

SUBTRACTION: Y1

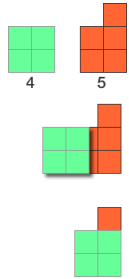
Understanding the operation and vocabulary

Understanding the operation

understand subtraction as:

'taking away' - removing part of a set & reduction

'difference' – comparison & how much more is needed



Identify one less than a given number

Read, write and interpret mathematical statements involving subtraction (-) and equals (=) signs ;

$$14 - 3 = 11 \quad 9 = 16 - 7$$

Solve missing number problems and recognise use of inverse e.g.

$$11 - \square = 8 \quad \square = 13 - 2 \quad 3 = \square - \square$$

Realise the effect of adding or subtracting 0

Establish addition and subtraction as related operations.

$$19 + 1 = 20 \text{ so } 20 - 1 = 19$$

Vocabulary

Understand the vocabulary related to subtraction.

subtraction, subtract, take away, minus, distance between, difference between, more than, minus, less than, equals = same as, most, least, pattern, odd, even, digit

Generalisations

- True or false? Subtraction makes numbers smaller
- When introduced to the equals sign, pupils should see it as signifying equality. They should become used to seeing it in different positions.

Understanding the operation and vocabulary

Number facts

Recall and use subtraction facts to 10 fluently e.g.

$$6 \text{ minus } 3 \quad 8 \text{ subtract } 2 \quad 4 \text{ less than } 9$$

Know number pairs with a total of 20 and derive related subtraction facts e.g.

$$20 + 0, 20 - 1, 20 - 2, 20 - 3 \dots$$

Memorise and reason with number bonds to 10 and 20 in several forms

$$9 + 7 = 16; \quad 16 - 7 = 9; \quad 7 = 16 - 9; \quad 9 = 16 - 7 \text{ etc.}$$

$$6 - 4 = 2 \text{ so } 16 - 4 = 12$$

Mental methods and jottings

Subtract one-digit and two-digit numbers to 20, including zero, using apparatus including number lines.

Represent and use number bonds within 20

Partition a given number of objects (up to 20) into 2 groups e.g.

Partition 15 into 7 and 8, 9 and 6

Counting back

15 - 3 (by counting back 3 in ones; 14, 13, 12)

Progress to crossing the tens boundary

With jottings

15 - 6 (by counting back in ones or partitioning 6 to bridge the tens boundary; -5, -1)

Counting up

9 - 6 (by counting up from 6 to 9 in ones; 7, 8, 9)

With jottings

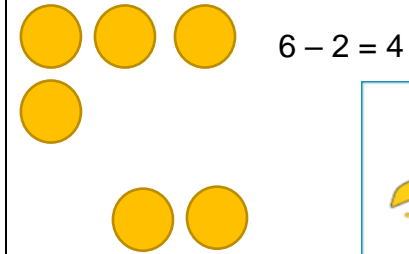
19 - 14 (by counting up from 14 to 19 in ones; 15, 16, 17, 18, 19)

Understanding the operation and vocabulary

<https://www.ncetm.org.uk/resources/50640>

CONCRETE

Use physical objects, counters, cubes etc to show how objects can be taken away.



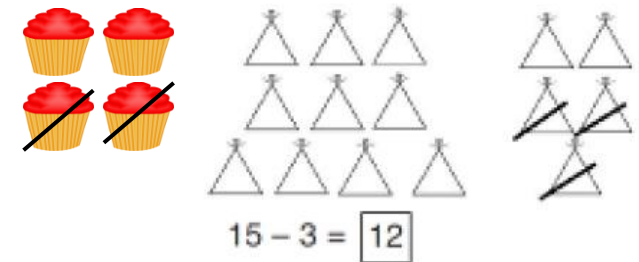
Make the larger number in your subtraction. Move the beads along your bead string as you count backwards in ones.

$$13 - 4$$



PICTORIAL

Cross out drawn objects to show what has been taken away.



