Calculation Methods KS2

Addition

When adding numbers that are more than 1 digit, children begin by using something called partitioning. We first add the highest place value working our way down. E.g. tens first then ones (units)

36 + 47=

30 + 40 = 70
6 + 7 = 13
70 + 13 = 83

236 + 547=

200 + 500 = 700
30 + 40 = 70
6 + 7 = 13
70 + 13 = 83

£1.20 + £4.87 =

£1 + £4 = £5
20p + 80p = £1
0 + 7p = 7p
£5 + £1 + 7p = £6.07

Once children are confident in partitioning, and have a solid understanding of place value, we will progress the children onto a new method called the 'expanded column' method.

36 + 47 = 83 236 + 547 = 783 £1.20 + £4.87 = £6.07

```
 36
 47
----
 13
 70
----
 83
```

```
 236
 547
-----
  13
  70
 700
-----
 783
```

```
 £1.20
 £4.87
------
    7
 £1.00
 £5.00
------
 £6.07
```

Children put the numbers above each other for this method. They work out the ones (or units) and write this answer in the correct column. Below they write the next answer etc.

In Year 3 children will not move onto the expanded column method until the Summer term if they are ready. ***In year 4*** most children will be expected to completed additions using this method.

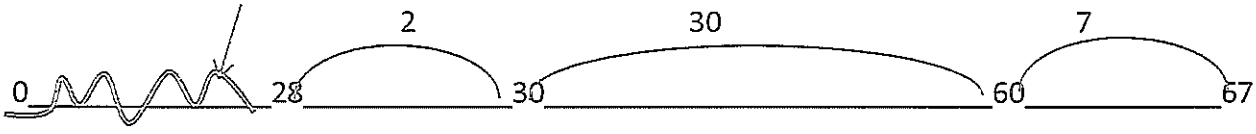
Subtraction

Subtraction is worked out on a number line. This helps children see the 'difference' as it is often referred to.

67 – 28 =

We take away the 28 first so now our number line starts with 28

We are now finding out how many are left (finding the difference.)



257 – 143 = 114

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 200  50   7
 100  40   3
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 100  10   4
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```

432 – 284 = 148

```
      100
 300   20   10
 400   30    2
 200   80    4
-----------
 100   40    8
```

The first calculation is reasonably easy. You **start from the ones**, taking away the bottom number from the top. The second is less straight forward. If it goes into negative numbers, you must ***take*** a ten or hundred from the next number.

Once children are secure with the 'counting on' aspect of subtraction on a number line, they will progress onto the 'expanded column method'. However this will only be introduced half way through ***year 4,*** to ensure children have a solid understanding of subtraction.

Multiplication

For multiplying numbers where one is above 1 digit, we use the grid method.

23 x 4

X	20	3
4	**80**	**12**

80 + 12 = 92

We add up our answers to find the final answer of our calculation.

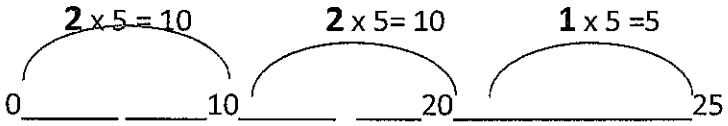
42 x 15

X	40	2
10	**400**	**20**
5	**200**	**10**

400 + 200 +20 + 10 = 630

Division

Division is another calculation worked out using a number line. If the calculation is 25 ÷ 5 we are saying *'How many 5s in 25'.* We look at what we know already e.g. 2 x 5, 5x5, 10x5 and use these on our number line.



We add up how many 5s we used to get to 25.

2 + 2 + 1 = **5**