Maths Calculation Policy – Subtraction

This document shows the progression in the models, pictures and

calculations we used to support teaching subtraction at Stottesdon C of E

Primary School.

Subtraction-

Key language which should be used: take away, less than, the difference, subtract, minus, fewer, decrease, 7 take away 3, the difference is four, How much more? How much less? How much fewer?

Concrete	Pictorial	Abstract
Physically taking away and removing parts from a whole. This results in part being left. 4 − 3 = 1 Playing number stories with equipment. E.g. Four lambs were in a field. Three lambs left the field. How many are left in the field?	Children to draw the concrete resources they are using and cross out. Use of the bar model: Recognising pictorial **representations** of a fingers model. 5 − 3 = 2 	4 − 3 = _____ = 4 − 3
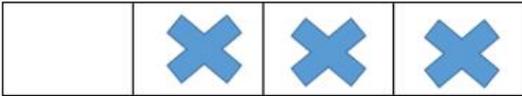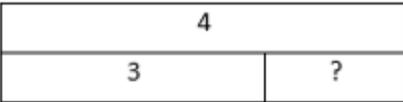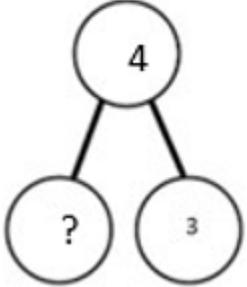
Counting back (using number lines or number tracks)	Children representing what they see pictorially. Links to bar model.	Using a number line to count backwards.
	6 | X | X | X | X | | X | X | ?　　　　2	
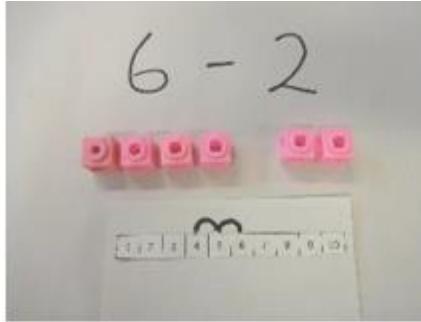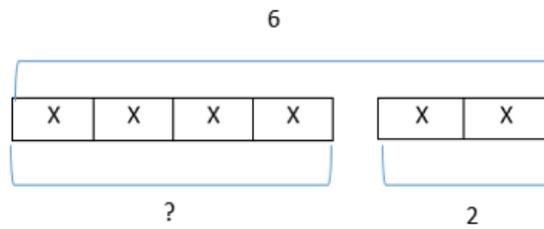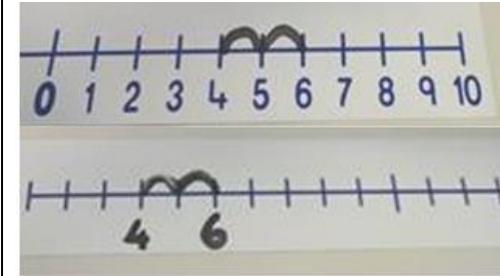
Finding the difference

2 cars

2 cars

Children draw representations of the equipment they have used.

Bar models showing the gap or difference

5 red cars

3 blue cars

2 cars

Asif 🍬🍬🍬🍬🍬🍬🍬

Tom 🍬🍬🍬🍬🍬

Sandra 🍬🍬🍬

Essie 🍬🍬🍬🍬🍬🍬
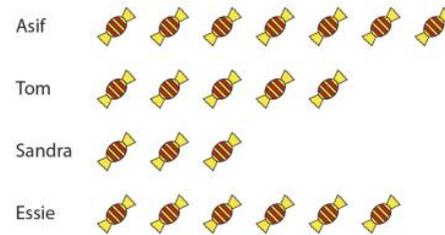
Interpreting pictograms and bar charts.
How many more sweets does Tom have than Sandra?
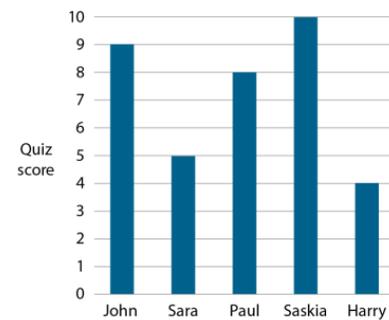
How many more points did Paul score than Sara?