Misconceptions

- Pupils struggle to interpret whether to add or subtract from the language used.
- Pupils often do not see difference as a representation of subtraction because take away is emphasised so much. They need to see subtraction represented in this way also to challenge this.
- The equals sign is not always correctly interpreted as 'has the same value as' by pupils who see it as 'the answer is'

Know doubles to at least 10 and use near doubles to add pairs of numbers

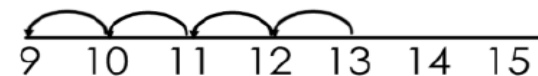
Using known facts and place value

$$6 - 4 = 2 \text{ so } 16 - 4 = 12$$

Using known doubles

Double 3 is 6 so $3 + 4$ is one more

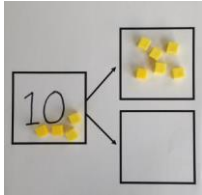
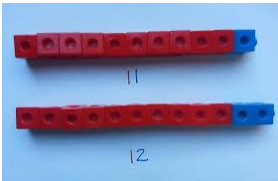
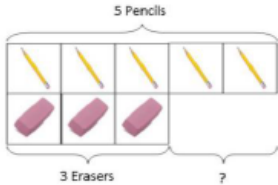
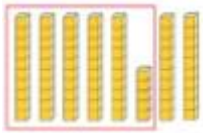

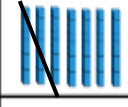

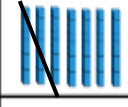

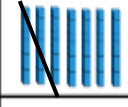

Count back on a number line or number track

**ABSTRACT**

$$8 - 2 = 6$$

(NC- read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs)

SUBTRACTION: Y2

Understanding the operation and vocabulary	Number Sense and Fluency	Recording												
<p>Understanding the operation Understand subtraction as:</p> <ul style="list-style-type: none"> taking away comparison (finding the difference) partitioning a set <p>Show that subtraction of one number from another cannot be done in any order <i>Recognise that 5 - 3 is different from 3 - 5</i></p> <p>Recognise the inverse relationship between addition and subtraction</p> <div style="display: flex; align-items: center;"> <table border="1" style="border-collapse: collapse; text-align: center; width: 60px; height: 20px;"> <tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr> <tr><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td><td style="width: 15px; height: 15px;"></td></tr> </table> Write the related number sentences </div> <p>5 + 2 = 7 2 + 5 = 7 7 = 5 + 2 7 = 2 + 5 7 - 2 = 5 7 - 5 = 2 2 = 7 - 5 5 = 7 - 2</p> <p>Solve missing number problems e.g.</p> <p>27 - □ = 17 □ = 21 - 4 10 = □ - □</p> <p>Vocabulary Understand the vocabulary related to subtraction Also see Y1</p> <p>subtraction, subtract, take away, difference, difference between, minus, tens, ones, partition, near multiple of 10, tens boundary, less than, one less, two less... ten less... one hundred less, more, one more, two more... ten more... one hundred more</p> <p>Generalisation Noticing what happens when you count back in tens (the digits in the ones column stay the same) odd - odd = even; odd - even = odd; etc Show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot</p>									<p>Number facts Recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100 e.g. 15 subtract 8 4 less than 12 80 minus 30 90 take 50</p> <p>Know complements to the next multiple of 10 e.g. 52 + □ = 60 52 + □ = 80</p> <p>Know pairs of multiples of 10 with a total of 100 and derive related subtraction facts e.g. 100 - 10, 100 - 20, 100 - 30 ...</p> <p>Mental methods and jottings Subtract numbers using concrete objects, pictorial representations, and mentally, including:</p> <ul style="list-style-type: none"> a two-digit number and ones a two-digit number and tens two two-digit numbers <p>Counting back in ones, twos and tens 57 - 20 (by counting back in tens; 47, 37)</p> <p><u>With jottings</u> 57 - 23 (by partitioning the second number and counting back; -20, -3)</p> <p>Counting up 31 - 28 (by counting up from 28 by bridging the tens boundary; +2, +1)</p> <p><u>With jottings</u> 65 - 47 (by counting up from 47 by bridging the tens boundary; +3, +10, +5)</p> <p>Adjusting 35 - 9 (by subtracting 10 and adding 1)</p>	<p style="text-align: center;">https://www.ncetm.org.uk/resources/50640</p> <p>CONCRETE</p> <p>10 - 6 =</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <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> </div> </div> <p>Compare amounts and objects to find the difference.</p> <div style="display: flex; align-items: center;">  <div style="margin-left: 10px;"> <p>Use cubes to build towers or make bars to find the difference</p> <p>Use basic bar models with items to find the difference</p> </div> </div> <div style="display: flex; align-items: center; margin-top: 10px;">  </div> <div style="display: flex; justify-content: space-around; margin-top: 10px;"> <div style="text-align: center;"> <p>75 - 20</p>  </div> <div style="text-align: center;"> <p>32 - 20</p>  </div> </div> <div style="text-align: center; margin-top: 10px;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #f4b084;"> <th style="width: 50px; height: 30px;">Tens</th> <th style="width: 50px; height: 30px;">Ones</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">  </td> <td style="text-align: center;">  </td> </tr> </tbody> </table> <p>78 - 34</p> </div>	Tens	Ones		
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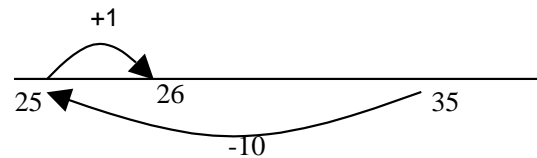
Recognise and use the inverse relationship between addition and subtraction and use this to check calculations and missing number problems. This understanding could be supported by images such as this.



