Mental Maths Calculation Policy: Subtraction

The rationale for the Mental Maths Calculation Policy is to help provide teachers and children with a variety of strategies to tackle arithmetic questions without being overly reliant on formal written methods. The aim of this document is to help children becoming fluent, flexible and accurate in their mental calculation and help them to draw on their knowledge of known facts. Below is a grid of the potential strategies that can be applied and in which year groups you could use these strategies. This policy should be used in conjunction with the written methods calculation policy. This policy was inspired partly by the book Number Talks: Whole Number Computation by Shelly Parrish.

Category	Strategy	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6
Subtraction	Reduction by taking away/ Counting Back	✓	✓	✓			
	Removal/ Counting back in 10s and ones		✓	✓	✓	✓	✓
	Comparative difference/ Adding Up	✓	✓	✓	✓	✓	✓
	Adjusting One Number to Create an Easier Problem			✓	✓	✓	✓
	Place Value and Negative Numbers					✓	✓

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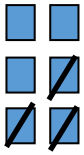
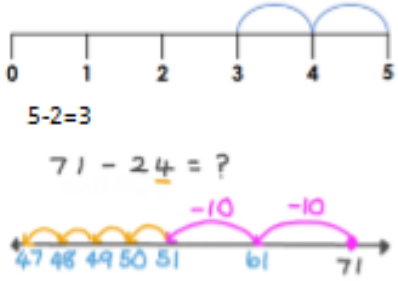
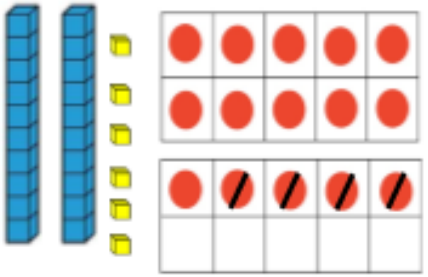
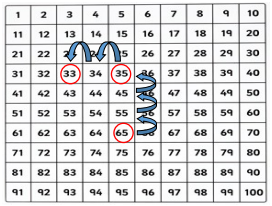
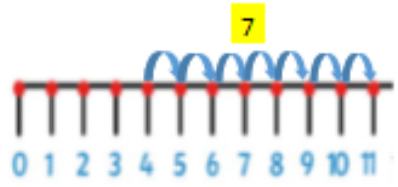
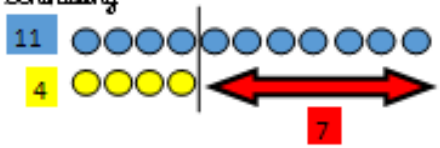
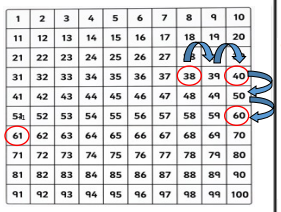
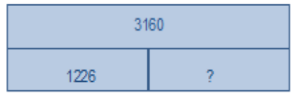
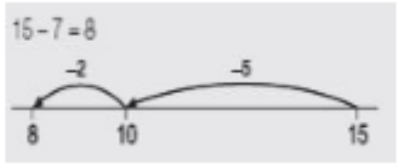
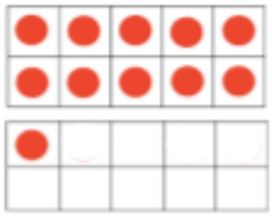
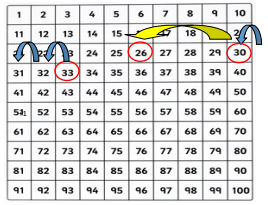
Strategy and method	Recorded Strategy	Representation (and practical strategy) Concrete	Pictorial	Abstract
Reduction by 'taking away' or 'counting back' concrete apparatus and counting how many are left.	6-3=3	 6 -3=3 Fingers can also be used here.	Draw cubes and cross out. 	Harry has 8 sweets. He eats 4 of them. How many does he have left?
Removal/counting back in 10s and ones. Children explore practically the subtractions of ones and tens through objects e.g. Base 10.			Arrays used in a similar way to counters. 100 squares and number line can be used.  65-32 65 - 30 = 35 35- 2 = 33	There were 17 birds on a branch. Then 8 flew away. How many are left? 17-8-9
Adding Up/Comparative Difference: Count up to find the difference E.g. 82-79 79 + ___ = 82	11-4 by doing 4 + ___ = 11 	Find/show the difference by comparing/ contrasting 	6-3=3 square 61-38 38 + 2= 40 40+20 = 60 60 + 1 = 61 2 + 20 + 1 =23  100	This approach with bar model can be used to find missing numbers.  1226 + _____ = 3160
Partition and bridge through 10. 45-8 45-5-3	 15-5- 10 then 10-2-8	11-7- 4 (Partition the 7 into 1+6)  11-1=10 10-6=4 This can also work as drawn arrays where counters are crossed off.	33-7 = 33 - 3 and then -4 more. 33-3 = 30 30 - 4 = 26 	45–8- _____ Partition the 8 into 5 and 3 45-5-40 40-3-37

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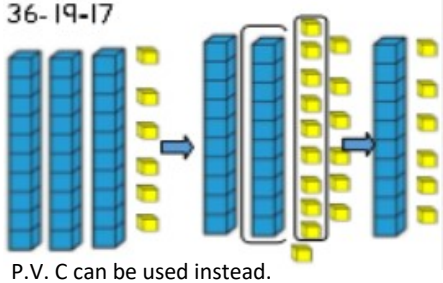
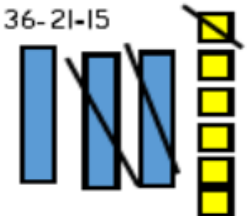
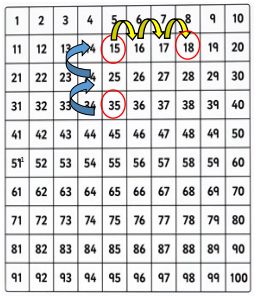
Partition and then subtract 46- 23 = 23	Intelligent practise to explore both. 46-23 40–20- 20 or 46-20 - 26 6-3- 3 26-3- 23 20+ 3 - 23	36-19-17  P.V. C can be used instead.	Draw base 10 and cross off 36-21-15 	If 43-26 'Take then make' Take ten from 43 to make 30 and 13 Then subtract 20 and 6.
Place Value and Negative Numbers	123 - 59 (100 + 20 + 3) (50 + 9) 100 20 3 - 0 50 9 100 -30 -6 100 - 30 = 70 70 - 6 = 64	Would not recommend this strategy if child is still reliant on concrete apparatus/pictorial arrays.	Would not recommend this strategy if child is still reliant on concrete apparatus/pictorial arrays.	Using this approach, the child approaches the problem by looking at individual columns. The value of each number is kept intact and used in the final computation.
Adjusting One Number to Create an Easier Problem. Similar to Compensation method in addition.	151 - 96 96 + 4 = 100 151 - 100 = 51 51 + 4 = 55	Place Value Counters, Dienes Rods, tens frames can be used to support this method.	35 - 17 17 + 3 = 20 35 - 20 = 15 15 + 3 = 18 	Brian has 271 packs of stickers. He sells 68 packs in one day. How many packs did he have left? 271 - 68 68 + 2 = 70 271 - 70 = 201 201 + 2=