

St.Bartholomew's C of E Primary School: Subtraction Calculation Policy

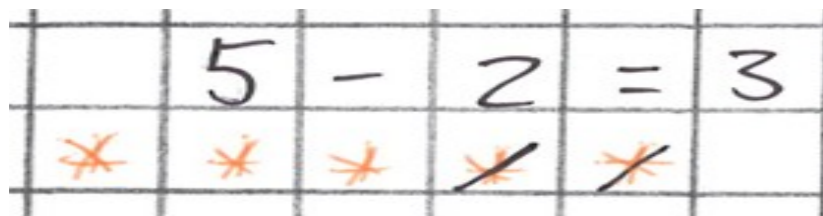
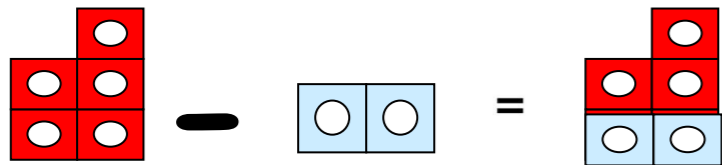
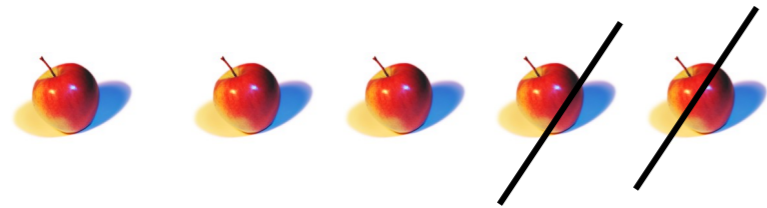
Stage 1 Subtraction - subtracting by taking away objects and prepared number lines

The children should understand the concept of subtraction as taking away a number objects from a set of objects and should use the (-) and (=) signs accurately. The children's calculation should be written on either side of the equals sign so that (=) is not just interpreted as an answer.

E.g. $5-2=3$ so $3=5-2$

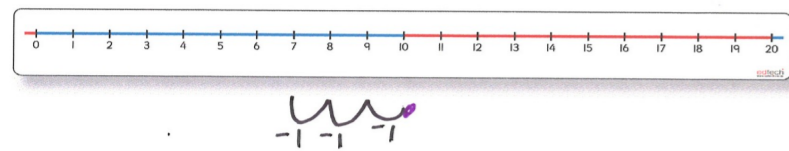
The children should use a range of objects to support visual representations to subtract from the largest number. The children should then use jottings.

$$5-2=3$$



Once the children are secure when subtracting using objects they should count back in one's using a prepared number line emphasising the largest number as the starting position. i.e. using a coloured dot.

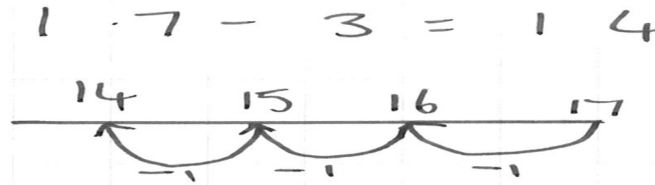
$$10-3=7$$



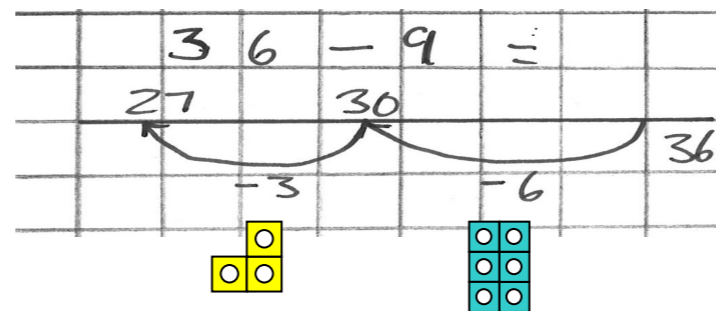
Vocabulary : take away. Less than one less and what's left.

Stage 2 Subtraction - subtracting with an empty numberline

Initially the children should be introduced to drawing their own number line to show their thought processes by counting back in ones from tens and ones. They should record the jumps under the numbers line in ones.

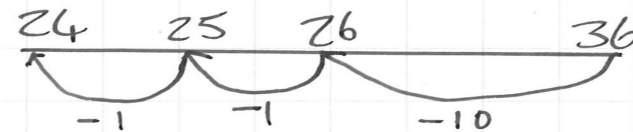


The children then should use more efficient methods of subtracting using a number line for example bridging through 10



The children should then move on to subtracting tens and ones counting back in tens first then the ones. The children should then continue to use this method with larger numbers crossing the boundary of 10.

$$36-12=24$$



Models and images

Throughout this stage the children should be encouraged to use a variety of models and images as a supporting tool when working with numberlines. For example.



Vocabulary in addition to previous stage: subtract, count back, numberline, partition and boundary of 10

Stage 3 Subtraction -expanded subtraction using tens and ones

Initially the children need to use expanded subtraction not crossing the boundaries of 10 by partitioning and

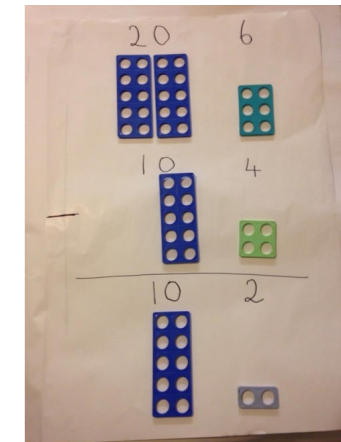
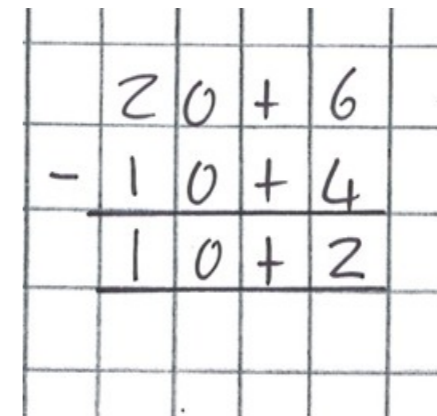
recombining e.g.

