



Hanley St. Luke's CE Aided Primary School

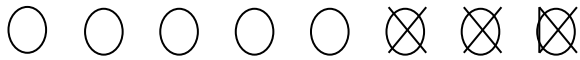
SSIP - Calculating Strand Policy: SUBTRACTION (V6)

FS	Calculating strand: SUBTRACTION	Y1 MUST
SHOULD End of year expectations	Begin to relate subtraction to 'taking away' (FS) <i>Pupil learning outcomes: (will change depending on strategy: see below) e.g. I can use objects to help me to take away</i> In practical activities and discussion begin to use the vocabulary involved in subtracting (FS) <i>Pupil learning outcomes: e.g. I can talk about taking away.</i>	
	Practical Methods	Vocabulary

Solve simple subtraction problems. Use pictorial representation, bead strings, number tracks and fully marked & fully numbered number lines to support calculations. See examples of strategies below; (this is not an exhaustive list.) Model number sentences using the signs + - =.

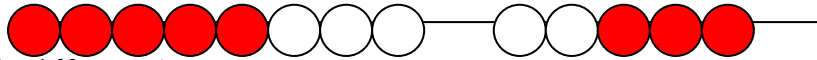
Drawing objects and crossing out, counting back

There were 8 cakes on a plate. Mary ate 3 of them. How many were left? $8 - 3 = 5$



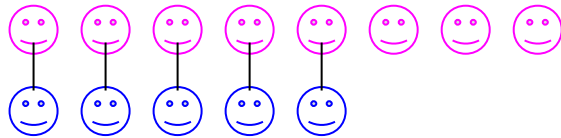
Use a bead strings or bead bars to model subtraction including bridging through ten

There are 13 people on the climbing frame. That is too many people. Five people should get off. How many people should be on the climbing frame? $13 - 5 = 8$ (model 13 subtract 3 is 10 then 10 take away 2 makes 8)



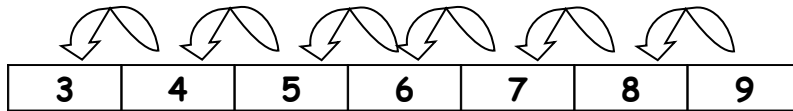
Matching and finding the difference by counting on.

There are 8 girls and 5 boys. How many more girls are there than boys? $8 - 5 = 3$



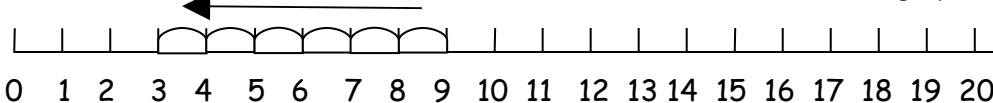
Using a number track to count back

There were 9 birds on the fence. Later, there were 3 birds on the fence. How many birds had gone? $9 - 6 = 3$



Using a fully marked and fully numbered number line to count back

What is the difference between the number of white rabbits and the number of grey rabbits?



Add, more, and, make, sum, total, altogether, score, double, one more, two more, ten more... how many more to make... ? how many more is... than...? take (away) leave, how many are left/left over? how many have gone? one less, two less... ten less... how many fewer is... than...? difference between, is the same as

Test Questions

There are four cups on the table. Put two more cups on the table. How many cups altogether are on the table now?

Find all the dominoes that have a total of six spots.

There are nine biscuits on this plate. Take three of the biscuits to eat. How many biscuits are left on the plate?

Count 5 small toys into this cloth bag. How many objects in the bag? Now count 2 more small toys into the bag. How many small toys in the bag now?

[Count 5 pennies into a purse and shut it. Show 2 more pennies in your hand.] How many pennies are there altogether?

Show me 5 fingers on one hand. Show me 2 fingers on the other hand. How many fingers altogether?

We have four easels. There are seven children who want to paint. How many more easels do we need?

I have hidden two cubes in this box. There are three cubes on the table. How many cubes are there altogether?

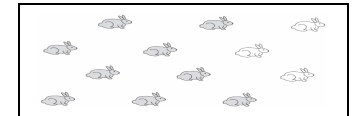
Hop three spaces on this number track. Now hop two more. Where are you now?

There are six toys in a box. I take away three of the toys. How many toys are left in the box?

Start with two. Hold it in your head. Count on to five.

How many grey rabbits are there? How many white rabbits are there? How many rabbits are there altogether?

I have two toys in a box. I add four more toys to the box. How many toys are there in the box now?



