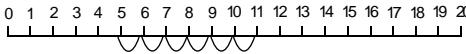# PROGRESSION IN WRITTEN SUBTRACTION

Pre-learning 1
Practical and informal written methods using concrete objects and pictorial representations
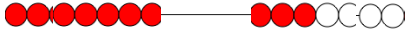
Practical subtraction
(see Models and Images poster)

Subtract one-digit numbers from two-digit numbers to 20, including zero:

11 - 6 = 5

14 - 7 = 7

Number sentences presented in different ways:

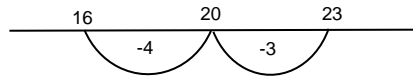20 - 3 = 17

9 = 17 - 8

7 = ☐ - 9

☐ - 5 = 8

Pre-learning 2
TU-U, TU-T & TU-TU using concrete objects, pictorial representations and mentally

Two-digit - ones
(model on a bead string, number line and hundred square)

23 - 7 = 23 - 3 - 4
= 16

Two-digit - tens
(model on a bead string, number line and hundred square)

Counting back in tens from different starting points:
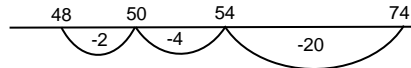73, 63, 53, 43, …
47, 37, 27, 17, 7, …

73 - 30 = 43
47 - 40 = 7

Two-digit - two-digit
(model on a bead string, number line and using base ten blocks)

Partition the second number, subtract the tens, subtract the units:

74 - 26 = 74 - 20 - 6
= 54 - 6
= 48

Column subtraction
(model using base ten blocks)

```
96 - 34 =      90   6
             -  30   4
                60   2  = 62
```
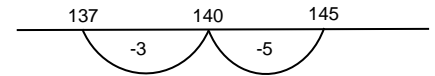
Y3
HTU-U, HTU-T, HTU-H & HTU-TU using concrete objects, pictorial representations and mentally, leading to a written method for HTU-HTU

Three-digit - ones
(model on a number line and using base ten blocks)

145 - 8 = 145 - 5 - 3
= 137

Three-digit - tens or hundreds
(model on a number line and using base ten blocks)

Counting back in tens or hundreds:
143, 133, 123, 113, 103, 93, …
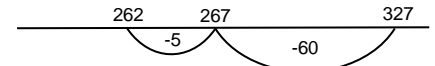835, 735, 635, 535, …

143 - 50 = 93
835 - 300 = 535

Three-digit - two-digit
(model on a number line and using base ten blocks)

Partition the smaller number, add the tens, add the units:

327 - 65 = 327 - 60 - 5
= 267 - 5
= 262

Three-digit - three-digit column subtraction
(model using base ten blocks)

```
                      50  15
465 - 248 =      400  6̶0   8̶
               -  200  40   8
                  200  10   7  = 217
```

Mental calculations
(model on a number line and using base ten blocks)

Find the difference between numbers that are close in value by counting up:
86-78
127-115
With money, find change by counting up:
£5.00-£3.85

Y4
Column written method for HTU-HTU & ThHTU-ThHTU

Column subtraction
(model using base ten blocks)

```
                  6 14 1
754 - 286 =       7̶5̶4̶
               -  286
                  468
```

Leading to larger numbers:

```
                  2  1 1
3124 - 1718 =     3̶1̶2̶4̶
               -  1718
                  1406
```

Money
(model using base ten blocks and coins)

```
                  8 1
£9.28 - £3.87 =   9̶.28
               -  3.87
                  £5.41
```

Mental calculations

Make decisions about when it is appropriate to calculate mentally (with jottings if necessary), and whether it is more efficient to add or subtract.

2008 – 1997 = 11 (count on from 1997)

3536 - 1300 = 3536 - 1000 - 300
= 4836

Y5
Column written method for numbers with more than 4 digits and decimals

Column subtraction

```
                    5 1  4 17 1
64583 - 7286 =      6̶4̶5̶8̶3̶
                 -   7286
                    57297
```

Decimals

```
                   7 1 9
68.04 - 14.78 =    6̶8̶.0̶4̶
                 - 14.78
                   53.26
```

Mental calculations

Make decisions about when it is appropriate to calculate mentally (with jottings if necessary), and whether it is more efficient to add or subtract.

£20.00 – £14.87 = £5.13 (count on from £14.87)

12462 - 2300 = 12462 - 2000 - 300
= 10162

Y6
Column written method for numbers with more than 4 digits and decimals

Practise the formal written method of columnar subtraction with larger numbers and decimals with differing numbers of decimal places, including some numbers that contain a 0.

Practise making decisions about when it is more appropriate to use a mental method, and whether to add or subtract.