Shilbottle Primary

Subtraction policy

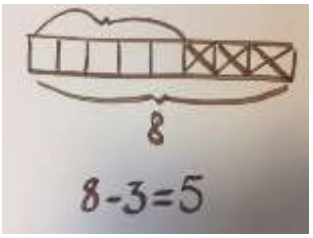
- Year group examples
- Vocabulary
- Micro steps
- Year group expectations

Subtraction Year 1

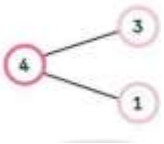
CPA Approach
(Concrete, pictorial, Abstract)

Understand subtraction as crossing out (take-away) (within 20):

7 - 2 = 5

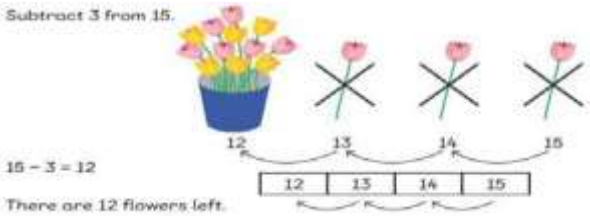


Using knowledge of number bonds to subtract (within 20):



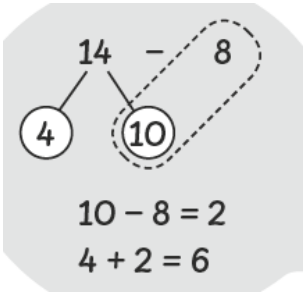
Understand subtraction as counting back (within 20):

Use concrete objects and pictorial representations. Progress from using number lines with every number shown to number lines with significant numbers shown.



Partitioning to subtract

Children should be able to separate 2 digit numbers to subtract from the tens then add the leftover ones.



Ensure doing this time you are counting backwards in steps as well as counting forwards

Missing number problems e.g.

7 = □ - 9

20 - □ = 9

15 - 9 = □

□ - □ = 11

Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards,

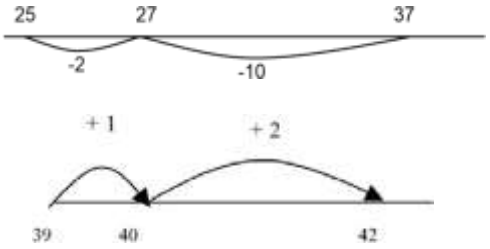
Subtraction Year 2

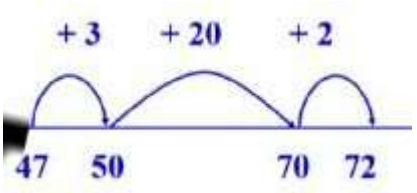
CPA Approach
(Concrete, Pictorial, Abstract)

Recall and use subtraction facts to 20 fluently

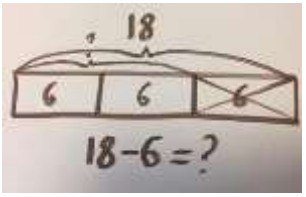
It is valuable to use a range of representations (also see Y1). Continue to use Base Ten, number lines, ten frames and objects to model take-away and difference.

The link between the two may be supported by an image like this, with 47 being taken away from 72, leaving the difference, which is 25.
Using number lines that do not need to go to 0





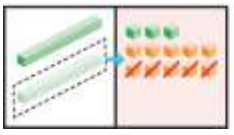
Bar Modelling by crossing out from the total



Towards written methods within 100

Record addition and subtraction in columns, the numbers may be represented with objects and pictorial representations. E.g. 23 – 5. Progress to renaming (borrowing).

