah and Sam ate.

$79 - 23 = 56$
There are 56 strawberries left.

Subtract 23 from 79.



Pupils develop an understanding of situations and problems that require subtraction.

Subtraction Calculation Policy

Year 3



Year	Topic/Strand	Representation	Key Idea
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Year 3	Part-Part-Whole		<p>This is a mathematical structure that underpins subtraction situations. Numbers can be understood in terms of their parts; understanding that the parts are part of a larger collection.</p> <p>Pupils develop an understanding of the parts and the whole within an equation.</p>
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Year 3	Counting Back Using a Number Line	<p>$796 - 600 = 196$</p>	<p>The use of the number line is further developed when counting back starts from a given number, relying on pupils' ability to locate and count back from a given number, including starting from a 3-digit number.</p> <p>Initially a 1-digit number is subtracted from a 3-digit number, then this progresses to a number line shown with intervals of 1, then 10 and then progressing to 100.</p>
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Year 3	Base 10 Blocks	<p>$796 - 600 = 196$</p> <p>There were 196 people left at the airport.</p> <p>Equations: $700 - 600 = 100$, $96 + 100 = 196$</p>	<p>The use of base 10 blocks provides a representation of the place value of 3-digit numbers. This representation is related to the formal written method but also encourages pupils to use their understanding of subtracting the same noun to subtract from 3-digit numbers. For example, 700 – 400 can be understood as 7 hundreds – 4 hundreds. The difference between these numbers is 300 or 3 hundreds. Progression is made by subtracting ones, then tens and finally hundreds before the subtraction of all 3 places is undertaken. An understanding of place value will support subtraction as well as addition, multiplication and division.</p>
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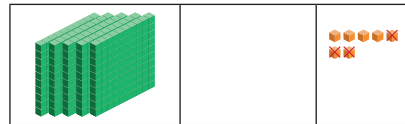
Year	Topic/Strand	Representation	Key Idea
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Year 3

Formal Written Method

$507 - 143 =$

Step 1 Subtract the ones.



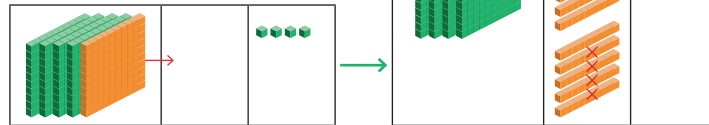
$7 \text{ ones} - 3 \text{ ones} = 4 \text{ ones}$

507

400 100 7

h	t	o
5	0	7
- 1	4	3
		4

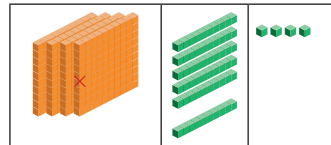
Step 2 Rename 1 hundred as 10 tens. Subtract the tens.



$10 \text{ tens} - 4 \text{ tens} = 6 \text{ tens}$

h	t	o
5 ⁴	0 ¹⁰	7
- 1	4	3
		4
		6

Step 3 Subtract the hundreds.



$4 \text{ hundreds} - 1 \text{ hundred} = 3 \text{ hundreds}$

$507 - 143 = 364$

h	t	o
5 ⁴	0 ¹⁰	7
- 1	4	3
		4
3	6	4

This procedural method progresses from the renaming of 10 ones into 1 ten to include the renaming of 10 tens to 1 hundred when necessary. The procedure itself remains unchanged from Year 2.

Pupils understand that at this stage, they start with the subtraction of the ones, then the tens, then finally the hundreds.

This method is supported with base 10 block representation. The formal written method is always accompanied by a written equation to ensure that the relationship between the representations are made.

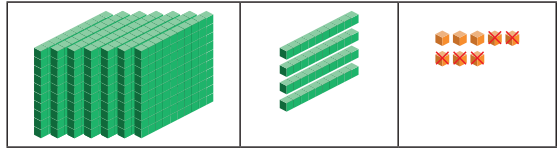
Year	Topic/Strand	Representation	Key Idea
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Year 3

Inverse Operation

$$748 - 425 = \square$$

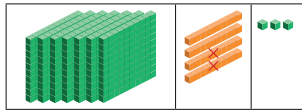
Step 1 Subtract the ones.
8 ones - 5 ones = 3 ones



	h	t	o
	7	4	8
-	4	2	5
			3

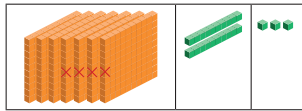
Pupils should understand that subtraction is the inverse operation of addition. They are encouraged to check completed subtraction calculations using addition.

