

## Stage 4

Children need to apply knowledge of number bonds to work out what needs to be added to a decimal number to make a whole number e.g.  $0.2 + 0.8$

Children need to move from expanded column method to column method once in this stage. Start with 2 and 3 digit numbers and then children should be able to apply their skills to solve problems with any 4 digit numbers.

### Addition

Add the numbers in each column starting with the ones.

16 ones = 1 ten and 6 ones

add the ten to the ones column by writing it underneath. Write the 6 ones in the ones column.

13 tens = 1 hundred and 3 tens

Add 1 to the hundreds column and write the 3 tens below the 10s columns.

Add the hundreds and write the total below the hundreds column.

	H	T	O
	3	6	8
+	2	6	8
	1	1	
	6	3	6
↓			
	1	2	3
+	5	6	7
	6	9	1
			2
			1

### Subtraction

Start with the ones.  $4 - 2 = 2$ .

Move to the tens.  $20 - 70$  can't be done so exchange one hundred for 10 tens.

Now there are 12 tens.  $12 - 7 = 5$ .

As 1 hundred has been exchanged there are now only 2 hundreds remaining.  $2 - 2 = 0$

	H	T	O
	2	3	2
-	3	1	4
	2	7	2
	0	5	2
↓			
	2	4	5
-	1	3	8
	1	0	7

## Stage 5/6

Children need to use their knowledge of doubles and near multiples of 10 (numbers in the 10x table).

Build on use of the column method with numbers up to 10,000 and decimal numbers.

Line up the decimal points...

$$\begin{array}{r} 3.21 \\ + 4.5 \\ \hline 7.71 \end{array}$$

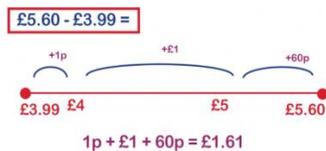
Add as usual!

	T	Th	Th	H	T	O
	7	4	5	2	3	2
-	2	2	6	2	3	
	5	2	9	0	9	

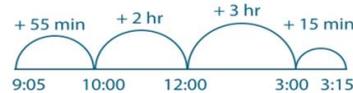
↑ and just drag that decimal point straight down!

Encourage children to recognise when they can use mental methods instead of a written method (column method).

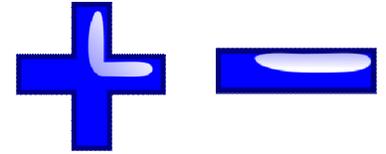
Money and time always on a number line! Teach children to count on to solve problems. E.g.



The trip starts at 9:05 and lasts 6 hours and 10 minutes. What time does it finish?



# Calculation Policy



## Addition and Subtraction

This policy is designed to help parents/guardians support their children with addition and subtraction homework. As children are taught according to their ability and not their age, please ask your child's teacher what stage your child is currently working at. We teach children methods that build up on their existing skills and understanding so please make sure children do not miss out stages as this could lead to gaps in their learning/ understanding. If you are unsure about any of the methods please speak to your child's class teacher.

## Early Years

Children need to learn all of the pairs of numbers which add to 10 (number bonds) e.g.  $8 + 2$ .

Provide lots of opportunities for children to collect groups of objects and then combine them to find totals up to 20.

Encourage children to organise groups of objects in to rows and columns so that they are easier to count.



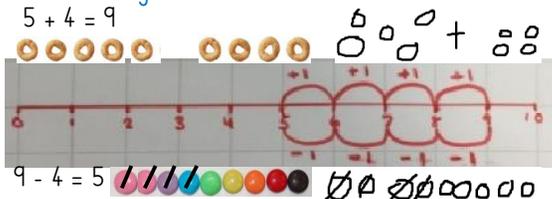
When taking away (subtracting), children should be able to physically move the objects away and count those remaining to find the answer.



## Stage 1

Children need to learn all of the pairs of numbers which add to make 20 (number bonds) using their knowledge of number bonds to 10.