Using number lines to find or show the difference.
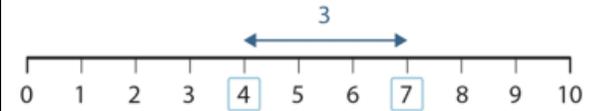
8 – 6, the difference is?

Children also explore why 9 – 7 = 8 – 6.
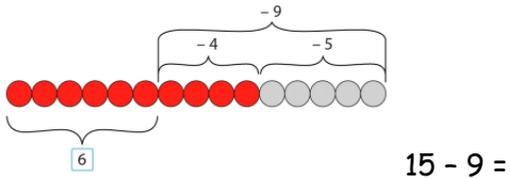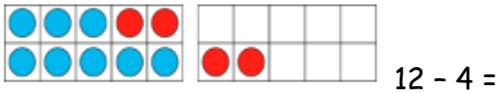
Bridging ten	Children represent the tens frame pictorially with crossings out.	Pupils move to a more abstract number line and on to partitioning the subtrahend.
12 – 4 = 15 – 9 =		15 – 9 = – 4 – 5 6 7 8 9 10 11 12 13 14 15 12 – 3 2 1 The focus is on using knowledge of number bonds to subtract rather than counting back or on.
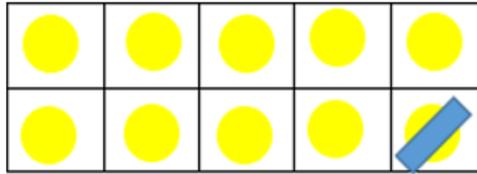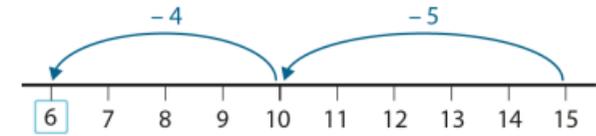
Subtracting using place value (without bridging) Subtracting 15 'taking away' 23	Drawing representations of tens and ones. T O	
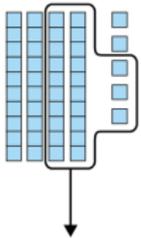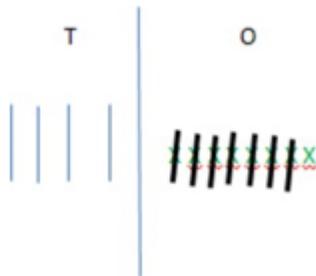
4	8	-
1	7	
3	1	

$$45 \quad - \quad 23$$

$$20 \quad 3$$

$$45 - 23 = 45 - 20 - 3$$

Missing number that shows understanding of the process.

$$84 - 12 = 84 - 2 - \boxed{}$$

$$68 - 23 = 68 - \boxed{} - 20$$

$$47 - 25 = 47 - \boxed{} - \boxed{}$$

Subtracting using place value (bridging ten)	Represent this pictorially. Moving on from this quickly to use an abstract method.	$86 - 27 = \square$

Subtracting using place value (bridging ten)
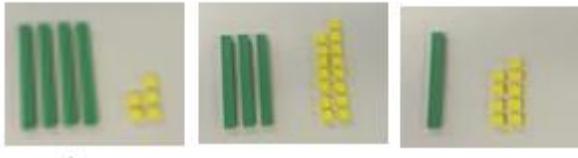
45 – 26 =

1. Start by partitioning 45.
2. Exchange one ten for ten ones.
3. Subtract the ones, then the tens.

Represent this pictorially. Moving on from this quickly to use an abstract method.