John has four books. Lisa has one book. How many more books has John than Lisa?

What is the difference between the number of grey rabbits and the number of white rabbits?

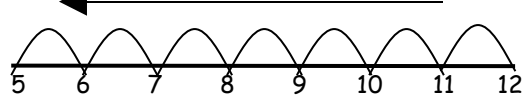
Here are five toy cars. How many more cars are needed to make a set of eight cars?

Year 1	Calculating strand: SUBTRACTION	FS COULD / Y2 MUST
<p>SHOULD End of year expectations in bold</p>	<p>Understand subtraction as 'take away' and find a 'difference' by counting up; use practical and informal written methods to support the subtraction of a one-digit number from a one- or two-digit number and a multiple of 10 from a two-digit number (Y1) <i>Pupil learning outcomes (changes depending on unit) e.g.: I can use objects to take away a small number from any number up to 20</i> Use the vocabulary related to subtraction and symbols to describe and record subtraction number sentences (Y1) <i>Pupil learning outcomes (changes depending on unit) e.g.: I can talk about subtracting, I can record subtractions</i></p>	

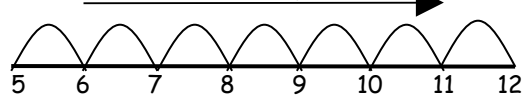
Written Methods

Use a marked, partially marked or empty number line to **count back** (take away) or to **count on** (find the difference) and record number sentences.

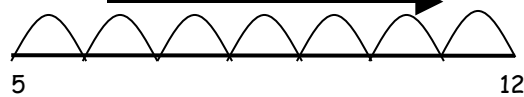
12 - 7 (counting back) - marked line - when multiple of 10 - counting back the answer is the number 'landed' on (5)



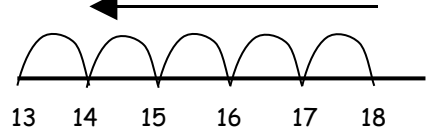
What is the difference between 5 and 12? (counting up) - marked line - when counting on, the answer is the number of 'jumps' (7)



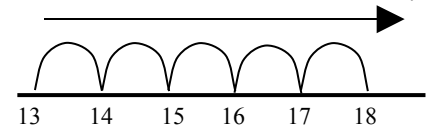
What is the difference between 5 and 12? (counting up) - empty line



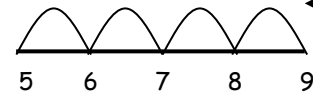
Children need to begin to understand when it is sensible to count back e.g. 18 - 5



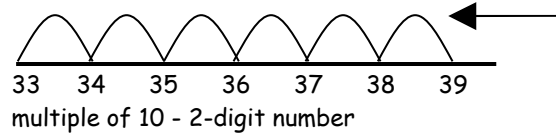
And when it is sensible to count up e.g. 18 - 13



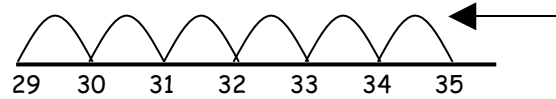
1-digit number - 1-digit number e.g. $9 - 4 = 5$



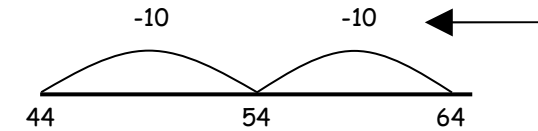
2-digit number - 1-digit number e.g. $39 - 6 = 33$
not crossing tens boundary



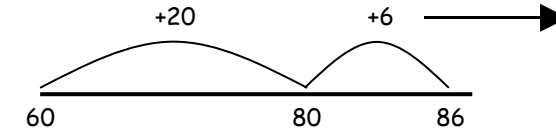
2-digit number - 1-digit number e.g. $35 - 6 = 29$
extend to crossing tens boundary



2-digit number - multiple of 10 e.g. $64 - 20 = 44$



2 digit number - multiple of 10 e.g. $86 - 60 = 26$



Be able to complete number sentences where a missing number is shown by a symbol eg.

$$\begin{array}{lll} 6 - 2 = \Delta & \Delta = 6 - 2 & 6 - \Delta = 4 \\ 4 = \Delta - 2 & \Delta - 2 = 4 & 4 = \Delta - \Delta \end{array}$$

Assessment for learning (AFL)