$$15 + 5 = 20$$

Misconceptions

- Pupils struggle to interpret whether to add or subtract from the language used
- Pupils often do not see difference as a representation of subtraction because take away is emphasised so much. They need to see subtraction represented in this way also to challenge this.
- When subtracting, pupils will sometimes subtract the larger number from the smaller initially.
- When counting back, pupils may start counting using the start number itself rather than counting the next number.
- The equals sign is not always correctly interpreted as 'has the same value as' by pupils who may see it as 'the answer is'.
- Pupils do not use place value when adding and subtracting - signs of this can be them counting repeatedly from 0 or failing to use models that group tens differently. They may need to use a wider range of representations to develop this idea more strongly - some pupils can do this when the model 'looks' like 10 but not when the visual link has gone.
- Pupils may not always understand that addition is commutative but subtraction is not.



With jottings

$35 - 19$ (by subtracting 20 and adding 1)

Using known facts and Place Value

$57 - 4$ ($7 - 4 = 3$ so $57 - 4 = 53$)

Estimating

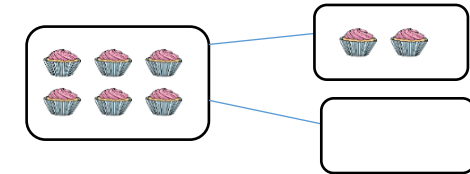
check calculations by subtracting in a different way
solve $16 - 9$ by $16 - 10 + 1$

Partitioning second number

partition numbers in different ways
 $23 = 20 + 3$ and $23 = 10 + 13$ to support subtraction
 $57 - 23$ ($-20, -3$) then cross tens boundary: $42 - 17$ ($-10, -2, -5$)

PICTORIAL

Use a pictorial representation of objects to show the part-part-whole model.



