STRATEGIES AND METHODS OF MENTAL ADDITION

YEAR 3

Using place value

Count in 100s

  e.g. *Know 475 + 200 as 475, 575, 675*

350 375 400 425 450 475 500 525 550 575 600 625 650 675 700 725
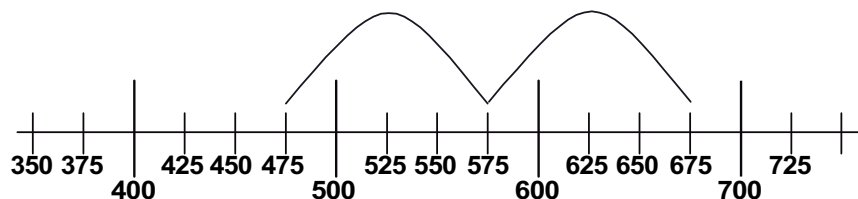
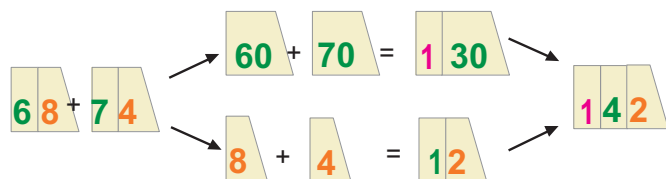Add multiples of 10, 100 and £1

  e.g. *746 + 200*

  e.g. *746 + 40*

  e.g. *£6·34 + £5 as £6 + £5 and 34p*

Partitioning

  e.g. *£8·50 + £3·70 as £8 + £3 and 50p + 70p and combine the totals: £11 + £1·20*

  e.g. *347 + 36 as 300 and 40 + 30 and 7 + 6 and combine the totals: 370 + 13 = 383*

  e.g. *68 + 74 as 60 + 70 and 8 + 4 and combine the totals: 130 + 12 = 142*

YEAR 4

Using place value

Count in 1000s

  e.g. *Know 3475 + 2000 as 3475, 4475, 5475*

Partitioning

  e.g. *746 + 40*

  e.g. *746 + 203 as 700 + 200 and 40 and 6 + 3*

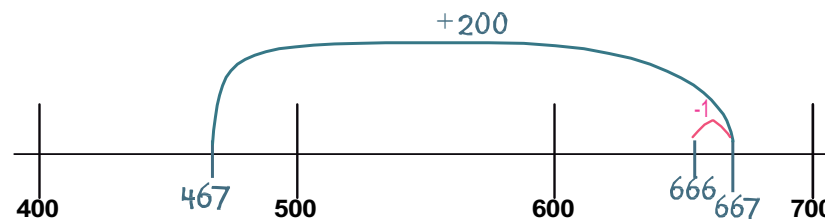 e.g. *134 + 707 as 100 + 700 and 30 and 4 + 7*

Counting on

Add 2-digit numbers to 2-, 3- and 4-digit numbers by adding the multiple of 10 then the 1s

