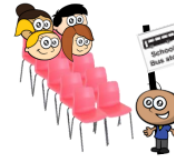
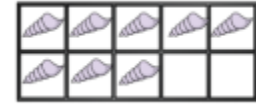




Headlands Primary School Subtraction Policy and Methods

	Mental Calculations	Calculation	Methods
E Y F S		Using quantities and objects, subtract two single-digit numbers and count back to find the answer. Find one less from a group of up to five objects, then ten objects. In practical activities and discussion, begin to use the vocabulary involved in subtracting	Children use objects and pictures to support subtraction.



They begin to use the operation signs and to write numbers.

Take away from a set of objects, counting what is left.



6 take away 2 is 4

Count back in 1s from the total of the first set of objects.

Cross out drawn objects to represent what has been taken away.



3 take away 2 is 1

Children are introduced to the language of subtraction rather than the subtraction symbol being explored straight away. 'Taking away' is used in a range of real life contexts such as flying away and eating.

Story representations

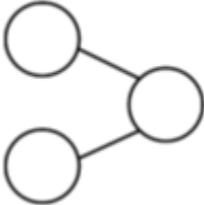
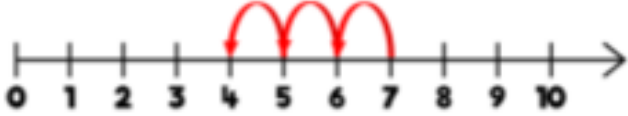
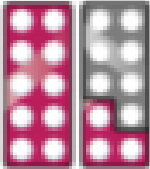


At first there were ___ apples.

Then ___ were eaten.

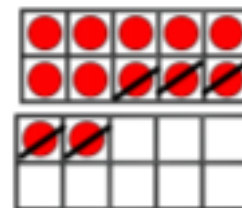
Now there are ___ apples.

Once children understand the concept of taking away, the subtraction symbol can be introduced.

Y e a r 1	Add and subtract one-digit and two-digit numbers to 20, including zero Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	 Complete the number sentence.  $7 - 2 = \underline{\quad}$ _____ Use counters/cubes to help you solve and complete: $\square - \square = \square$  26 Children count backwards to subtract. It is an important step to help children work in the abstract. It is vital to model how to count backwards by 'putting the start number in our head and counting backwards'.  $7 - 3 = \underline{\quad}$  $20 - 7 = \underline{\quad}$ 
Y e a r 2	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 * adding three one-digit numbers	Solve problems with addition and subtraction: ☞ using concrete objects and pictorial representations, including those involving numbers, quantities and measures	

Show that addition of two numbers can be done in any order (commutative) and **subtraction of one number from another cannot**

 applying their increasing knowledge of mental and written methods



$$12 - 5 =$$



Teaching needs to focus on the importance of the tensdigit. Using a 100 square, explore with the children what happens to the numbers in the columns.

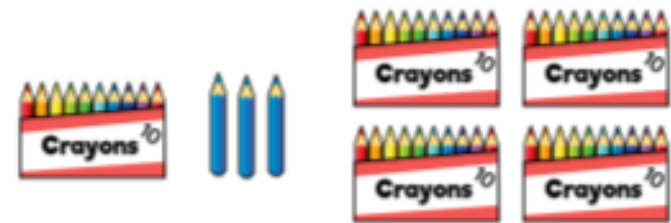


Continue the number tracks below.



Using concrete materials, complete the missing boxes.

10 less	Number	10 more
		
2	12	22
		
	37	



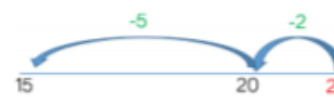
Class 3 gives one of their full packets of crayons away.

How many crayons do they have left?

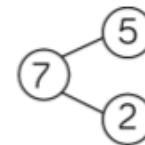
Tens	Ones
	
	

$$\begin{array}{r} 56 \\ - 30 \\ \hline \end{array}$$

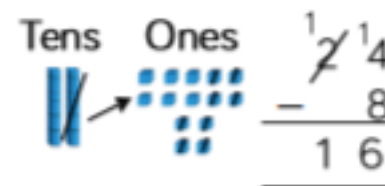
Can we use number bonds to subtract more efficiently?