ABSTRACT

$$34 - 13 = \underline{\quad}$$

$$\begin{array}{r} 34 \\ 30 \quad 4 \end{array}$$

$$-10 \quad -3$$

$$\begin{array}{r} 20 \quad 1 \end{array}$$

$$42 - 15 =$$

$$\begin{array}{r} 42 \\ 40 \quad 2 \\ -10 \quad -5 \end{array}$$

We can't subtract the ones here so need to partition differently. This relies on secure place value knowledge.

$$\begin{array}{r} 42 \\ 30 \quad 12 \\ -10 \quad -5 \\ 20 \quad 7 \end{array}$$

Now we can subtract the ones and then the tens

SUBTRACTION: Y3

Understanding the operation and vocabulary	Number Sense and Fluency	Recording
<p>Understanding the operation Continue to develop understanding of subtraction</p> <p>Use larger numbers to at least 1,000 and practise partitioning in different ways in preparation for written subtraction methods e.g. $146 = 100 + 40 + 6$, $146 = 130 + 16$</p> <p>Understand that the principles of the commutative and associative laws do not apply to subtraction</p> <p>Recognise that $41 - 35$ is different from $35 - 41$</p> <p>Understand the inverse relationship between addition and subtraction</p> <div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; background-color: #d9ead3; padding: 5px; width: 100px; text-align: center;">67</div> </div> <div style="display: flex; justify-content: space-around; align-items: center; margin-top: 10px;"> <div style="border: 1px solid black; background-color: #fce4d6; padding: 5px; width: 40px; text-align: center;">45</div> <div style="border: 1px solid black; background-color: #d9ead3; padding: 5px; width: 40px; text-align: center;">22</div> </div> <p>Write the related number sentences $45 + 22 = 67$ $22 + 45 = 67$ $67 = 45 + 22$ $67 = 22 + 45$ $67 - 22 = 45$ $67 - 45 = 22$ $22 = 67 - 45$ $45 = 67 - 22$</p> <p>Solve missing number problems e.g.</p> <p>$62 - \square = 19$ $\square = 68 - 54$ $\square - \square = 25$ $59 + 34 = 100 - \square$ $45 < \square - 6$ $\square - \square > 54 + 9$</p> <p>Vocabulary Understand, read and spell vocabulary related to subtraction. Also see Y1 and Y2</p> <p style="text-align: center; margin-top: 20px;">$17 - 9 = 8$ minuend – subtrahend = difference</p>	<p>Number facts Continue to recall and use subtraction facts to 20 fluently, and derive and use related facts beyond 100 e.g. 16 subtract 9, 150 minus 70, the difference between 80 and 170, 30 fewer than 110</p> <p>Know pairs of two-digit numbers with a total of 100 and derive related subtraction facts e.g. $100 - 79$, $100 - 43$, $100 - 12$...</p> <p>Use knowledge of number bonds to 10 and 100 to calculate with multiples of 10 $120 - 90$ using knowledge of $12 - 9$</p> <p>Use knowledge of place value to subtract to or from a multiple of 10 $90 - 27$, $164 - 40$ (count on/ back in tens)</p> <p>Mental methods and jottings subtract numbers mentally, including:</p> <ul style="list-style-type: none"> * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds <p>Counting Back (sequencing) $164 - 40$ (by counting back in tens; 154, 144, 134, 124) $387 - 59$ (-60 +1)</p> <p>With Jottings: $375 - 47$ (by partitioning the second number and counting back; -40, -5, -2) using a number line, 100 square or jottings</p> <p>Counting up $102 - 97$ (by counting up from 97, bridging the hundreds boundary; +3, +2)</p>	<p>https://www.ncetm.org.uk/resources/50640</p> <p>Subtraction without exchanging CONCRETE</p> <div style="display: flex; align-items: center;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> <p style="font-size: small; text-align: center;">Tens Ones</p> </div> <div style="margin-left: 20px;"> <p>Use Diennes to make the larger number then physically subtract the smaller number.</p> </div> </div> <div style="display: flex; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> </div> <div style="margin-left: 20px;"> $\begin{array}{r} 90 \\ - 30 \\ \hline 60 \end{array}$ </div> </div> <p>PICTORIAL</p> <div style="display: flex; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> </div> <div style="margin-left: 20px;"> $54 - 22 =$ </div> </div> <div style="display: flex; align-items: center; margin-top: 20px;"> <div style="border: 1px solid black; padding: 5px; margin-right: 20px;"> </div> <div style="margin-left: 20px;"> $176 - 64 =$ </div> </div>