  e.g. *167 + 55 as 167 + 50 (217) + 5 = 222*

Add near multiples of 10, 100 and 1000

  e.g. *467 + 199*

  e.g. *3462 + 2999*

+200

400 467 500 600 666 667 700
-1

Count on to add 3-digit numbers and money

  e.g. *463 + 124 as 463 + 100 (563) + 20 (583) + 4 = 587*

  e.g. *£4·67 + £5·30 as £9·67 + 30p*

STRATEGIES AND METHODS OF MENTAL ADDITION

YEAR 3

Counting on

Add two 2-digit numbers by adding the multiple of 10, then the 1s

  e.g. *67 + 55 as 67 + 50 (117) + 5 = 122*

Add near multiples of 10 and 100

  e.g. *67 + 39*

  e.g. *364 + 199*

Add pairs of 3-digit numbers

  e.g. *548 + 120*

Count on from 3-digit numbers

  e.g. *247 + 34 as 247 + 30 (277) + 4 = 281*

Using number facts

Know pairs which total each number to 20

  e.g. *7 + 8 = 15*

  e.g. *12 + 6 = 18*

Number bonds to 100

  e.g. *35 + 65*

  e.g. *46 + 54*

  e.g. *73 + 27*

Add to the next 10 and the next 100

  e.g. *176 + 4 = 180*

  e.g. *435 + 65 = 500*
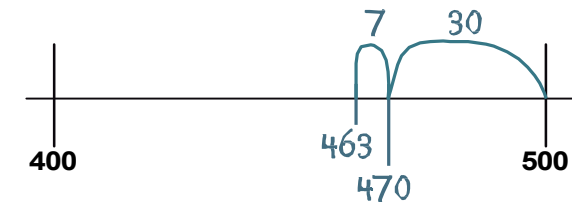
YEAR 4

Using number facts

Number bonds to 100 and to the next multiple of 100

  e.g. *288 + 12 = 300*

  e.g. *1353 + 47 = 1400*

  e.g. *463 + 37 = 500*

Number bonds to £1 and to the next whole pound

  e.g. *63p + 37p = £1*

  e.g. *£3·45 + 55p = £4*

Add to the next whole number

  e.g. *4·6 + 0·4*

  e.g. *7·2 + 0·8*

STRATEGIES AND METHODS OF WRITTEN ADDITION

⭐ **INSPIRE** our children to succeed
⭐ **CREATE** excitement for learning
⭐ **ACHIEVE EXCELLENCE**

YEAR 3

Build on partitioning to develop expanded column addition with two 3-digit numbers

e.g. *466 + 358*

```
    400   60   6
 +  300   50   8
    700   110  14  = 824
```

Use expanded column addition where digits in a column add to more than the column value

e.g. *466 + 358*

```
    400    60    6
 +  300    50    8
    800    20    4
    100    10
```

Compact column addition with two or more 3-digit numbers or towers of 2-digit numbers

e.g. *347 + 286 + 495*

```
    347
    286
 +  495
   1128
    1 2 1
```

Compact column addition with 3- and 4-digit numbers
Recognise like fractions that add to 1

e.g. *1/4 + 3/4*

e.g. *3/5 + 2/5*

YEAR 4

Build on expanded column addition to develop compact column addition with larger numbers

e.g. *1466 + 4868*

```
    1000   400   60   6
 +  4000   800   50   8
    6000   300   30   4
    1000   100   10
```

Compact column addition with larger numbers

e.g. *5347 + 2286 + 1495*

```
    5347
    2286
 +  1495
    9128
     1 2 1
```

Use expanded and compact column addition to add amounts of money
Add like fractions

e.g. *3/8 + 1/8 + 1/8*

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YEAR 5

Using place value

Count in 0·1s, 0·01s

e.g. *Know what 0·1 more than 0·51 is*

10s	1s	0·1s	0·01s
	0	5	1

Partitioning

e.g. *2·4 + 5·8 as 2 + 5 and 0·4 + 0·8 and combine the totals: 7 + 1·2 = 8·2*

0·1	0·2	0·3	0·4	0·5	0·6	0·7	0·8	0·9	1
1·1	1·2	1·3	1·4	1·5	1·6	1·7	1·8	1·9	2
2·1	2·2	2·3	2·4	2·5	2·6	2·7	2·8	2·9	3
3·1	3·2	3·3	3·4	3·5	3·6	3·7	3·8	3·9	4
4·1	4·2	4·3	4·4	4·5	4·6	4·7	4·8	4·9	5
5·1	5·2	5·3	5·4	5·5	5·6	5·7	5·8	5·9	6
6·1	6·2	6·3	6·4	6·5	6·6	6·7	6·8	6·9	7
7·1	7·2	7·3	7·4	7·5	7·6	7·7	7·8	7·9	8
8·1	8·2	8·3	8·4	8·5	8·6	8·7	8·8	8·9	9
9·1	9·2	9·3	9·4	9·5	9·6	9·7	9·8	9·9	10

YEAR 6

Using place value

Count in 0·1s, 0·01s, 0·001s

e.g. *Know what 0·001 more than 6·725 is*

Partitioning

e.g. *9·54 + 3·23 as 9 + 3, 0·5 + 0·2 and 0·04 + 0·03, to give 12·77*

Counting on

Add two decimal numbers by adding the 1s, then the 0·1s/0·01s/0·001s

e.g. *6·314 + 3·006 as 6·314 + 3 (9·314) + 0·006 = 9·32*

Add near multiples of 1

e.g. *6·345 + 0·999*

e.g. *5·673 + 0·9*

Count on from large numbers e.g.