For AFL questions, see primary framework planning tools

www.standards.dfes.gov.uk/primaryframeworksmathematics/planning/Year1/counting/Unit1/

Vocabulary

problem, solution, calculate, calculation, number sentence, answer, method, explain, money, coin, pence, penny, pound, pay, change, buy, sell, price, spend how many more to make...? how many more is... than...? **how much more is...?** -, **subtract**, take (away), **minus**, leave, how many are left/left over? how many are gone? one less, two less, ten less... how many fewer is... than...? **how much less is...?** difference between **half**, **halve** =, **equals**, **sign**, is the same as

Test Questions

	<p>I'm giving each of you two number cards [from 0 to 5]. What is the difference between your two numbers? KS1 1999 level 1 [oral, adapted]</p> <hr/> <p>15 ducks are on the pond. 11 of them go away. How many are left? KS1 1999 level 2c</p> <p>-----</p> <p>What is the difference between twelve and sixteen? KS1 1998 level 2b [oral]</p> <p>-----</p> <p>What is left if five is subtracted from twelve? Y4 optional test Mental test level 2</p> <hr/> <p>Work out the difference between 80 and 20. KS1 2000 level 2a [adapted]</p> <hr/> <p>Find the answer. $72 - 8 =$ KS1 1999 level 2c</p> <hr/> <p>Write the answer. $65 - 40 =$ KS1 1998 level 2c [adapted]</p> <hr/>	<p>Look at the numbers. 15 7 16 8 Use two of these numbers to make this correct. $\square - \square = 7$</p> <p>KS1 2004 level 2c</p> <hr/> <p>Write a number in the box to make this correct.</p> <p style="text-align: center;">$16 - \square = 10$</p> <p>KS1 2000 level 2c</p> <hr/> <p>Write the answer.</p> <p style="text-align: center;">$25 - 12 =$</p> <p>KS1 2005 level 2c</p> <hr/> <p>Match each subtraction to its answer.</p> <table style="width: 100%; border: none;"> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">$16 - 6$</td> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">8</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">$15 - 10$</td> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">9</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">$19 - 11$</td> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">13</td> </tr> <tr> <td style="border: 1px solid black; border-radius: 50%; padding: 2px;">$18 - 9$</td> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">10</td> </tr> <tr> <td></td> <td style="border: 1px solid black; width: 30px; height: 20px; text-align: center;">5</td> </tr> </table> <p>KS1 1999 level 2c</p>	$16 - 6$	8	$15 - 10$	9	$19 - 11$	13	$18 - 9$	10		5
$16 - 6$	8											
$15 - 10$	9											
$19 - 11$	13											
$18 - 9$	10											
	5											

Year 2	Calculating strand: SUBTRACTION	Y1 COULD / Y3 MUST
<p>SHOULD End of year expectations in bold</p>	<p>Subtract mentally a single-digit number or a multiple of 10 to or from any two-digit number; use practical and informal written methods to subtract two-digit numbers (Y2)</p> <p><i>Pupil learning outcomes (changes depending on unit) e.g.: I can add and subtract two-digit numbers using practical equipment or written notes</i></p> <p>Use the symbols - and = to record and interpret number sentences; calculate the value of an unknown in a number sentence, e.g. $30 - \square = 24$ (Y2)</p> <p><i>Pupil learning outcomes (changes depending on unit) e.g.: I know how to write number sentences using the symbols - and =. e.g. I can work out the missing number in a number sentence such as $14 + \square = 35$</i></p>	

Written Methods

Explain mental methods and reasoning orally e.g.

85 - 7 'I subtracted 5 from 85 to get 80, then I took away 2 and I got 78.'

45 - 9 'I subtracted 10 from 45 which was 35 - that was too much so then added 1 to get 36'

63 - 20 'I counted back in tens - 63 take away 10 is 53 - take away another 10 is 43.'

84 - 60 'I counted up from 60 to 84. 60 and 20 is 80 and 4 more is 84.'

Recognise the use of symbols such as Δ or \diamond to stand for unknown numbers or signs and complete number sentences.

$$13 - \Delta = 9 \quad \Delta - 4 = 9 \quad \Delta - \diamond = 9$$

$$\text{Extend to: } 13 + 5 = \Delta - 10, \quad 24 \square 2 \square 22$$

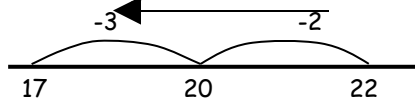
Use marked, partially marked or empty number lines to **count back** (take away) or to **count up** (find the difference) and record number sentences - see Y1 but use appropriate numbers.