hundreds, tens, ones, estimate, partition, recombine, difference, decrease, near multiple of 10 and 100, inverse, rounding, column subtraction, exchange

Generalisations

Noticing what happens to the digits when you count in tens and hundreds.

odd – odd = even etc (see Year 2)

Inverses and related facts – develop fluency in finding related addition and subtraction facts.

Develop the knowledge that the inverse relationship can be used as a checking method.

Misconceptions

- Pupils struggle to interpret whether to add or subtract from the language used.
- When adding/subtracting 1s, 10s or 100s mentally, pupils may 'change' the digit in the wrong column.
- When subtracting, pupils may subtract the larger number from the smaller initially.
- When performing columnar subtraction, pupils may exchange from the wrong column or fail to exchange altogether (instead just finding the difference between the digits in the column, even where the second one is greater than the first).
- Pupils may also fail to correctly record the exchange and thus not reduce the tens, for example, by one so that the answer is 10 too high.
- Pupils often do not see difference as a representation of subtraction because take away is emphasised so much. They need to see subtraction represented in this way also to challenge this.
- When working with addition and subtraction facts, pupils sometime realise there is a connection e.g. $3 + 4 = 7$ but then incorrectly rearrange this to make a false second fact e.g. $4 + 7 = 3$.
- This is particularly true with subtraction facts, where pupils struggle to place the numbers in a correct order.
- Some pupils may use the incorrect operation when checking and fail to realise that they need to use

With jottings

$343 - 170$ (by counting up from 170, bridging the hundreds boundary; +30, +100, +43)

Adjusting:

$234 - 99$ (by subtracting 100 and adding 1)

With Jottings:

$387 - 59$ (by subtracting 60 and adding 1)

Using Known Facts And Place Value:

$268 - 5$

$8 - 5 = 3$ so $268 - 5 = 263$

Estimating

Estimate the answer to a calculation

$163 - 48$ is approximately 150 - 50

Use inverse operations to check answers

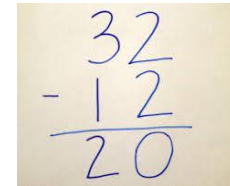
check $102 - 97 = 5$ with $97 + 5 = 102$

Use equivalent calculations to check answers

ABSTRACT

$47 - 24 =$

$$\begin{array}{r} 40 \quad 7 \\ - 20 \quad 4 \\ \hline 20 \quad 3 \end{array}$$



Subtraction with exchanging

CONCRETE

Calculations

$$\begin{array}{r} 234 \\ - 88 \\ \hline \end{array}$$

Exchange one of the 10s for ten 1s

Calculations

$$\begin{array}{r} 234 \\ - 88 \\ \hline \end{array}$$

After subtracting the ones, exchange one of the 100s for ten 10s

Calculations

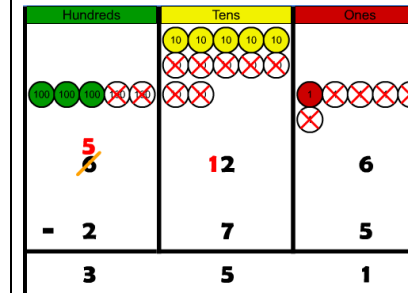
$$\begin{array}{r} 234 \\ - 88 \\ \hline \end{array}$$

Now calculation can be completed.

the inverse - this is more pronounced when subtracting.

