ADDITION

Children should extend the carrying method to numbers with at least four digits.

```
   587              3587
+  475           +   675
  1062             4262
   1 1              1 1 1
```

Using similar methods, children will:
✓   *add several numbers with different numbers of digits;*
✓   *begin to add two or more decimal fractions with up to three digits and the same number of decimal places;*
✓   *know that decimal points should line up under each other, particularly when adding or subtracting mixed amounts, e.g. 3.2 m – 280 cm.*

Children should extend the carrying method to number with any number of digits.

```
   7648             6584                42
+  1486          +  5848              6432
  9134            12432               786
   1 11            1 11                 3
                                    +  4681
                                      11944
                                       1 2 1
```

Using similar methods, children will
✓   *add several numbers with different numbers of digits;*
✓   *begin to add two or more decimal fractions with up to four digits and either one or two decimal places;*
✓   *know that decimal points should line up under each other, particularly when adding or subtracting mixed amounts, e.g. 401.2 + 26.85 + 0.71.*
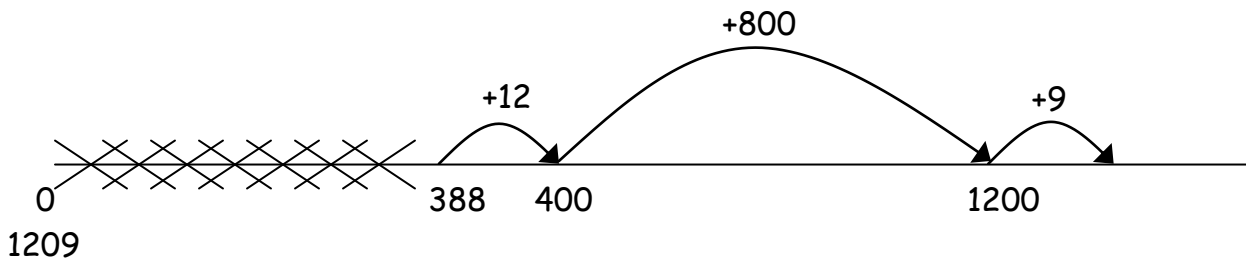
SUBTRACTION

Decomposition

```
        614 1
      7̶5̶4
    -  286
       468
```

Children should:
- ✓ *be able to subtract numbers with different numbers of digits;*
- ✓ *begin to find the difference between two decimal fractions with up to three digits and the same number of decimal places;*
- ✓ *know that decimal points should line up under each other.*

Where the numbers are involved in the calculation are close together or near to multiples of 10, 100 etc counting on using a number line should be used.

1209 – 388 = 821

Decomposition

```
        5 13 1
      6̶4̶67
    -  2684
       3783
```

Children should:

✓ *be able to subtract numbers with different numbers of digits;*
✓ *be able to subtract two or more decimal fractions with up to three
digits and either one or two decimal places;*
✓ *know that decimal points should line up under each other.*

Where the numbers are involved in the calculation are close together or near
to multiples of 10, 100 etc counting on using a number line should be used.

3002 – 1997 = 1005
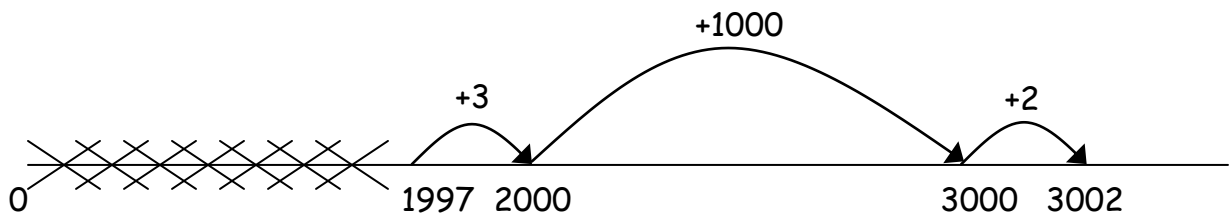
MULTIPLICATION

Grid method

HTU x U
(Short multiplication – multiplication by a single digit)

346 x 9

Children will approximate first
346 x 9 is approximately 350 x 10 = 3500

x	300	40	6
9	2700	360	54

```
  2700
+  360
+   54
  3114
  1 1
```

TU x TU
(Long multiplication – multiplication by more than a single digit)

72 x 38

Children will approximate first
72 x 38 is approximately 70 x 40 = 2800

x	70	2
30	2100	60
8	560	16

```
  2100
+  560
+   60
+   16
  2736
```

Using similar methods, they will be able to multiply decimals with one decimal place by a single digit number, approximating first. They should know that the decimal points line up under each other.

e.g. 4.9 x 3

Children will approximate first
4.9 x 3 is approximately 5 x 3 = 15

x	4	0.9
3	12	2.7

```
   12
+  2.7
  14.7
```

ThHTU x U
(Short multiplication – multiplication by a single digit)

4346 x 8

Children will approximate first
4346 x 8 is approximately 4346 x 10 = 43460

x	4000	300	40	6
8	32000	2400	320	48

$$
\begin{array}{r}
32000 \\
+\ \ 2400 \\
+\ \ \ \ 320 \\
+\ \ \ \ \ \ 48 \\
\hline
34768
\end{array}
$$

HTU x TU
(Long multiplication – multiplication by more than a single digit)

372 x 24

Children will approximate first
372 x 24 is approximately 400 x 25 = 10000

x	300	70	2
20	6000	1400	40
4	1200	280	8

$$
\begin{array}{r}
6000 \\
+\ 1400 \\
+\ 1200 \\
+\ \ 280 \\
+\ \ \ 40 \\
+\ \ \ \ \ 8 \\
\hline
8928
\end{array}
$$

Using similar methods, they will be able to multiply decimals with up to two decimal places by a single digit number and then two digit numbers, approximating first. They should know that the decimal points line up under each other.

For example:

4.92 x 3

Children will approximate first
4.92 x 3 is approximately 5 x 3 = 15

x	4	0.9	0.02
3	12	2.7	0.06

```
   12
+  0.7
+  0.06
  12.76
```

DIVISION

Children will continue to use written methods to solve short division TU ÷ U.

Children can start to subtract larger multiples of the divisor, e.g. 30x

Short division HTU ÷ U

196 ÷ 6

```
       32 r 4
   6 )  196
   -   180      30x
        16
   -    12      2x
         4
```

Answer :   32   remainder 4   or   32 r 4

Any remainders should be shown as integers, i.e. 14 remainder 2 or 14 r 2.

Children need to be able to decide what to do after division and round up or down accordingly. They should make sensible decisions about rounding up or down after division. For example 240 ÷ 52 is 4 remainder 32, but whether the answer should be rounded up to 5 or rounded down to 4 depends on the context.

Children will continue to use written methods to solve short division TU ÷ U and HTU ÷ U.

Long division HTU ÷ TU

972 ÷ 36

```
            27
      ───────────
  36 )  972
     -  720        20x
        252
     -  252         7x
          0
```

Answer :   27

Any remainders should be shown as fractions, i.e. if the children were dividing 32 by 10, the answer should be shown as $3\,^2/_{10}$ which could then be written as $3\,^1/_5$ in it's lowest terms.

Extend to decimals with up to two decimal places. Children should know that decimal points line up under each other.

87.5 ÷ 7

```
            12.5
       ───────────
   7 )   87.5
      -  70.0      10x
         17.5
      -  14.0       2x
          3.5
      -   3.5      0.5x
            0
```

Answer :   12.5