Understand when it is sensible (more efficient) to count back and when to count up e.g.

$$93 - 5 \text{ (count back)}$$

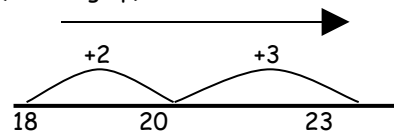
$$93 - 88 \text{ (count up)}$$

Use empty number lines to bridge through a multiple of 10 e.g. $22 - 5 = 17$ (counting back) prior learning - see Y1

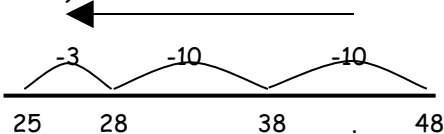


2-digit number - 2-digit number

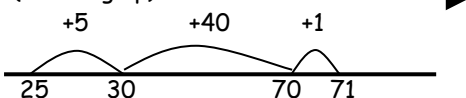
Bridge through a multiple of 10 e.g. $23 - 18 = 5$ (counting up)



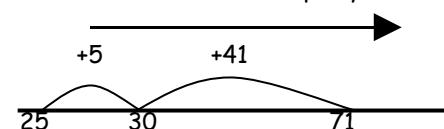
Using appropriate number lines and appropriate strategy $48 - 23$ (this example shows counting back)



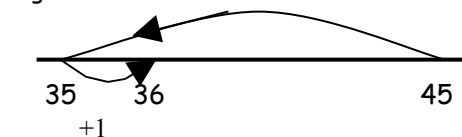
Develop into crossing 10s e.g. $71 - 25$ (counting up)



Reduce the number of steps by combining steps



Subtract near multiples of 10 by compensating e.g. $45 - 9$



Assessment for learning (AFL)

See primary framework planning tools - AFL questions within the relevant units

www.standards.dfes.gov.uk/primaryframeworksmathematics/planning/Year2/counting/Unit3/

Vocabulary

calculate, calculation, inverse, answer, explain, method, sign, operation, symbol, number sentence, number line, mental calculation, written calculation, informal method, jottings, diagrams, pictures, images

how many more to make...? how many more is... than...?

how much more is...? -, subtract, take away minus leave

how many are left/left over? one less, two less... ten less... **one hundred less**, how many less is... than...?

how much fewer is...? difference between, half, halve

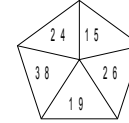
=, equals, sign, is the same as, **tens boundary**

Test Questions

Find the answer. $72 - 8 =$
KS1 1999 level 2c

Write the answer. $30 - 15 =$
KS1 2003 level 2b

Tick (✓) the two numbers which total 50.
KS1 2002 level 2a



Write the answer $79 - 34 =$
KS1 1996 level 2a

Write the answer. $82 - 45 =$
KS1 2004 level 3

Write the answer. $63 - 37 =$
KS1 2002 level 3

Work out the difference between 46 and 18.
KS1 2000 level 3

What is twenty-seven subtract nine?
Y3 optional test 2003 Mental test level 3

Write numbers in the boxes to make this correct. $13 + \square + \square = 23$
KS1 2005 level 2c

Look at these signs. + × - =
Use one of the signs to make this correct.
 $9 \square 2 = 11$

Now use the signs to make this one correct.
 $14 \square 2 \square 12$
KS1 1997 level 2c

Write the number which is 11 less than 40.
KS1 2004 level 2a

SHOULD
End of year
expectations
in bold

Subtract mentally combinations of one- and two-digit numbers (Y3)

Pupil learning outcomes (changes depending on unit) e.g.: I can subtract one-digit and two-digit numbers in my head (e.g. 48-6, 60-8)

Develop and use written methods to record, support or explain subtraction of two- and three-digit numbers (Y3)

Pupil learning outcomes (changes depending on unit /written method) e.g.: I can subtract numbers using an empty number line

Written Methods

Explain mental methods and reasoning orally

45 - 9 'I subtracted 10 from 45 which was 35 -that was too much so then added 1 and got 36.'

70 - 32 'I counted back in tens -70 take away 10 is 60 - take away another 10 is 50 less another 10 is 40, then take away 2 to make 38.'

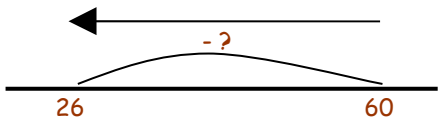
32 - 14 'I took away 10 from 32 to make 22 then I took 2 away to make 20 and another 2 to make 18.'