- Pupils struggle to add and subtract from right to left in columns and hence may end up with answers that are not partitioned into hundreds, tens and ones.
- Pupils may place the smallest number at the top of the calculation when using column subtraction method.
- When numbers exchanges happen, pupils may forget to notate them and hence not include the extra/fewer tens, hundreds etc. in the new calculations.
- The equals sign is not always correctly interpreted as 'has the same value as' by pupils who may see it as 'the answer is'.

PICTORIAL



ABSTRACT

Expanded Method

H T O

$$200 \overset{30}{\cancel{40}} 17$$

$$\underline{- 100 \quad 20 \quad 9}$$

$$\underline{100 \quad 10 \quad 8} = 118$$

Compact Method

$$2 \overset{3}{\cancel{4}} 7$$

$$\underline{- 129}$$

$$\underline{118}$$

SUBTRACTION: Y4

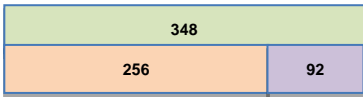
Understanding the operation and vocabulary

Understanding the operation

Continue to understand that the principles of the commutative and associative laws do not apply to subtraction

Recognise that $92 - 56$ is different from $56 - 92$

Continue to understand the inverse relationship between addition and subtraction



Write the related number sentences

$$256 + 92 = 348 \quad 92 + 256 = 348$$

$$348 = 256 + 92 \quad 348 = 92 + 256$$

$$348 - 256 = 92 \quad 348 - 92 = 256$$

$$92 = 348 - 256 \quad 256 = 348 - 92$$

Continue to solve missing number problems e.g.

$$456 - \square = 210 \quad \square = 300 - 176 \quad \square - \square = 125$$

$$589 + 318 = 1000 - \square \quad 450 < \square - 60 \quad \square - \square > 345 + 199$$

Vocabulary

Understand, read and spell vocabulary related to subtraction.

Also see Y1 Y2 and Y3

$$17 - 9 = 8$$

minuend – subtrahend = difference

subtract, subtraction, difference, less, take away, decrease, fewer, minus, count on, partition, adjust, how many more to make..? how much more? ones boundary, tens boundary, hundreds boundary, thousands boundary, tenths boundary, hundredths boundary, inverse, how many more/fewer? equals sign, is the same as.

Number Sense and Fluency

Number facts

Continue to use knowledge of subtraction facts and place value to derive related facts, including decimals and money e.g.

8000 subtract 3000, 1700 minus 800, the difference between 700 and 1400, 300 fewer than 1200

Know complements to the next multiple of 100 e.g.

$$367 + \square = 400 \quad 739 + \square = 800$$

Mental methods and jottings

Continue to practise mental methods of subtraction with increasingly large numbers.

Counting Back (Sequencing):

564 – 150 (by partitioning the second number and counting back; -100, -50)

With Jottings:

732 – 137 (by partitioning the second number and counting back; -100, -32, -5)

Counting Up:

607 – 288 (by counting up from 288, bridging the hundreds boundary; +12, +7)

With Jottings:

6070 – 4987 (by counting up from 4987, bridging the thousands boundary; +13, +1070)

Adjusting:

1487 – 199 (by subtracting 200 and adding 1)

With Jottings:

442 – 79 (by subtracting 80 (-40, -40) and adding 1)

Using Known Facts And Place Value:

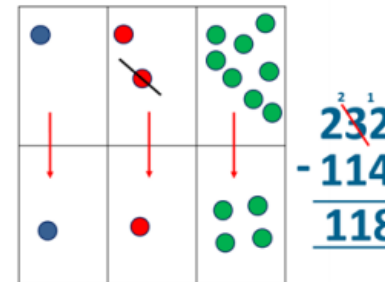
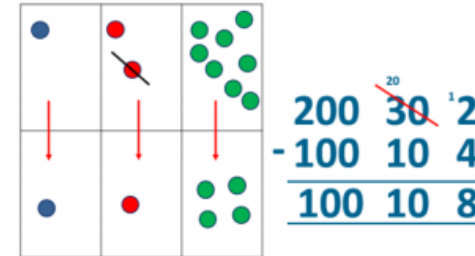
7000 - 600