Regroup 1 ten into 10 ones.
Subtract the ones.
13 ones − 5 ones = 8 ones



	tens	ones
	1 2	13 3
−		5
		8

Missing number problems, including use of inverse relationships

52 − 8 = □
□ − 20 = 25
22 = □ − 21
6 + □ + 3 = 11

Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards, inverse

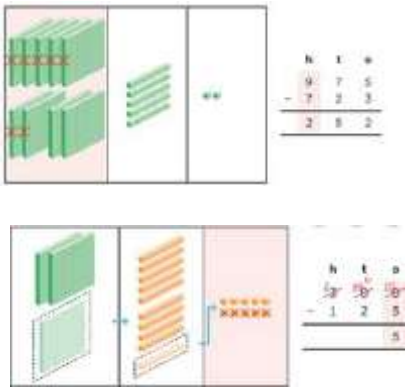
Subtraction Year 3

CPA Approach
(Concrete, pictorial, Abstract)

Mental methods

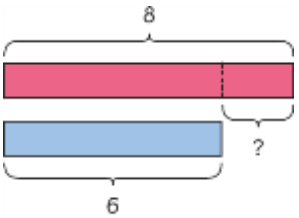
Should continue to develop, supported by a range of models and images, including the number line Children should make choices about which strategy to use, depending on the numbers involved.

This will **lead** to renaming (borrowing), modelled using place value counters or Base Ten



Bar Model

To show visualisation of subtraction problem



8 – 6 = 2

Written methods (progressing to 3-digits)

Continue to model column subtraction with no renaming (Regrouping/decomposition), modelled with objects such as place value counters, Numicon and Base ten.

3 digit - 3 digit with tens value in subtrahend being greater – exchange from hundreds (no zero place values **)**

334
- 153

Missing number problems, including use of inverse relationships e.g.

□ = 43 – 27
145 – □ = 138
274 – 30 = □
245 – □ = 195
532 – 200 = □
364 – 153 =

Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards, inverse
Subtrahend (amount being taken away) Minuend (the quantity from which another will be subtracted) Difference.

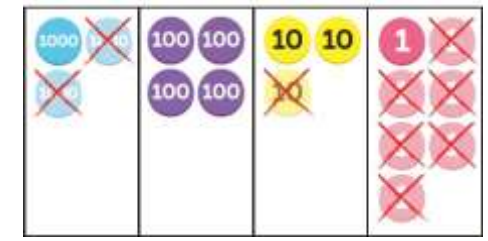
Subtraction Year 4

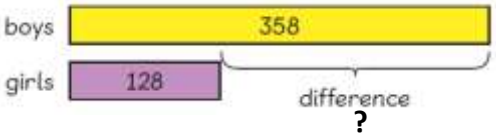
CPA Approach
(Concrete, pictorial, Abstract)

Mental methods (within 10,000)

Children should continue to develop, supported by a range of models and images, including partitioning.

Bar Model
To support the visualisation of subtraction. The missing element as a question mark

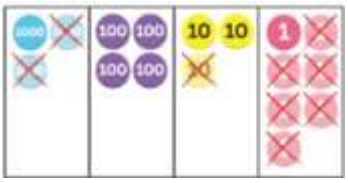




Written methods (progressing to 4-digits & 1 dp)

Continue to use column subtraction modelled with place value counters, objects, pictorial representations and the Bar Method (See Appendix 1)

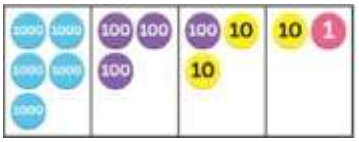
3437
- 2016
1421

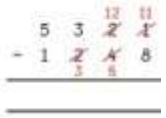


Extend to numbers with at least four digits, including renaming between various columns (borrowing).

$$\begin{array}{r} 5\ 2\ \overset{7}{\cancel{8}}\ \overset{10}{\cancel{0}} \\ -\ 3\ 1\ 6\ 9 \\ \hline 2\ 1\ 1\ 1 \end{array}$$

Use place value counters to explore compensation method





Select and use different methods to solve word problems,

Involve two step problems in context.
Missing number/digit problems, including use of inverse relationships:

200 – 90 – 80 = □
225 - □ = 150
□ – 25 = 67
□ - 2000 = 900

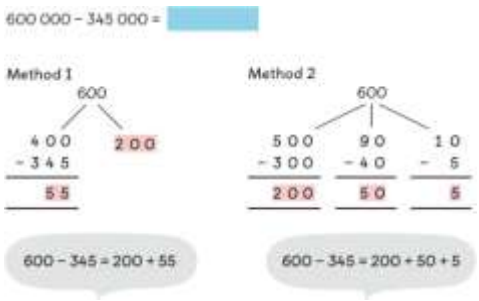
Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards, inverse
Subtrahend (amount being taken away) Minuend (the quantity from which another will be subtracted) Difference.

