Lyppard Grange Primary School – Progression in Calculation

Year 3

Addition

Column addition (1 expanded)

Children are taught to add in columns using the expanded method (putting the whole number in each column.)

342+156 =

300 + 40 + 2
+ 100 + 50 + 6
400 + 90 + 8 = 498

This method can be used to bridge 10 or 100.

342+186 =

300 + 40 + 2
+ 100 + 80 + 6
500 + 20 + 8 = 528
100

Subtraction

Decomposition (1 expanded)

73 – 27 = 46

70 + 3 becomes 60 +13
- 20 + 7 - 20 + 7
40 + 6 = 46

Multiplication

Grid method (1)

Children are taught to partition the 2 digit number and multiply the 2 parts by the single digit in grid form. They then add together the 2 separate part to get the combined total of the multiplication problem.

13 x 8 =

X	10	3
8	80	24

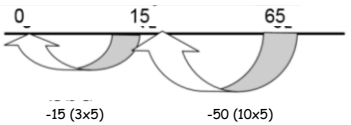
80 + 24 = 104

Division

Chunking (1 using a number line)

Children are taught the first stage in the chunking process by using the blank number line to subtract larger chunks when dividing.

65 ÷ 5 =



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Year 4

Addition

Column addition

Revisiting the expanded method where appropriate, children then move onto a formal method of column addition.

176 + 147 = 323

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

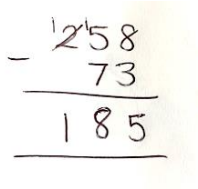
Use the language of place value to ensure understanding.

If children are confident, they can move onto column addition of 3 digit and 4 digit numbers.

Subtraction

Column subtraction

258 – 73 =



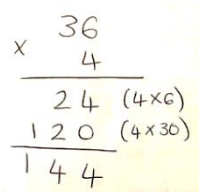
Children are taught to bridge 100, 10 or 1 by **exchanging** a hundred or ten.
Use the language of place value to ensure understanding.

When children are confident, develop with 4 digit numbers and decimals (in context of money and measures).

Multiplication

Expanded short multiplication

Children multiply 2 digit numbers by 1 digit numbers, using the expanded method.



Short multiplication

Children build on their knowledge of expanded method when using the formal method.

36 x 4 = 144

```
  3 6
x 4
1 4 4
  2
```

Short multiplication

Children multiply 3 digit numbers by 1 digit numbers, using the formal method.

```
  1 2 7
x   6
7 6 2
1 4
```

Division

Short division (2 formal)

Children use the formal method of division, with whole number answers.

98 ÷ 7 = 14

```
    1 4
7 ) 9 2 8
```

Children may draw a 'bus' to help them divide the first digit.