1000 – 600 = 400 so 7000 – 600 = 6400

Recording

<https://www.ncetm.org.uk/resources/50640>

CONCRETE TO PICTORIAL



ABSTRACT

Th	H	T	O
3000	²⁰⁰ 300	¹ 60	7
- 1000	100	80	5
<hr/>			
2000	100	80	2 = 1182

3	²³ 3	¹⁶ 6	7
-	1	1	8
<hr/>			
1	1	8	2

Generalisations

Investigate when re-ordering works as a strategy for subtraction. eg. $20 - 3 - 10 = 20 - 10 - 3$, but $3 - 20 - 10$ would give a different answer.

Misconceptions

- Pupils struggle to interpret whether to add or subtract from the language used
- When subtracting, pupils will sometimes subtract the larger number from the smaller initially.
- When performing columnar subtraction, pupils may exchange from the wrong column or fail to exchange altogether (instead just finding the difference between the digits in the column, even where the second one is greater than the first).
- Pupils may also fail to correctly record the exchange and thus not reduce the tens, for example, by one so that the answer is 10 too high.
- Pupils find calculations where multiple exchanges must be made particularly hard e.g. $2304 - 1789$ cause issues because of the need to carry out a chain reaction of exchange. In these instances you may need to resort back to equipment to secure understanding.
- Pupils often do not see difference as a representation of subtraction because take away is emphasised so much. They need to see subtraction represented in this way also to challenge this.
- Some pupils may use the incorrect operation when checking and fail to realise that they need to use the inverse - this is more pronounced when subtracting.

Estimating:

Estimate the answer to a calculation
 $3062 - 2581$ is approximately $3000 - 2500$

Use inverse operations to check answers
check $564 - 150 = 414$ with $414 + 150 = 564$

Use equivalent calculations to check answers

Pupils will subtract decimals to 2 decimal places (in the context of money or measures)