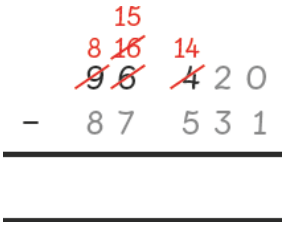
Subtraction Year 5

CPA Approach
(Concrete, pictorial, Abstract)

Mental methods (within 1 000 000) should continue to develop, supported by a range of models and images, including partitioning.



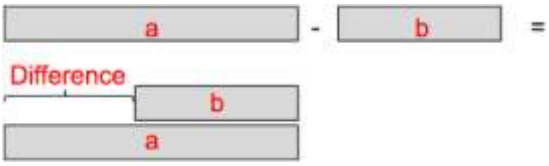
Written methods (progressing to more than 4-digits)
As in Year 4, continue to use place value counters to support understanding of decomposition (renaming/borrowing) in formal written method.
E.g. 96 420 – 87 531 =



Continue to select and use different methods to solve word problems, involving two step problems in context.

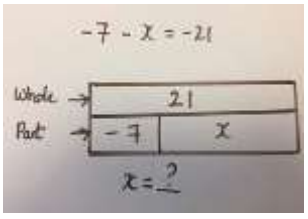
Bar Model to support problem solving

Use of bar model for missing number problems; questions with more than one answer; Numbers involving negatives.



Missing number/digit problems:

6.45 = 6 + 0.4 + □;
119 - □ = 86; 1 000 000 - □ = 999 000;
600 000 + □ + 1000 = 671 000; 12 462 – 2 300 =



Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards, inverse
Subtrahend (amount being taken away) Minuend (the quantity from which another will be subtracted) Difference

Subtraction Year 6

CPA Approach
(Concrete, pictorial, Abstract)

Mental methods

should continue to develop, supported by a range of models and images,

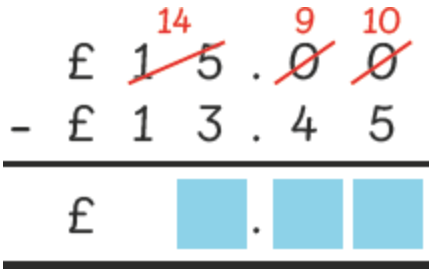
Written methods Alongside visual methods such as Bar Modelling

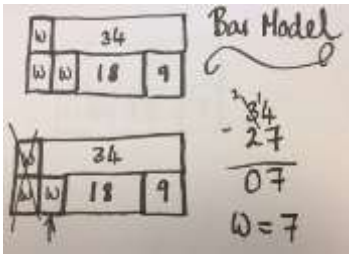
As in Year 5, progressing to larger numbers, aiming for both conceptual understanding and procedural fluency with columnar method to be secured.
Continue to model with place value counters, objects, pictorial representations and the Bar Method.
Continue calculating with decimals, including those with different numbers of decimal places, and develop procedural fluency with decomposition (Regrouping) to be secured.

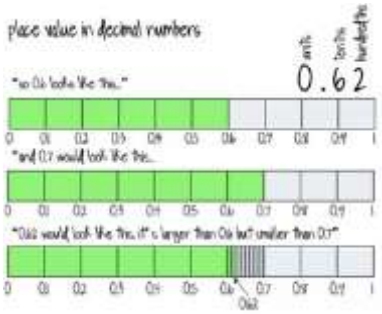
.