16 375 + 12 003 as 28 375 + 3

YEAR 5

Counting on

Add two decimal numbers by adding the 1s, then the 0·1s/0·01s

  e.g. *5·72 + 3·05 as 5·72 + 3 (8·72) + 0·05 = 8·77*

Add near multiples of 1

  e.g. *6·34 + 0·99*

  e.g. *5·63 + 0·9*
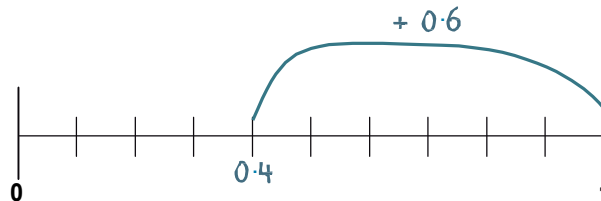
Count on from large numbers

  e.g. *6834 + 3005 as 9834 + 5*

Using number facts

Number bonds to 1 and to the next whole number

  e.g. *5·7 + 0·3*

  e.g. *0·4 + 0·6*

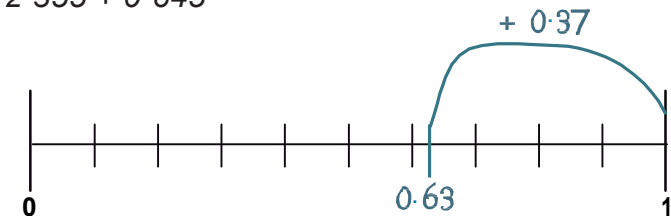Add to the next 10 from a decimal number

  e.g. *7·8 + 2·2 = 10*

YEAR 6

Using number facts

Number bonds to 1 and to the next multiple of 1

  e.g. *0·63 + 0·37*

  e.g. *2·355 + 0·645*

Add to the next 10

  e.g. *4·62 + 5·38*

STRATEGIES AND METHODS OF WRITTEN ADDITION

⭐ **INSPIRE** our children to succeed
⭐ **CREATE** excitement for learning
⭐ **ACHIEVE EXCELLENCE**

YEAR 5

Expanded column addition for money leading to compact column addition for adding several amounts of money

e.g. *£14·64 + £28·78 + £12·26*

```
    £14    60p    4p
    £28    70p    8p
+   £12    20p    6p
    £55    60p    8p
    £1     10p
```

Compact column addition to add pairs of 5-digit numbers

Continue to use column addition to add towers of several larger numbers

Use compact addition to add decimal numbers with up to 2 decimal places

e.g. *15·68 + 27·86*

```
    15.68
+   27.86
    43.54
    11.1
```

Add related fractions

e.g. *3/4 + 1/8 = 7/8*

YEAR 6

Compact column addition for adding several large numbers and decimal numbers with up to 2 decimal places

Compact column addition with money

e.g. *£14·64 + £28·78 + £12·26*

```
    £14.64
    £28.78
+   £12.26
    £55.68
    11.1
```

Add unlike fractions, including mixed numbers

e.g. *1/4 + 2/3 = 11/12*

e.g. *2 1/4 + 1 1/3 = 3 7/12*

STRATEGIES AND METHODS OF MENTAL SUBTRACTION

★ **INSPIRE** our children to succeed
★ **CREATE** excitement for learning
★ **ACHIEVE EXCELLENCE**