Tens   Ones
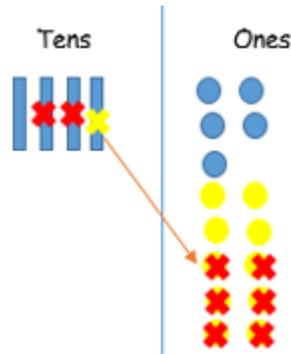
$86 - 27 = \square$

```
      27
     /  \
   20    7
        / \
       6   1
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The second partitioning will probably be done mentally.

Number line. 63 - 17

| −4 | | −3 | | −10 |
46   50   53   63
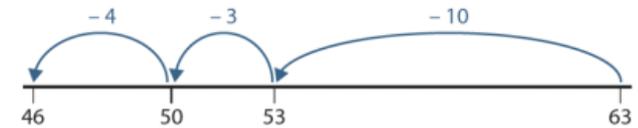
3	5	-
2	6	
1	9	

Continued methods for calculation including column method.

Column method (using place value counters) 234-88

Hundreds	Tens	Ones
5 2	12	6
- 2	7	5
3	5	1
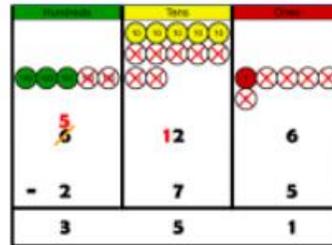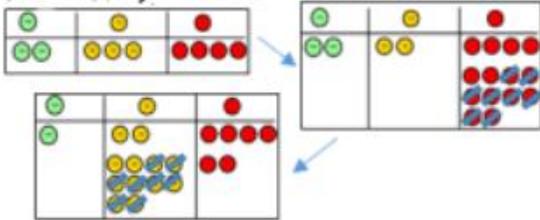
Draw the counters onto a place value grid and show what you have taken away by crossing the counters out as well as clearly showing the exchanges you make.

2 1	3 12	4	-
	8	8	
1	4	6	

Starting with just regrouping from tens to ones and develop this using small steps.

Fluency and variation. Different ways to ask children to solve subtraction problems. Always encourage children to make independent choices about the most efficient method for them to solve calculations

391

?   186

391

186   ?
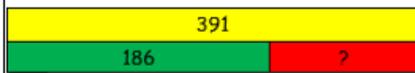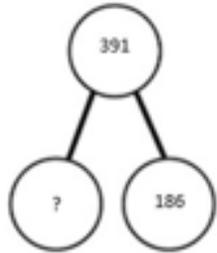
Function machines

3 2 1		
4 6 7	-90 =	
8 9 1		

Continued use of numberline.

440 – 160

– 20   – 40   – 100

280 300   340   440
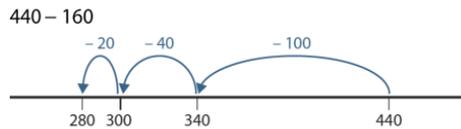
• Finding the difference (working forward from the subtrahend) – *more* efficient

+ 5   + 2

125   130   132
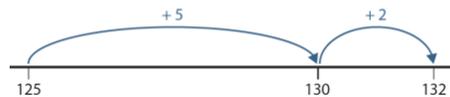
Raj spent £391. Timmy spent £186 How much more did Raj spend? How much fewer/less did Timmy spend?

I had 391 metres to run. After 186 I stopped. How many metres do I have left to run?

Multi step word problems that include subtraction in addition to other calculations.

391 – 186 =

_____ = 391 – 186

Find the difference between 391 and 186.

Subtract 186 from 391

What is 186 less than 391?

Balancing calculations

150 - ____ = 83 = 183 - _____

46 - 20 = ___ + 21

What is the calculation in this place value chart?

Hundreds	Tens	Ones
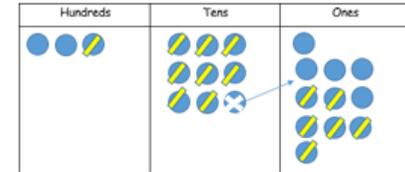
What could the missing numbers be? Is there more than one solution?

3 9 ☐

- ☐☐ 6

☐ 0 5

Subtracting more than one number.

65		
30	16	?

65 – 30 – 16 = ☐