The Devonshire Hill PRIMARY SCHOOL – CALCULATION POLICY -YEAR 4

Where needed and when introducing new concepts children will have access to a wide range of practical resources, focussing on numicon, number squares and horizontal number lines to help them work out calculations and word problems.

ADDITION

Partition into tens and units and recombine

Either partition both numbers and recombine or partition the second number only:

e.g. 367 + 185 = 431
300 + 60 + 7
100 + 80 + 5
400 +140+12 =

Eg: 55 + 37 = 55 + 30 + 7
= 85 + 7
= 92

Adjusting

eg: 63 + 29 is the same as 63 + 30 – 1

extended column method

```
 367
+185
  12
 140
 400
 552
```

Extend to decimals in the context of money. (vertically)

e.g. £2.50 + £1.75 = £4.25

```
 £2.50
+£1.75
 £4.25
```

Number line

Children go to next multiple of 10 or 100, or add 10's. Partition skills can also be used.

326 + 48 =

+40 +4 +4

326 366 370 374

SUBTRACTION

Number line

754 – 86 = 668

```
600
+ 54
  14
668
```

+14 +600 +54

86 100 700 754

Column method

The children are introduced to vertical and horizontal expansion to help them record and work out a subtraction of two-digit and three digit numbers.

e.g. 468 - 246 =

1. Vertical

```
 468
-_246
   2
  20
 200
```

2. Horizontal

```
400  60  8
-200 40  6
200  20  2
```

Adjusting

Find a small difference by counting up. Children are given strategies to subtract a 'near multiple of 10' to or from a two or three digit number.

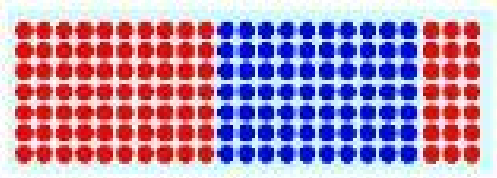
e.g. 500 – 179 =

is the same as 500 – 180 + 1 = 321

MULTIPLICATION

Partition use arrays.

e.g. 23×7=161



23 x 7 = (20 x 7)+ (3 x 7)
= 140 + 21
= 161

Grid method

Grid method: start by multiplying tu x tu, then htu x u & htu x tu

Estimate: 223 x7 is approximately 200 x 10 = 200

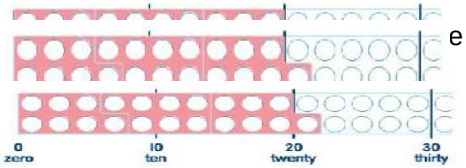
e.g.223 x 7 = 1561

```
1400
 140
+ 21
1561
```

Children work out calculations with missing numbers.

eg 8×7= or 63= 7×

Children must know and learn times tables and the inverse up to 9.



e these

An effective way to teach times table by using timetable songs on the Shared drive.
5 minutes times tables & inverse practice everyday.

DIVISION

Introduce chunking

Children are introduced to an informal recording method where they partition the dividend (what they are dividing) into multiples of the divisor (what they are dividing by).

e.g 72÷5 =

72 = 50 + 22

50 ÷ 5 = 10

22 ÷ 5 = 4r2 → 10 + 4r2 = 14 r 2

OR

```
72
-  50   (10×5)
   22
-  20   (4 ×5)
    2
```

72 → 50 + 22 → 10 + 4 r2

Answer : 14 remainder 2

Children also work out calculations with missing numbers.

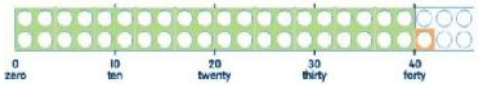
eg 72÷9= or 7= 49 ÷

Long Division

52 ÷ 4

```
  13
4 ) 52
    4
   12
   12
   00
```

Numicon can also be used to illustrate remainders by grouping.



Ensuring that the number sentences are easily divisible by a multiple, leaving a remainder

e.g: 21 ÷ 4 = 5 r 1