YEAR 3

Taking away

Use place value to subtract

  e.g. *348 – 300*

  e.g. *348 – 40*

  e.g. *348 – 8*

3 4 8

Take away multiples of 10, 100 and £1

  e.g. *476 – 40 = 436*

  e.g. *476 – 300 = 176*

  e.g. *£4·76 – £2 = £2·76*

Partitioning

  e.g. *68 – 42 as 60 – 40 and 8 – 2*

  e.g. *£6·84 – £2·40 as £6 – £2 and 80p – 40p*

YEAR 4

Taking away

Use place value to subtract

  e.g. *4748 – 4000*

4 7 4 8

Take away multiples of 10, 100, 1000, £1, 10p or 0·1
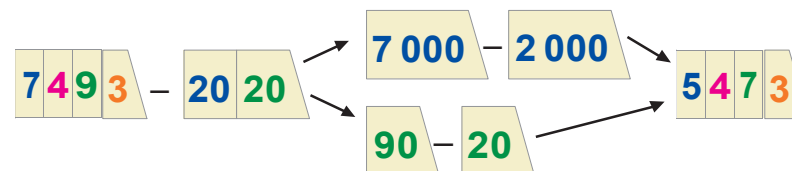
  e.g. *8392 – 50*

  e.g. *6723 – 3000*

  e.g. *£3·74 – 30p*

e.g. *5·6 – 0·2*

Partitioning

  e.g. *£5·87 – £3·04 as £5 – £3 and 7p – 4p*

  e.g. *7493 – 2020 as 7000 – 2000 and 90 – 20*

7 4 9 3 – **20 20** → **7 000** – **2 000** → **5 4 7 3**

90 – **20** →

Count back

  e.g. *6482 – 1301 as 6482 – 1000 (5482) – 300 (5182) – 1 = 5181*

Subtract near multiples of 10, 100, 1000 or £1

  e.g. *3522 – 1999*

  e.g. *£34·86 – £19·99*

STRATEGIES AND METHODS OF MENTAL SUBTRACTION
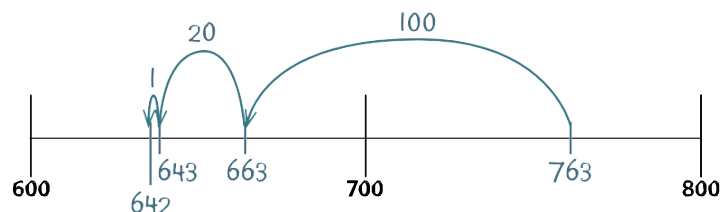
INSPIRE our children to succeed
CREATE excitement for learning
ACHIEVE EXCELLENCE

YEAR 3

Count back in 100s, 10s then 1s

e.g. *763 – 121 as 763 – 100 (663) – 20 (643) – 1 = 642*
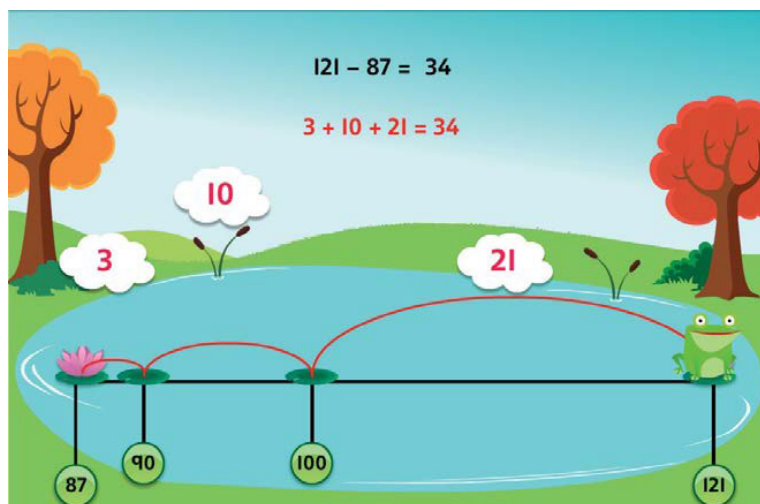