Problem Solving

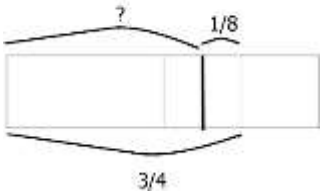
Teachers should ensure that pupils have the opportunity to apply their knowledge in a variety of contexts and problems (exploring cross curricular links) to deepen their understanding







3/4 of 64 - 1/8 of 64 =



Vocabulary

Subtraction, Subtract, Take Away, Minus, Less, Backwards, inverse
Subtrahend (amount being taken away) Minuend (the quantity from which another will be subtracted) Difference, Zero digit

Micro Steps

The year group markings relate to Mental Arithmetic sessions.
To be used also in planning where appropriate to learning

35 - 24 = 11 24 +11 = 35	Year 3 Term 1	
926 -815 = 111 815 + 111 = 926	Year 3 Term 1	
58964 - 34552 = 24412 24412 +34552 = 58964	Year 3 Term 1	Year 3 Term 3 Greater depth
587 - 24 = 563 563 + 24 = 587	Year 3 Term 3	
5853 - 422 = 5431 5431 + 422 = 5853	Year 3 Term 3	Year 3 Term 5 Recap on Learning
32245 - 112	Year 3 Term 3	Year 3 Term 5 Greater Depth
7.9 -2.8 = 5.1 2.8 +5.1 = 7.9	Year 3 Term 5	

234 -115	Year 3 Term 5	
334 - 153	Year 3 Term 5	Year 4 Term 1 Recap on Learning
334 - 155	Year 4 Term 1	
334 - 255 079	Year 4 Term 1	Year 4 Term 3 Recap on Learning
334 - 15	Year 4 Term 1	Year Four Term 3 Greater Depth
334 - 43	Year Four Term 3	Year 4 Term 5 Recap on Learning
334 - 55	Year Four Term 3	Year 4 Term 5 Greater Depth
4334 - 15	Year 4 Term 5	

15.34 - 3.15	Year 4 Term 5	
0s 340 - 210	Year 4 Term 5	Year 5 Term 1 Recap on Learning
T 304 -201	Year 5 Term 1	
3.04 - 2.01	Year 5 Term 1	Year 5 Term 3 Recap on Learning
U 350 - 24	Year 5 Term 3	
T 305 - 24	Year 5 Term 3	
TU 302 - 34	Year 5 Term 3	

500 - 34	Year 5 Term 5	
TU 3007 - 415	Year 5 Term 5	
3007 - 419	Year 5 Term 5	
£ 30.07 - 4.15	Year 5 Term 5	Year 6 Term 1 Recap On Learning
23 - 5.232	Year 6 Term 1	

Year Group Objectives for Subtraction

Year 1

Pupils should be taught to:

- read, write and interpret mathematical statements involving subtraction (–) and equals (=) signs
- represent and use number bonds and related subtraction facts within 20
- Subtract one-digit and two-digit numbers to 20, including zero
- Solve one-step problems that involve subtraction, using concrete objects and pictorial representations, and missing number problems such as 7 = – 9.

Year 2

Pupils should be taught to:

- solve problems with subtraction:
- using concrete objects and pictorial representations, including those involving numbers, quantities and measures applying their increasing knowledge of mental and written methods
- recall and use subtraction facts to 20 fluently, and derive and use related facts up to 100
- Subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and ones
    - a two-digit number and tens two two-digit numbers
- show that addition of two numbers can be done in any order (commutative) and subtraction of one number from another cannot
- recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems.

Year 3

Pupils should be taught to:

- Subtract numbers mentally, including: a three-digit number and ones
    - a three-digit number and tens
    - a three-digit number and hundreds
- Subtract numbers with up to three digits, using formal written methods of columnar subtraction

- Estimate the answer to a calculation and use inverse operations to check answerssolve problems, including missing number problems, using number facts, place value, and more complex subtraction.

Year 4

Pupils should be taught to:

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

Year 5

Pupils should be taught to:

- Subtract whole numbers with more than 4 digits, including using formal written methods (columnar subtraction)
- Subtract numbers mentally with increasingly large numbers
- Use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy
- Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why.
-

Year 6

- Perform mental calculations, including with mixed operations and large numbers
- Use their knowledge of the order of operations to carry out calculations involving the four operations
- Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why Mathematics – key stages 1 and 2 40 Statutory requirements
- Solve problems involving subtraction
- Use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy.