



Calculation Policy Subtraction

Objectives relating to subtraction by year group

Pre-requisites:

Counting: count back accurately from 0 to 21; count up to 20 objects accurately and attribute the correct numeral to label the set;

Ordering: order numbers to 20 accurately; understand how a number line is organised

Representations: subitise small groups of objects (i.e. can say how many there are without needing to count each individual object; understand the 'cardinal' value of a set/ array. (Once it has been counted they understand that they don't need to count again.)

- Year 1 - Subtract one-digit and two-digit numbers to 20, including zero.
- Year 2 – Subtract a two-digit number and 1s, a two-digit number and 10s, 2 two-digit numbers.
- Year 3 – Subtract numbers with up to 3 digits, using formal written methods of columnar subtraction.
- Year 4 - Subtract numbers with up to 4 digits using the formal written methods of columnar subtraction where appropriate.
- Year 5 - Solve problems involving number up to 3 decimal places. They practise subtracting decimals, including a mix of whole numbers and decimals, decimals with different numbers of decimal places, and complements of 1 (for example, $0.83 + 0.17 = 1$).
- Year 6 - Solve subtraction multi-step problems in contexts, deciding which operations and methods to use and why.

Vocabulary:

subtract	subtraction	less	take away	minus
difference	repeated subtraction	left	fewer	exchange

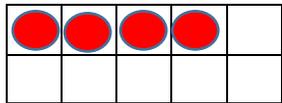


Concrete

Pictorial

Abstract

Use physical objects, counters, cubes etc. to show how objects can be **subtracted**
 $6 - 2 = 4$



Bead strings



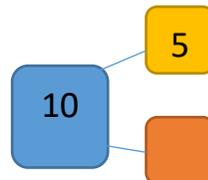
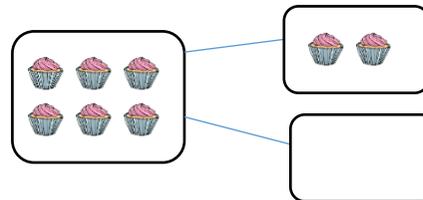
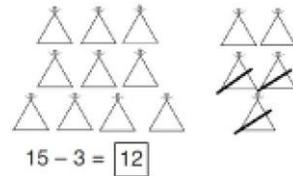
Move the beads along the bead string when counting backwards in ones.

Counters



Use counters and move them away from the group as they are subtracted, counting backwards whilst moving them.

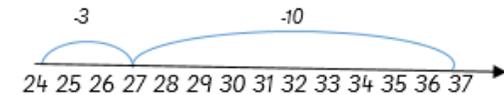
Cross out drawn objects to show what has been **subtracted**



Basic bar models to find the **difference**

Subtraction on a numbered/blank number line

- Subtracting in jumps of ones -1 -1 -1 -1 -1
- Subtracting teens number in jump of ten and jumps of ones - 10 -1- 1- 1
- Subtracting teens number in jump of ten and jumps of ones - 10 -3



- Subtracting in jumps of tens and ones -10 - 10 -1 -1 -1
- Subtracting in jumps of ten and single jump of ones -10 -10 -3
- Subtracting in single jump of tens in one jump and single jump of ones -20 - 3



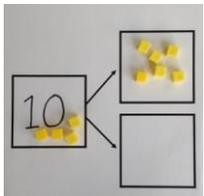
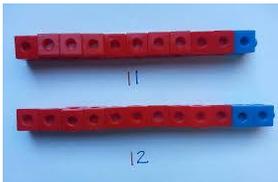
N.B a numberline should also be used to show that $6 - 3$ means the difference between 6 and 3 or the difference between 3 and 6 and how many 'jumps/ they are apart.

Bridging through ten



Find the difference

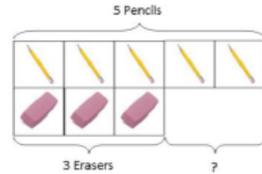
Use cubes to build towers or make bars to find the difference. Tom has 11 cubes. Sam has 12. How many more does Sam have?



Link to addition- use the part, part whole model to help explain the relationship between addition and subtraction.

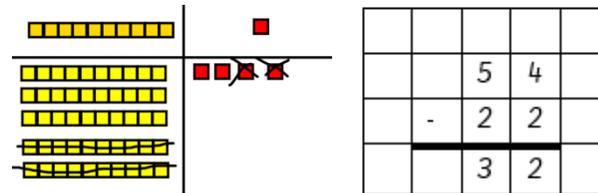
Subtraction using Tens Frames

$14 - 9 =$



How many more pencils are in the pencil case?

Draw the Base 10 or place value counters alongside the written calculation to help to show working.

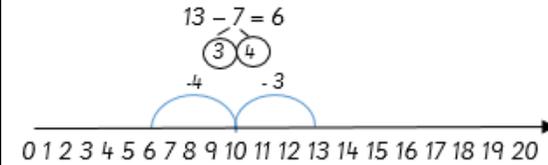


Calculations

$$176 - 64 =$$

$$\begin{array}{r} 176 \\ - 64 \\ \hline 112 \end{array}$$

Partitioning can help support bridging through ten

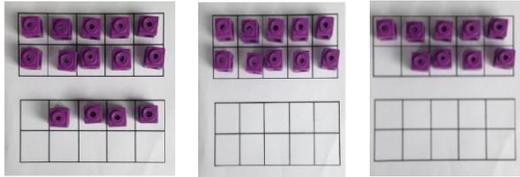


Introduction of column method (No regrouping)

	8	9		8	0	+	9				
-	5	7		5	0	+	7				
	3	2		3	0	+	2				

Introduction of column method (Regrouping)

	6	0		1	
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Make 14 on the ten frame. Subtract the four first to make 10 and then Subtract one more so 5 have been subtracted. You are left with a difference of 9.

Base 10

Regrouping

Draw the counters onto a place value grid and use crossingout to identify what has been subtracted or exchanged.

$$626 - 275$$

	7	0		1			
-	4	0		6			
	2	0		5			

	7	0	0		1			
	8	0	0		3	0		6
-	2	0	0		5	0		4
	5	0	0		8	0		2

	6	1		
	7	2	8	
-	5	8	2	
	1	4	6	

With 2 exchanges

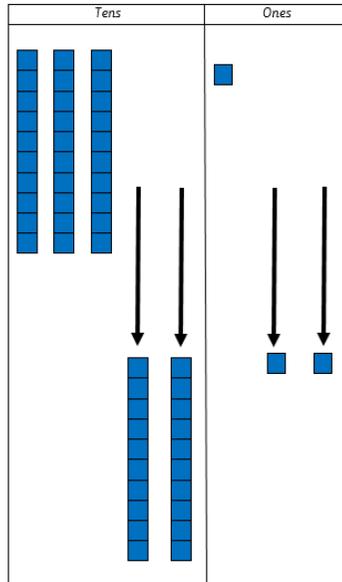
Exchange 1 ten for 10 ones and subtract 6 ones

		4	1	
	7	8	4	
-		8	6	



Use Base 10 to make the whole then subtract a part

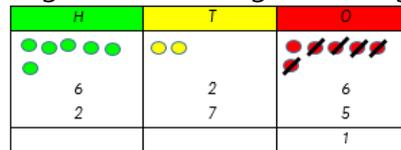
$$53 - 22 =$$



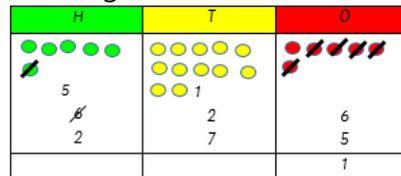
Counters and [exchanging](#)

Use Base 10 to start with before moving on to place value counters. Start with one [exchange](#) before moving onto subtractions with 2 [exchanges](#).

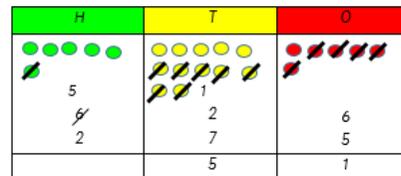
Begin with least significant digit



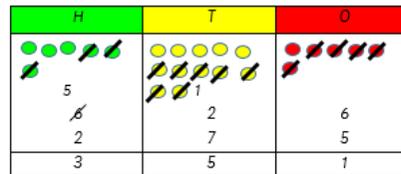
Exchange 1 hundred for 10 tens



Subtract 7 tens



Subtract 2 hundreds



			8	
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Exchange 1 hundred for 10 tens and subtract 8 tens

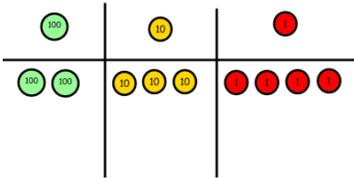
	6	14	1	
	7	5	4	
-		8	6	
		6	8	

Subtract any hundreds

	6	14	1	
	7	5	4	
-		8	6	
	6	6	8	



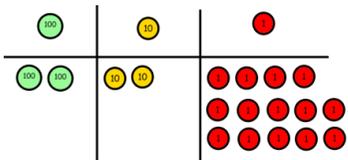
$$234 - 88 =$$



	2	1
2	3	4
	8	8
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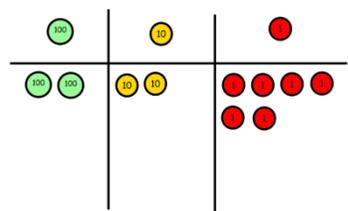
Make the whole (234) with the place value counters

Start with the least **significant digit** – the ones. 'Can I subtract 8 ones from 4 ones?' 'I need to exchange 1 ten for 10 ones.'



	2	1
2	3	4
	8	8
<hr/>		
		6

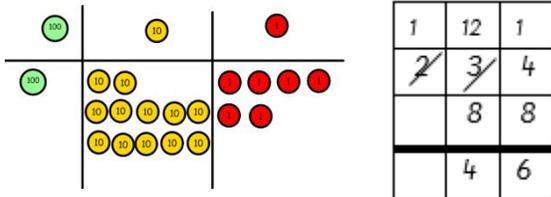
'Now I can subtract 8 ones.' Move to the tens. 'Can I subtract 8 tens?'



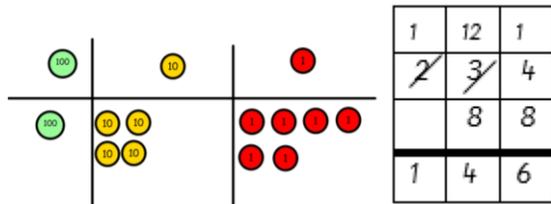
1	12	1
2	3	4
	8	8
<hr/>		
		6



'I need to exchange 1 hundred for 10 tens.



Now I can subtract 8 tens



It is important to show children how the concrete method links to the written method. Cross out the numbers when exchanging and show where the new value is written.