Key Vocabulary

Number bonds:

Any pairs of numbers which add together to make another given number. Most commonly this will be the pairs of numbers which add together to total 10 (0+10, 1+9, 2+8, 3+7, 4+6, 5+5, 6+4, 7+3, 8+2, 9+1, 10+0)

Bridging through 10 / 100 etc:

When adding two digits together which when combined make a total greater than 10 / 100 etc. (3 + 8 = 11; you have bridged through 10 by adding 1 more) The same is true in reverse when subtracting

Partitioning:

Splitting a number apart into the values of each individual digit (342 = 300 + 40 +2)

Place Value:

What each digit in a number of two digits or more represents. (452 – The digit 4 in this number has a ***place value*** *of 400 or four hundreds, the digit 5 has a* ***place value*** *of 50 or five tens and the digit 2 has a* ***place value*** *of 2 units.*

Number sentence:

The written expression of any sum or problem using numbers only (7 + 3 = 10, 7+? = 10, 452 / 12 = ? are all examples of number sentences)

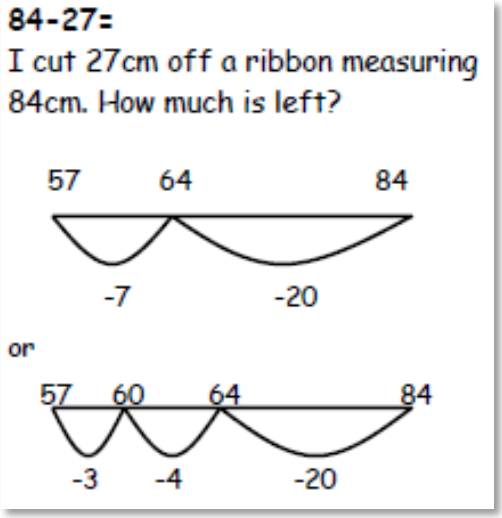
Mental maths:

Calculations or problems solved in a child's head without using the written methods of calculations. Mental maths can be supported by maths resources such as number lines, cubes, counting beads etc

Written methods for subtraction

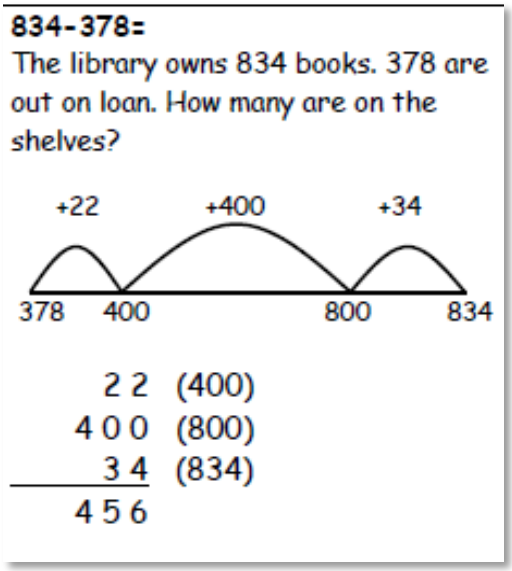
COUNTING BACK USING A NUMBER LINE

By using the number line to count back from a given number children will be able to clearly process and indicate the steps that they have taken. (*Start on 84. – 20. Then -7)* In order to do this, children will need to have a good understanding of **place value** and **partitioning** as well as how we **bridge through ten** in order to confidently navigate around the number line.



USING AN EMPTY NUMBERLINE AND COLUMN SUBTRACTION

Once children are confident with counting back using a number line they are able to move on to counting up using an empty number line (counting from the smallest number to the biggest). It is easiest to count to a multiple of 10 or 100. Once secure with recording on an empty number line children can record their steps vertically using the column method.



Written methods for addition:

During the course of Key Stage Two, children will be taught a rage of written methods for calculations that they cannot do 'in their heads'.

EXPANDED COLUMN METHOD

By using the **expanded column method** children will build on the **partitioning** skills used during mental calculations. It is very important that children do no move on to this method until their understanding of place value – what each digit in a number represents-is firm. The language used with the children is very important (6+7, 40 + 80, 500 + 400, then 900 + 120 + 13 *children would add this second step mentally NOT in columns)*

487+546=

There are 487 boys and 546 girls in a school. How many children are there altogether?

```
   5 4 6
 + 4 8 7
     1 3
   1 2 0
   9 0 0
 1 0 3 3
```

COMPACT COLUMN METHOD

When children are confident using the expanded method, this can then be 'squashed' into the traditional **compact column method.**

12 786 + 2 568=

12 786 people visited the museum last year. The numbers increased by 2 568 this year. How many people altogether visited this year?

```
  1 2 7 8 6
+   2 5 6 8
  1 5 3 5 4
    1 1 1
```