Recognise the use of symbols to stand for unknown numbers or signs and complete number sentences.

36 - 17 = ? ? - 15 = 19 ? - ? = 19

20 - ? - ? = 5 60 - □ = 26

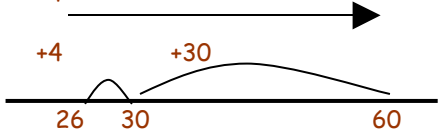
Use the number line as a model to support empty box questions e.g. 60 - □ = 26



60, take away what number (?) makes 26...

Recognise the step (?) as the **difference** ...

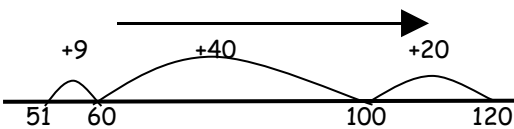
Count up from 26 to 60 to find the difference



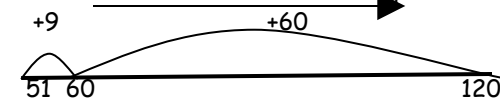
60 - 34 = 26

2-digit number - 2-digit number - see Year2

3-digit number - 2-digit number 120 - 51 = 69

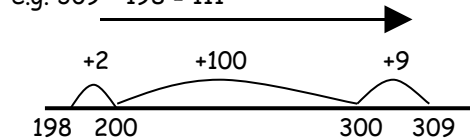


extend to a smaller number of steps

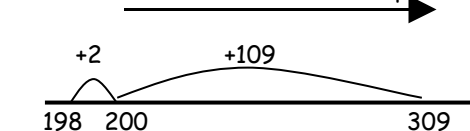


3-digit number - 3-digit number

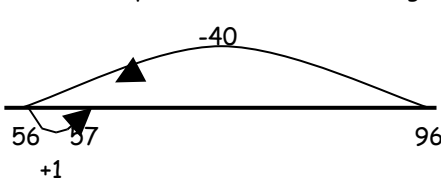
e.g. 309 - 198 = 111



Extend to a smaller number of steps



Subtract near multiples of 10 from a 2-digit number, explain the method used e.g. 96-39 =



Assessment for learning (AfL)

See primary framework planning tools - AfL questions within the relevant units
www.standards.dfes.gov.uk/primaryframeworks/mathematics/planning/Year3/counting/Unit2/

Vocabulary

problem, solution, calculate, calculation, inverse, answer, method, explain, predict, estimate, reason, operation, symbol, number sentence, equation, mental calculation, written calculation, informal method, jottings, number line, pound (£), penny/pence (p), note, coin, units of measurement and their abbreviations

how many more to make ...? how many more is... than ...?
how much more is...? -, subtract, take (away), minus, leave, how many are left/left over? one less, two less... ten less...
one hundred less, how many fewer is... than ...? how much less is...? difference between half, halve =, equals, sign, is the same as tens boundary, **hundreds boundary**

Test Questions

30	40	
		50
20	40	20

What is twenty-seven subtract nine?
Y5 optional test 2003 Mental test level 3

Subtract thirty-two from seventy.
KS2 2004 Mental test level 3

Write in the missing numbers.
60 - □ = 26

KS2 1996 Paper A level 3

Write the answer. 176 - 49 =

KS1 2003 level 3

SHOULD
End of year
expectations
in bold

Subtract mentally pairs of two-digit whole numbers, e.g. 91 - 35 (Y4)

Pupil learning outcomes (changes depending on unit) e.g.: I can add and subtract mentally any two-digit numbers you give me, such as 64 -37, 98 -89

Refine and use efficient written methods to subtract two- and three-digit whole numbers and £.p (Y4)

Pupil learning outcomes (changes depending on unit) e.g.: I can add and subtract two-digit and three-digit numbers using a written method

Written Methods

Explain mental methods and reasoning orally

41 - 17 'I subtracted 20 from 41 which was 21 and added on 3 to get 24, because I know the difference between 20 and 17 is 3. I checked my answer using the inverse operation 17 plus 24 is 41.'

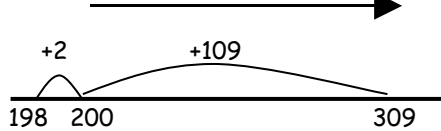
91 - 35 'I counted on from 35 to 40 which was 5. I counted up from 40 to 91 which was 51. I added 5 and 51 to make 56. I checked by adding 56 and 35 which was 91.'