Step 2 Subtract the tens.
4 tens - 2 tens = 2 tens



	h	t	o
	7	4	8
-	4	2	5
		2	3

Step 3 Subtract the hundreds.
7 hundreds - 4 hundreds = 3 hundreds



	h	t	o
	7	4	8
-	4	2	5
	3	2	3

Year 3

Difference Using a Bar Model

748 - 425 = 323
323 tomatoes are left.



Pupils are required to find the difference in a comparison problem when represented by a bar model. To find the difference, the known part is subtracted from the quantity it is being compared to. The comparison model reinforces the understanding of difference in subtraction.

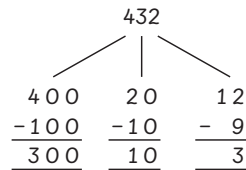
Subtraction Calculation Policy

Year 4

Year	Topic/Strand	Representation	Key Idea
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Year 4

Part-Part-Whole



This is a mathematical structure that underpins subtraction situations. Numbers can be understood in terms of their parts; understanding that the parts are part of a larger collection.

Pupils develop an understanding of the parts and the whole within an equation.

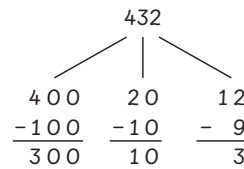
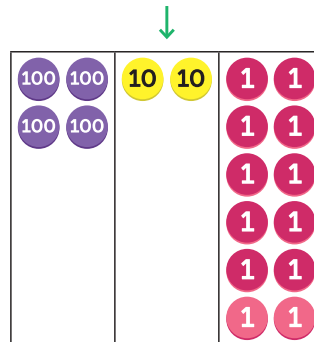
Year 4

Place-Value Counters

What is the difference between 432 and 119?



There are not enough ones.
Rename 1 ten as 10 ones.



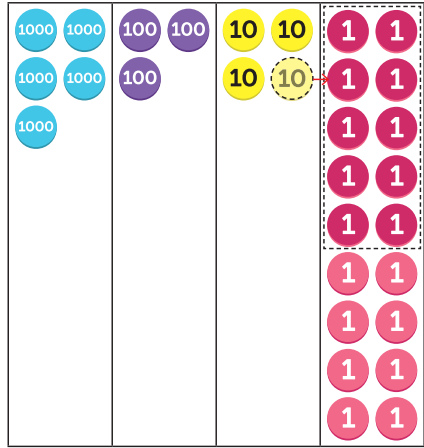
Place-value counters are used to represent subtraction situations. This transition from base 10 blocks relies on pupils understanding the value of each counter without being able to count its physical attributes.

Pupils will have the opportunity to rename 1 counter to 10 counters with a value 10 times smaller in order to carry out a formal written method. The idea of decomposing at a rate of 10 should be well understood at this stage.

Year	Topic/Strand	Representation	Key Idea
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Year 4

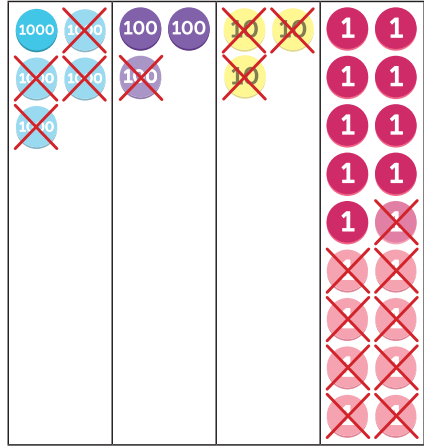
Formal Written Method



Rename 1 ten to 10 ones.



$$\begin{array}{r}
 53\overset{3}{\cancel{4}}\overset{18}{\cancel{9}} \\
 - 4139 \\
 \hline
 \hline
 \end{array}$$



Now there are enough ones to subtract.



$$\begin{array}{r}
 53\overset{3}{\cancel{4}}\overset{18}{\cancel{9}} \\
 - 4139 \\
 \hline
 1209
 \end{array}$$

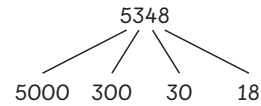
Pupils will use the formal written method initially without renaming, and then move to subtraction that requires renaming.

The procedure remains the same as learned in Year 3 but the numbers increase to include 4-digit numbers being subtracted from 4-digit numbers.

Year	Topic/Strand	Representation	Key Idea
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Year 4

Using Addition to Check Subtraction



$$\begin{array}{r}
 5348 \\
 - 4139 \\
 \hline
 1209
 \end{array}$$

- Step 1 Subtract the ones.
18 ones - 9 ones = 9 ones
 - Step 2 Subtract the tens.
3 tens - 3 tens = 0 tens
 - Step 3 Subtract the hundreds.
3 hundreds - 1 hundred = 2 hundreds
 - Step 4 Subtract the thousands.
5 thousands - 4 thousands = 1 thousand
- 5348 - 4139 = 1209

Check.

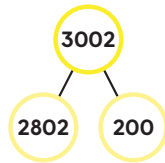
$$\begin{array}{r}
 1209 \\
 + 4139 \\
 \hline
 5348
 \end{array}$$

Pupils are encouraged to check subtraction calculations by adding the parts (the subtrahend and the difference) to ensure the sum is equal to the whole (the minuend).

Year 4

Mental Methods

$$3002 - 198 = 2804$$



$$3002 - 198 = 2802 + 2$$

$200 - 198 = 2$

Mental subtraction methods include partitioning the minuend to simplify the subtraction calculation. The approach shown is supported by an understanding of number bonds to 10 and to 100.

Year	Topic/Strand	Representation	Key Idea
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Year 4

Subtracting Fractions

$$\begin{array}{l}
 3 - \frac{7}{10} = 2 \frac{10}{10} - \frac{7}{10} \\
 \begin{array}{l} 2 \\ 1 \end{array} \quad \begin{array}{l} 10 \\ 3 \end{array} \\
 = 2 \frac{3}{10}
 \end{array}$$

$1 = \frac{10}{10}$

Pupils use their understanding of subtracting the same nouns when subtracting fractions with the same denominator.

The subtraction of fractions or finding the difference between fractions is supported through pictorial representation.

Pupils use their understanding of equivalence to ensure denominators are the same before carrying out the subtractions.

Subtraction Calculation Policy

Year 5

Year	Topic/Strand	Representation	Key Idea
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Subtract 3000 from 650 452.
Start at 650 452. Count back in 1000s.

650452

650452

647452

$650\,452 - 3000 =$

Year 5

Counting Back Using Place-Value Counters

Pupils use place-value counters to support counting back in thousands to find the difference.

Count back 30 000 from 153 672.

$153\,672 - 30\,000 =$

Year 5

Counting Back Using Number Lines

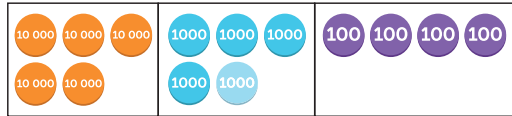
Pupils count back in thousands and ten thousands, using a number line to show this counting back method.

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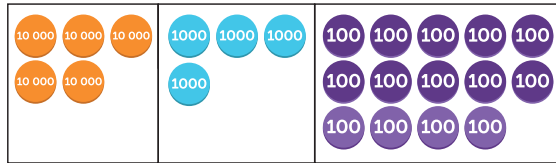
Year 5

Formal
Written
Method

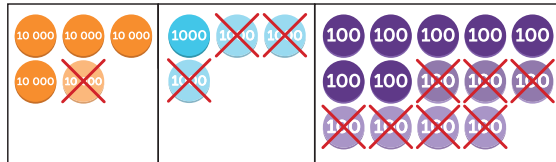
$$55\,400 - 13\,700 = \boxed{}$$



Rename 1 thousand as 10 hundreds.



Subtract 7 hundreds from 14 hundreds.



$$\begin{array}{r} ^4 ^{14} \\ 5 \cancel{5} \cancel{4} 0 0 \\ - 1 3 7 0 0 \\ \hline 7 0 0 \end{array}$$

Subtract the thousands.

$$\begin{array}{r} ^4 ^{14} \\ 5 \cancel{5} \cancel{4} 0 0 \\ - 1 3 7 0 0 \\ \hline 1 7 0 0 \end{array}$$

Subtract the ten thousands.

$$\begin{array}{r} ^4 ^{14} \\ 5 \cancel{5} \cancel{4} 0 0 \\ - 1 3 7 0 0 \\ \hline 4 1 7 0 0 \end{array}$$



Place-value counters are used to represent the formal written method. The procedure to subtract using numbers up to 6-digits using the formal written method remains the same as when it was first introduced.




Pupils begin at the least value place and work to the left through the places to find the difference.

Renaming takes place when a calculation in a place cannot be done. Again, this procedure is the same as when this was first learned and requires the renaming of the minuend.

The renaming of the minuend is also represented using a number bond, providing the foundation for mental methods that require renaming.

Year	Topic/Strand	Representation	Key Idea
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Year 5	Checking by Using Estimation and Addition	$75\,241 - 34\,658 = 40\,583$ $\begin{array}{r} 4\,0\,5\,8\,3 \\ + 3\,4\,6\,5\,8 \\ \hline 7\,5\,2\,4\,1 \end{array}$	 	<p>Pupils are encouraged to check the reasonableness of their answers by initially finding an estimated difference.</p> <p>When using estimation to check, pupils initially round to the nearest thousand before calculation.</p> <p>When using addition to check the difference, pupils add the difference and the subtrahend to check it is equal to the minuend.</p>
		$75\,241 - 34\,658 \approx 75\,000 - 35\,000 = 40\,000$		

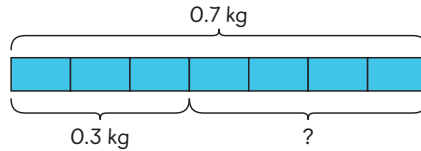
Year 5	Subtracting Fractions	 $1 - \frac{1}{6} = \frac{6}{6} - \frac{1}{6} = \frac{5}{6}$		<p>Pupils use their understanding of subtracting the same nouns when subtracting fractions with the same denominator. The subtraction of fractions or finding the difference between fractions is supported through pictorial representation. Pupils use their understanding of equivalence to ensure denominators are the same before carrying out the subtractions.</p>
		 $\frac{5}{6} - \frac{5}{12} = \frac{10}{12} - \frac{5}{12} = \frac{5}{12}$		

Year	Topic/Strand	Representation	Key Idea
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Year 5

Subtracting Decimals

Find the difference between 0.7 kg and 0.3 kg.



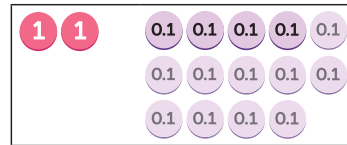
$$0.7 - 0.3 = 0.4$$

Pupils use their understanding of subtracting the same nouns when subtracting tenths. Tenths are represented using bar models, written words and equations.

Year 5

Subtracting Decimals Using the Formal Written Method

Find the difference between £3.40 and £2.50.



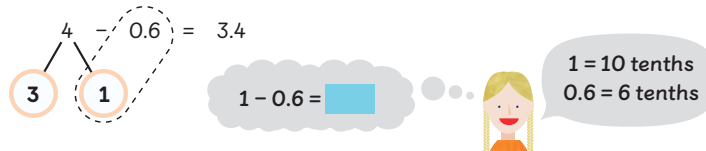
$$\begin{array}{r} \overset{2}{\cancel{£3}}.\overset{14}{\cancel{40}} \\ - \underset{}{£2}.\underset{}{50} \\ \hline \end{array}$$

$$\begin{array}{r} \overset{2}{\cancel{£3}}.\overset{14}{\cancel{40}} \\ - \underset{}{£2}.\underset{}{50} \\ \hline \underset{}{£0}.\underset{}{90} \end{array}$$

The same procedure for subtracting decimals using a formal written method is the same as when subtracting whole numbers but attention needs to be given to the decimal point. The decimal point does not represent a place but separates the whole from the fractional part of a number. Careful alignment is needed when subtracting decimal numbers using a formal written method.

Year 5

Subtracting Decimals Using Equivalence



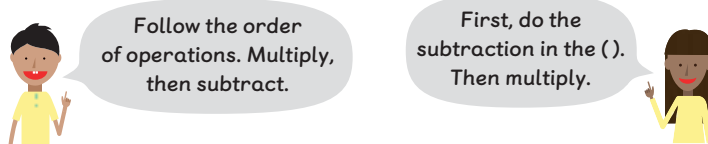
Pupils use their understanding of equivalence to subtract a decimal from a whole number. For example, when calculating $4 - 0.6$ we can rename 4 as 40 tenths, so the calculation becomes 40 tenths - 6 tenths. Once the nouns are the same, the subtraction can be carried out. 40 tenths - 6 tenths = 34 tenths = 3.4

Subtraction Calculation Policy

Year 6

Year	Topic/Strand	Representation	Key Idea
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Year 6	Subtraction within Order of Operations	<p>First, carry out all the operations in (). Next, perform all the multiplication and division. Then, calculate all the addition and subtraction.</p> $15 - 4 \times 3 = 15 - 12 = 3$ $(15 - 4) \times 3 = 11 \times 3 = 33$	Pupils utilise the previous subtraction skills within mixed operation equations. Subtraction is carried out after multiplication and division. If only addition and subtraction are present in an equation, pupils work from left to right.
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Year 6	Bar Models		Pupils are expected to utilise previously learned subtraction skills within increasingly complex situations. The procedure of subtraction is often at a level previously learned in isolation but the skill being developed is identifying when to use subtraction within a problem.
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