7	6	-	2	1	=	5	5
(70	+6)	-	(20	+1)	=		
7	0	-	2	0	=	5	0
	6	-		1	=	5	
5	0	+		5	=	5	5

Models and images.

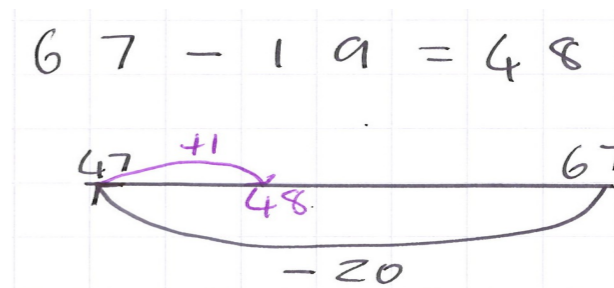
As with Stage 2 the children should have the opportunity to use models and images as visual representations to support their understanding when partitioning and recombining for example using dienes and arrow cards.

Once the children are secure with this they need to be introduced to vertical expanded column subtraction using practical apparatus to support the process.



Jottings

Children need to use jotting to support mental calculations for example subtracting 19 or 21 by adjusting through 20.



Vocabulary in addition to previous stages: minus, difference, , ,column, exchange, vertical, and expanded.

St.Bartholomew's C of E Primary School : Subtraction Calculation Policy

Stage 4 Subtraction – up to 3 digit numbers

The children should continue their understanding of using formal written methods initially using the models and images they have used in an earlier stage. **The National Curriculum restricts Year 2 children progressing onto three digit numbers. The children Year 2 should be taught Part 3 of this stage when crossing the boundary of 10.**

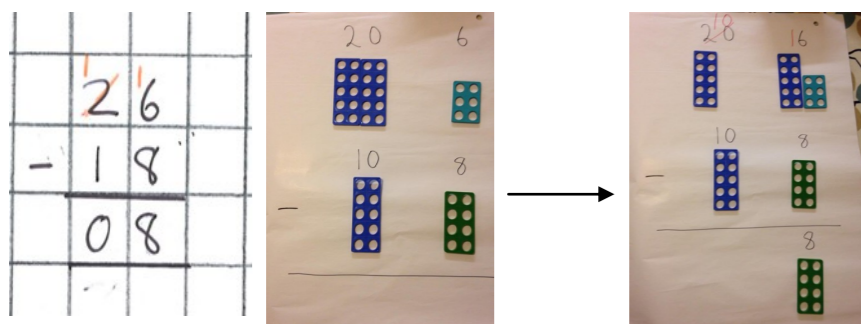
$$768 - 323 = 445$$

Once the children are secure with using number lines they should be taught expanded column subtraction and decomposition alongside each other so that they have a secure understanding of place value initially not crossing the boundary of 10.

7	0	0	+	6	0	+	2	
-	2	0	0	+	3	0	+	1
5	0	0	+	3	0	+	1	

7	6	2	
-	2	3	1
5	3	1	

Once the children are secure with this they should cross the boundary of 10. **Initially practical apparatus should be used with TO so that the children gain an understanding about the carry then extend to HTO practical apparatus.**



Jottings

The children should be encouraged to use jottings to support mental calculations by estimating or subtracting the nearest multiple of 10 or 100 then adjusting.

Vocabulary in addition to previous stages: decrease, inverse, decomposition and borrow.

Stage 5 Subtraction– subtracting 4 digit numbers

The children should use the formal method of decomposition and borrowing. The borrowing digit should be written next to the digit on the left.

	³ 4	¹ 6	⁴ 5	¹ 1
-	2	8	3	4
	1	8	1	7

Once the children are secure with this they should use this formal method of subtraction in real life contexts using decimal numbers

children are secure should use this

	⁶ £	¹² 7	¹ .	¹ 7	
-	£	4	.	6	9
	2	.	6	8	

If the children have difficulties subtracting 4 digit numbers or decimal numbers in context this should be taught alongside expanded subtraction and models and images from Stage 4.

Jottings

Encourage the children to estimate their answers before using decomposition by rounding to the nearest 1000 or whole number.

Vocabulary in addition to previous stages: decimal point, decimals, tenths and hundredths

Stage 6 Subtraction - decimal numbers

The children should subtract decimal numbers initially by reverting back to models and images from stage 4 to secure their understanding of place value. The children should subtract the whole number first then the decimal number.

$$37.6 - 7.4 = 30.2$$

Once the children are secure with this the children should use decomposition with numbers that have the same amount of decimal numbers.

	⁵ 6	¹ 2	³ .	⁵ 6	¹ 1	
	4	8	.	1	4	9
	1	4	.	1	2	

Once the children are secure with this they can be introduced to subtracting mixed decimal numbers using '0' as a place holder

	⁶ 7	¹ 6	⁴ .	⁶ 7	¹ 0	
-	0	9	.	3	3	6
	6	5	.	1	3	4

Jottings

Encourage the children to estimate their answers before using decomposition by rounding to the nearest 10th or whole number.

Vocabulary in addition to previous stages: mixed numbers, zero and place holder.