Jenny thought of a number. She doubled it and then added four. The answer was eighty-eight. Which number did she think of? I took 4 from 88 to get 84 because subtracting is the inverse of adding. I then halved 84 to get 42, because halving is the inverse of doubling. I checked my answer by doubling 42 to get 84 then adding 4 to get 88.'

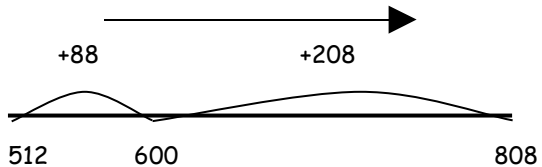
3-digit numbers - 3 digit numbers

e.g. 309 - 198 = 111

using a smaller number of steps

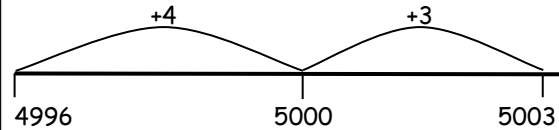


808 - 512 = 208 + 88 = 297



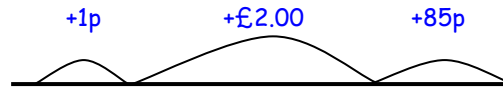
Pupils not secure with mental methods may want to use more steps when counting up e.g. 512, 520, 600, 800, 808 until they become secure.

Finding a small difference by counting up, extending to 4 digits and crossing 100s / 1000s barriers e.g. 5003 - 4996 = 7. modelled on empty no. line



Develop calculating with decimals using the empty number line in the context of money.

e.g. £5.85 - £2.99 = 1p + £2.00 + 85p = £2.86



Always ensure the unit of money is written for each step, so that +1 cannot be interpreted as +£1 when it should represent +1p.

The number line can also be used to find the difference in the context of time e.g.

Mark got into the pool at 3.30 pm. He was in the pool for 40 minutes. At what time did he get out?



KS1 1996 level 3



Again, always ensure units of time accompany each step (hr/min)

Complete similar calculations (3digit no - 3digit no.= answer) where one (or both) of the numbers is represented by an empty box. See previous years.

Assessment for learning (AfL)

See primary framework planning tools - AfL questions within the relevant units
www.standards.dfes.gov.uk/primaryframeworks/mathematics/planning/Year4/counting/Unit3

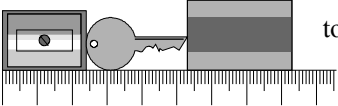
Vocabulary

calculate, calculation, equation, operation, symbol, inverse, answer, method, explain, predict, reason, reasoning, pattern, relationship, decimal, decimal point, decimal place, pound (£), penny/pence (p), units of measurement and abbreviations, degrees Celsius
how many more to make...? subtract, subtraction, take away, minus, decrease, leave, how many are left/left over? difference, between, half, halve, how many more/fewer is... than...? how much more/less is...? is the same as, equals, sign, tens boundary, hundreds boundary, inverse

Test Questions

How many less than forty-one is seventeen?

Calculate 137 - 65.