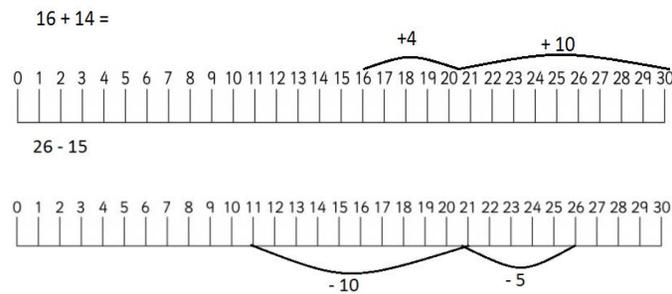
Teach children how to use number lines alongside practical resources and drawings. Solving subtraction below the number line and addition above the number line helps children to remember whether they are counting forwards or backwards. Children should only work with numbers to 20 at this stage.



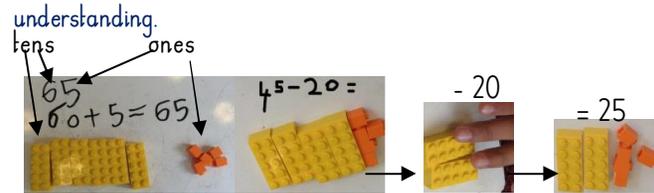
## Stage 2

Children need to learn pairs of numbers in the 10 times table (multiples of 10) which total 100. E.g.  $60 + 40$

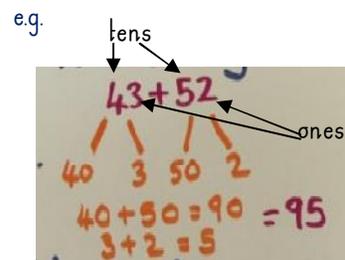
Encourage children to count in steps on a number line using their knowledge of number bonds and number patterns to help them. Children should work with numbers up to 100 at this stage.



Children need to learn how to split (partition) any 2 digit number in to tens and ones using resources to improve their



Once children can partition numbers, they can use this to support them with adding and subtracting 2 two digit numbers.

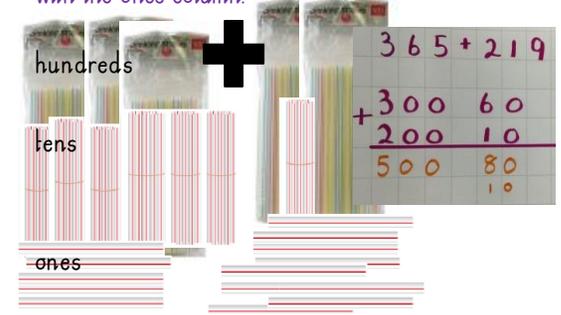


$$\begin{array}{r} 78 - 24 = \\ \begin{array}{r} 70 \\ 8 \end{array} - \begin{array}{r} 20 \\ 4 \end{array} \\ 70 - 20 = 50 \\ 8 - 4 = 4 \\ 50 + 4 = 54 \end{array}$$

## Stage 3

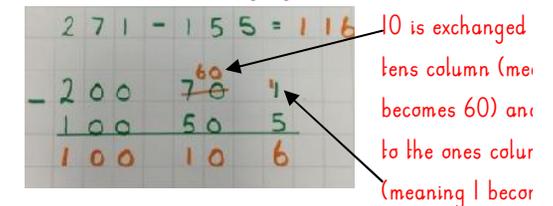
Children need to recognise pairs of numbers which total 100. e.g.  $32 + 68$

Children now need to split (partition) 3 digit numbers: hundreds, tens and ones. They should only work with numbers to 1000 at this stage. When possible, encourage children to use resources to improve their understanding. Packs of straws or pasta are a great way of representing 100. Children must learn to work from right to left with the ones column.



If the ones column totals more than 9, the extra 10 is written below the tens column as shown in the example. Likewise, if the tens column totals more than 90 the hundred would be written below the hundreds column.

### Exchanging



When subtracting, if there are not enough ones to subtract from children borrow from the column to the left. See example above.