We can partition 7 into 5 and 2 and use this to bridge the 10



Subtract 8 from 24

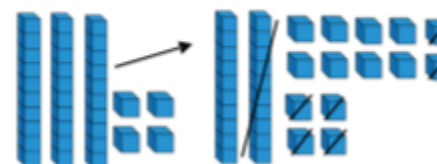


Subtract 13 from 28



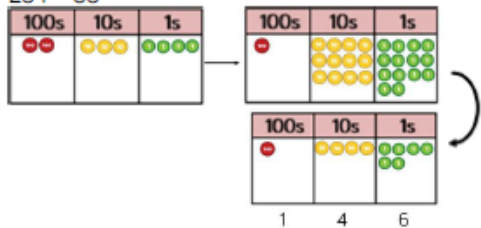
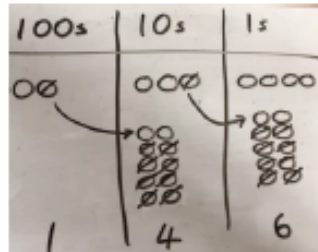
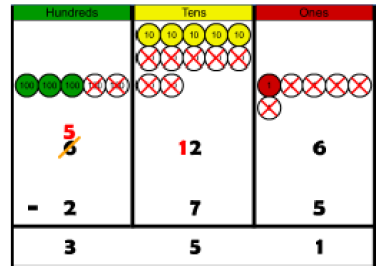
$$\begin{array}{r} 28 \\ - 13 \\ \hline 15 \end{array}$$

Take 16 away from 34



$$\begin{array}{r} \cancel{3}^2 \cancel{4}^1 \\ - 16 \\ \hline 18 \end{array}$$

Y e a r 3	Add and subtract numbers mentally, including: * a three-digit number and ones * a three-digit number and tens * a three-digit number and hundreds	Add and subtract numbers with up to three digits, using formal written methods of columnar addition and subtraction	<u>Partitioned column method (Expanded method)</u> <u>Use Base 10/place value counters to support understanding.</u> <u>Step 1:</u> Only solve calculations that <i>do not</i> cross the tens boundary, until children are secure with the method. <u>Step 2:</u> Solve calculations that <i>do</i> cross the tens boundary, starting by doing it practically using base ten and place value counters. The children need to be proficient in partitioning 2 digit numbers into different multiples of ten and 1 or 2 digit numbers to move on to the recorded partitioned column method with exchanging.
Y e a r 4		Add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	<u>Step 3:</u> Once children are secure with exchanging, they can <i>move on to calculations involving 3 digit numbers.</i> Children should be reminded of the importance of aligning the columns accurately. Example: 741 – 367

			Column method using place value counters. 234 - 88 
Year 5	Add and subtract numbers mentally with increasingly large numbers	Add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Represent the place value counters pictorially; remembering to show what has been exchanged.  Expanded method leading to column method $ \begin{array}{r} 67 \quad 14 \quad 14 \\ - \quad 8 \quad 6 \\ \hline 6 \quad 6 \quad 8 \end{array} $  Use Base 10 and place value counters to support understanding of decomposition and place value.
Year 6		Solve addition and subtraction multi-step problems in contexts, deciding which operations and methods to use and why	

Once children are confident in exchanging and have a clear understanding of place value, move towards the **formal column method**.

Addition and subtraction

789 + 642 becomes

$$\begin{array}{r} 789 \\ + 642 \\ \hline 1431 \\ \hline \end{array}$$

Answer: 1431

874 - 523 becomes

$$\begin{array}{r} 874 \\ - 523 \\ \hline 351 \\ \hline \end{array}$$

Answer: 351

932 - 457 becomes

$$\begin{array}{r} 932 \\ - 457 \\ \hline 475 \\ \hline \end{array}$$

Answer: 475

Continue **formal column method**, extending to calculations involving numbers with more than 4 digits.

Use place value counters to support understanding of decomposition and to ensure conceptual understanding of place value, add counters with 0.1, 0.01, and 0.001.

When children are confident in using **formal column method** with integers and decimals involving money (where there are always 2 decimal places), move on to looking at using the method to subtract with mixtures of integers and decimals. It is essential that children have a clear understanding of place value in these instances. Remind children to align the decimal point and use '**place holders**', if needed.

$$\begin{array}{r} 263.0 \\ - 236.5 \\ \hline 29.5 \end{array}$$

			0 14 1 3 1 1 5 3 . 4 1 9 kg - 7 6 . 0 9 0 kg 7 7 . 3 2 9 kg
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