Year 6	Calculating strand: SUBTRACTION		Y5 COULD
SHOULD End of year expectations in bold	<ul style="list-style-type: none"> Calculate mentally with integers and decimals: $U.t - U.t$ (Y6) <i>Pupil learning outcomes (changes depending on unit) e.g.: I can subtract whole numbers and decimals in my head</i> Use efficient written methods to subtract integers and decimals (Y6) <i>Pupil learning outcomes (changes depending on unit) e.g.: I can subtract, whole numbers and decimals using efficient written methods</i> 		
<u>Written Methods</u>		<u>Assessment for learning (AfL)</u>	<u>Vocabulary</u>
<p><u>Explain mental methods and reasoning orally</u> 4003 - 1994, 638 - 299, 6070 - 4097 'see Y5 for explanations of mental methods for these calculations.' 2.7 - 1.9, 'I added 0.1 to 1.9 to make 2.0, then I added 0.7 to 2.0 to make 2.7. I added together 0.1 and 0.7 to find the difference which was 0.8. I checked using the inverse of subtraction, which is addition. 0.8 plus 1.9 equals 2.7.' 6 - 0.75, I know that 0.25 and 0.75 make 1 so 5.25 plus 0.75 equals 6, so the difference between 0.75 and 6 must be 5.25.' Children are required to mentally calculate multi-step problems involving subtraction: A packet of crisps costs thirty-two pence. Josh buys three packets. How much change does he get from one pound? 'Three lots of thirty are ninety and three twos are six. Ninety plus six is ninety six. The difference between ninety six pence and one pound is four pence.'</p> <p><u>Written Subtraction calculation methods</u> By Y6 pupils should be able to calculate with different numbers of integers and decimals. (see Y5) Some pupils may be confident in using <u>number lines</u> and some pupils may wish to use the <u>decomposition method</u>, or indeed, choose a method which is most appropriate to any given calculation (see Y5 guidance). It is important that pupils use a method which is EFFICIENT and RELIABLE for them, whichever method the school / pupil chooses.</p>	<p>The test questions on the right refer to the objectives above; however, pupils will also be required to solve both mental and written subtraction calculations in a range of contexts and using negative numbers. E.g. The temperature starts at four degrees and <u>goes down</u> by ten degrees. What is the temperature now? Y5 optional test 1998 Mental test level 4</p> <hr/> <p>The temperature in York is 4°C. Rome is 7 degrees <u>colder</u> than York. What is the temperature in Rome? KS2 2000 Paper A level 4 Note the use of the word 'colder' here to indicate a decrease in temperature, compared to 'goes down' in the previous question.</p> <hr/> <p>Megan makes a sequence of numbers starting with 100. She subtracts 45 each time. Write the next two numbers in the sequence. 100 55 10 <input type="checkbox"/> <input type="checkbox"/> KS2 1999 Paper A level 5 Here the subtraction extends to negative numbers for both parts of the answer. Pupils are required to subtract an integer from a positive number where the answer is negative and also to subtract an integer from a negative number, where the answer is obviously negative.</p> <hr/> <p>Circle two numbers which have a difference of 2 -1 -0.5 0 0.5 1 1.5 KS2 2001 Paper B level 4 Note the question does not ask 1 - 2 or 1.5 - 2.</p> <hr/> <p>Here are a pencil sharpener, a key and a rubber. What is the length of all three things together? Give your answer in millimetres. What is the length of the key? Give your answer in millimetres. KS2 2002 Paper A level 4</p> 	<p><u>learning (AfL)</u> See primary framework planning tools - AfL questions within the relevant units www.standards.dfes.gov.uk/primaryframeworks/mathematics/planning/Year6counting/Unit1/</p>	<p>calculate, calculation, equation, operation, symbol, inverse, answer, method, strategy, explain, predict, reason, reasoning, pattern, relationship, decimal, decimal point, decimal place, estimate, approximate, pound (£), penny/pence (p), units of measurement and abbreviations, degrees Celsius how many more to make...? subtract, subtraction, take (away) minus, decrease, leave, how many are left/left over? difference between, half, halve, how many more/ fewer is... than...? how much more/less is...? equals, sign, is the same as, tens boundary, hundreds boundary, units boundary, tenths boundary, inverse,</p>

		<u>Test Questions</u>										
		<p>Subtract one point nine from two point seven. KS2 2003 Mental test level 4</p> <hr/> <p>Subtract nought point seven five from six. KS3 2003 Mental test level 4</p> <hr/> <p>In a café I buy two cups of coffee and a sandwich. Altogether I pay three pounds. The sandwich costs one pound sixty. What is the cost of one cup of coffee? Y7 progress test 2003 Mental test level 3</p> <hr/> <p>A packet of crisps costs thirty-two pence. Josh buys three packets. How much change does he get from one pound? KS2 2005 Mental test level 4</p> <hr/> <p>A magazine costs one pound forty pence. I buy two of them and pay with a five pound note. How much change should I get? KS3 2003 Mental test level 4</p>	<p>Calculate $15.05 - 14.84$. KS2 2002 Paper A level 5</p> <hr/> <p>Calculate $8.6 - 3.75$. KS2 2000 paper A level 5</p> <hr/> <p>In the chart any three numbers in a line, across or down, have a total of 18.45. Write the missing number.</p> <div style="border: 1px solid gray; padding: 5px; width: fit-content; margin: 0 auto;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr> <td style="padding: 2px 10px;">2.46</td> <td style="padding: 2px 10px;">8.61</td> <td style="padding: 2px 10px;">7.38</td> </tr> <tr> <td style="padding: 2px 10px;">11.07</td> <td style="padding: 2px 10px; width: 30px; height: 20px;"></td> <td style="padding: 2px 10px;">1.23</td> </tr> <tr> <td style="padding: 2px 10px;">4.92</td> <td style="padding: 2px 10px;">3.69</td> <td style="padding: 2px 10px;">9.84</td> </tr> </table> </div> <p>KS2 1997 Paper A level 4</p>	2.46	8.61	7.38	11.07		1.23	4.92	3.69	9.84
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Year 6+	Calculating strand: SUBTRACTION		
COULD End of year expectations in bold	<p>Understand how the commutative, associative and distributive laws, and the relationships between operations, including inverse operations, can be used to calculate more efficiently; use the order of operations, including brackets (Y6 / Y7)</p> <p><i>Pupil learning outcomes (changes depending on unit) e.g.:</i></p> <p>Consolidate and extend mental methods of calculation to include decimals, fractions and percentages (Y6 / Y7)</p> <p><i>Pupil learning outcomes (changes depending on unit) e.g.:</i></p>		
Rules & Laws of arithmetic summary - see guidance paper 'methods of calculation' for more detail		<u>Test Questions</u>	