$$£64.81 - £25.62 =$$

£10	£1	.	10p	1p	
5 6	14	.	7 8	11	
-	2	5	.	6	2
£	3	9	.	1	9

SUBTRACTION: Y5

Understanding the operation and vocabulary	Number Sense and Fluency	Recording
<p>Understanding the operation Continue to solve missing number problems $6.5 - \square = 2.3$ $\square = 3 - 0.8$ $\square - \square = 1.2$</p> <p>$5.4 + 2.7 = 10.3 - \square$ $5.2 < \square - 0.9$ $\square - \square > 7.2 - 1.9$</p> <p>Begin to use brackets $(10 - 3) \times 6 = \square$ $10 - (0.5 \times 7) = \square$</p> <p>Use inverse operations and brackets <i>I am thinking of a number. I double it and then subtract 6. My answer is 8. What was my number?</i> $\square \times 2 - 6 = 8$ so $(8 + 6) \div 2 = \square$</p> <p>Vocabulary Understand, read and spell vocabulary related to subtraction. Also see previous years</p> <p style="text-align: center;"> $17 - 9 = 8$ minuend – subtrahend = difference </p> <p>tens of thousands boundary,</p> <p>Generalisation Sometimes, always or never true? The difference between a number and its reverse will be a multiple of 9. What do you notice about the differences between consecutive square numbers?</p> <p>Misconceptions</p> <ul style="list-style-type: none"> • Pupils struggle to interpret whether to add or subtract from the language used. • Pupils can find 'How many more/less?' particularly troublesome as it relates to ordinal values of numbers and relationships. • When subtracting, pupils will sometimes subtract the larger number from the smaller initially. 	<p>Number facts Continue to use knowledge of subtraction facts and place value to derive related facts with numbers to one decimal place 1.2 subtract 0.7, 1.8 minus 0.9, the difference between 2 and 1.3, 0.3 fewer than 1.7</p> <p>Know complements to 1 $0.78 + \square = 1$ $0.52 + \square = 1$</p> <p>Recall pairs of three-digit numbers with a total of 1000 and derive related subtraction facts $1000 - 453$, $1000 - 239$, $1000 - 712$...</p> <p>Mental methods and jottings Subtract numbers mentally with increasingly large numbers</p> <p>Subtract tenths, and one-digit whole numbers and tenths</p> <p>Counting Back (sequencing): $4.7 - 1.5$ (by partitioning the second number and counting back; $-1, -0.5$)</p> <p><u>With jottings:</u> $19.2 - 2.7$ (by partitioning the second number and counting back; $-2, -0.2, -0.5$)</p> <p>Counting up: $7.2 - 6.8$ (by counting up from 6.8 by bridging the units boundary; $+0.2, +0.2$)</p> <p><u>With jottings:</u> $8.3 - 4.8$ (by counting up from 4.8 by bridging the units boundary; $+0.2, +3.3$)</p> <p>Adjusting: $8.3 - 1.9$ (by subtracting 2 and adding 0.1)</p>	<p>https://www.ncetm.org.uk/resources/50640</p> <p>Pupils may still need the support of practical apparatus or use the expanded method initially. Once confident using the compact method showing an understanding of the value of each digit, this method can be used for decimals too.</p> <p style="text-align: center;">75.4 – 8.6</p> <p style="text-align: center;"> $\begin{array}{r} 60 \quad 14 \quad 1. \\ \cancel{70} \quad \cancel{5} \quad 0.4 \\ - \quad \quad 8 \quad 0.6 \\ \hline 60 \quad 6 \quad 0.8 = 66.8 \end{array}$ </p> <p style="text-align: center;"> $\begin{array}{r} 6 \quad 14 \quad 1 \\ \cancel{7} \quad \cancel{5} \quad .4 \\ - \quad \quad 8 \quad .6 \\ \hline 6 \quad 6 \quad .8 \end{array}$ </p>

<ul style="list-style-type: none"> • When performing columnar subtraction, pupils may exchange from the wrong column or fail to exchange altogether (instead just finding the difference between the digits in the column, even where the second one is greater than the first). • Pupils may also fail to correctly record the exchange and thus not reduce the tens, for example, by one so that the answer is 10 too high. • Pupils often do not see difference as a representation of subtraction because take away is emphasised so much. They need to see subtraction represented in this way also to challenge this. 	<p><u>With jottings:</u> $12.6 - 3.9$ (by subtracting 4 and adding 0.1)</p> <p><u>Using known facts and place value:</u> $15 - 0.3$ $1 - 0.3 = 0.7$ so $15 - 0.3 = 14.7$</p> <p><u>Estimating</u> Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy $25\ 034 - 7185$ is approximately $25\ 000 - 7000$</p> <p>Continue to use appropriate strategies to check answers check $4.7 - 1.5 = 3.2$ with $3.2 + 1.5$</p>	
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<p>Misconceptions</p> <ul style="list-style-type: none">• When subtracting pupils may subtract the larger number from the smaller initially.• When performing columnar subtraction pupils may exchange the wrong column or fail to exchange altogether.• When adding and subtracting numbers of different magnitude (including decimals of different lengths), pupils often misalign these in column addition and subtraction	<p>Using Known Facts And Place Value: $1.63 - 0.8$ $16 - 8 = 8$ so $1.63 - 0.8 = 0.83$</p> <p>Estimating: Use estimation to check answers to calculations and determine, in the context of a problem, levels of accuracy. $60.31 - 17.884$ is approximately $60 - 18$</p> <p>Continue to use appropriate strategies to check answers check $6.7 - 0.55 = 6.15$ with $6.15 + 0.55$</p>	
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