Rules of arithmetic	Instructions	Examples
Brackets	Always carry out first any calculations that are within brackets	$40 - (3 + 2) = 40 - 5 = 35$ $20 \div (18 - 13) = 20 \div 5 = 4$
Multiplication and division	After working out those calculations in the brackets do the multiplication and division calculations next before addition and subtraction. If the expression involves only multiplication and division calculations work from left to right or reorder moving a number with its associated operation.	$5 \times 2 - 8 \div 2 = 10 - 4 = 6$ $9 \times 8 \div 3 = 72 \div 3 = 24$ $9 \times 8 \div 3 = 9 \div 3 \times 8 = 3 \times 8 = 24$
Addition and subtraction	Finally do the addition and subtraction calculations. If the expression involves only addition and subtraction calculations work from left to right or reorder moving a number with its associated operation.	$25 + 19 - 11 - 18 = 44 - 11 - 19 = 33 - 19 = 14$ $25 + 19 - 11 - 18 = 25 - 11 + 19 - 18 = 13 + 1 = 14$
Laws of arithmetic	Description	Examples
Commutative laws for addition and multiplication	When adding two numbers the order of the numbers can be reversed. When multiplying two numbers the order of the two numbers can be reversed.	$4 + 18 = 18 + 4$ $5 \times 7 = 7 \times 5$
Associative laws for addition and multiplication	When adding three or more numbers any adjacent pair of numbers can be added first. When multiplying three or more numbers, any pair of adjacent numbers can be multiplied together first.	$3 + 6 + 4 = (3 + 6) + 4 = 3 + (6 + 4)$ $3 \times 4 \times 5 = (3 \times 4) \times 5 = 3 \times (4 \times 5)$
Distributive laws for multiplication and division over addition and subtraction	When a sum or difference is being multiplied by a number, each number in the sum or difference can be multiplied first and the products are then used to find the sum or difference. When a sum or difference is being divided by a number, each number in the sum or difference can be divided first and the dividends are then used to find the sum or difference.	$(30 + 8) \times 7 = (30 \times 7) + (8 \times 7)$ $(30 - 3) \times 9 = (30 \times 9) - (3 \times 9)$ $(20 + 8) \div 4 = (20 \div 4) + (8 \div 4)$ $(60 - 12) \div 3 = (60 \div 3) - (12 \div 3)$

Calculate ten minus four point three five.

KS2 2001 Mental test level 5

Subtract nought point seven five from six.

KS3 2003 Mental test level 4

What is half of six point three?

KS3 2001 Mental test level 5

Write the correct sign $>$, $<$ or $=$ in each of the following.

$(10 + 5) - 9$ $(10 + 9) - 5$

$3 \times (4 + 5)$ $(3 \times 4) + 5$

$(10 \times 4) \div 2$ $10 \times (4 \div 2)$

KS2

2005 Paper A level 4

Put a tick (\checkmark) in the correct box for each calculation. Use a calculator.

	less than 1 000	equal to 1 000	more than 1 000
$8.9 \times 9.9 \times 11.9$			<input checked="" type="checkbox"/>
$(786 - 387) \div 0.41$			
$95.4 + (91 \times 9.95)$			
$12.5 \times (21.1 + 58.9)$			

KS2 2000 Paper B level 5