Subtract near multiples of 10 and 100
e.g. *648 – 199*
e.g. *86 – 39*

Counting up

Find a difference between two numbers by counting up from the smaller to the larger
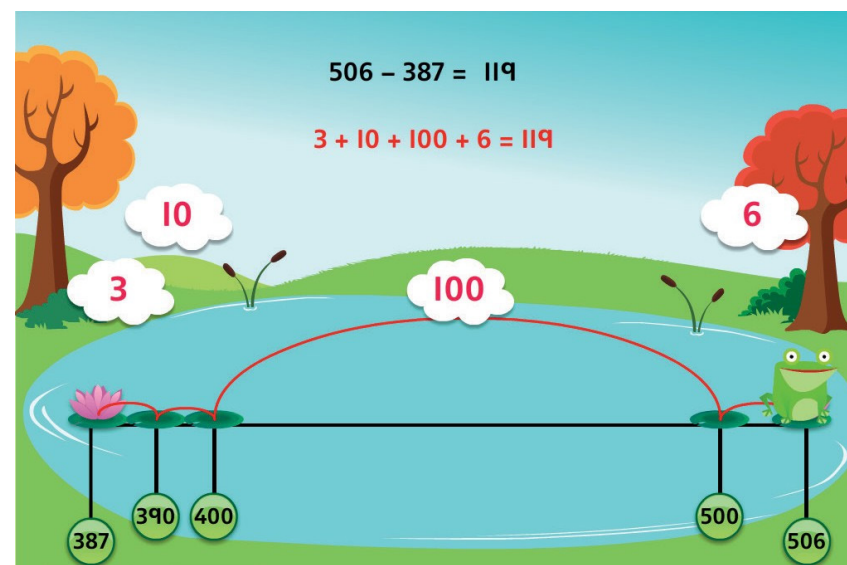
e.g. *121 – 87*

YEAR 4

Counting up

Find a difference between two numbers by counting up from the smaller to the larger

e.g. *506 – 387*
e.g. *4000 − 2693*

YEAR 3

Using number facts

Know pairs which total each number to 20

e.g. *20 − 14 = 6*

Number bonds to 100

e.g. *100 − 48 = 52*

e.g. *100 − 35 = 65*

Subtract using number facts to bridge back through a 10
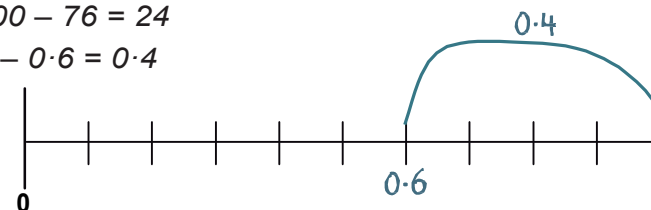
e.g. *42 − 5 = 42 − 2 (40) − 3 = 37*

YEAR 4

Using number facts

Number bonds to 10 and 100 and derived facts

e.g. *100 − 76 = 24*

e.g. *1 − 0·6 = 0·4*

Number bonds to £1 and £10
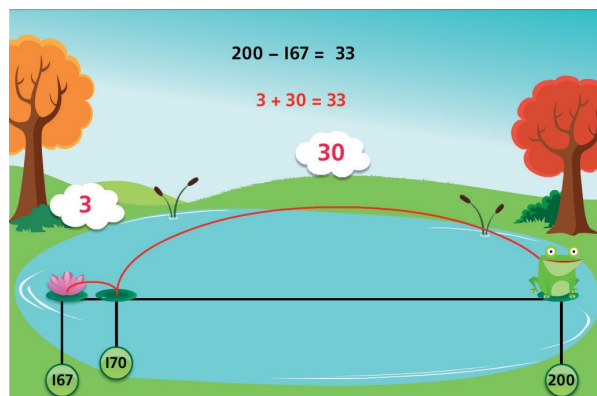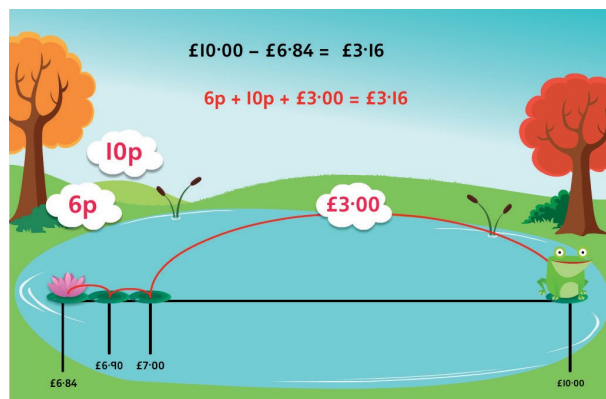
e.g. *£1·00 − 86p = 14p*

e.g. *£10·00 − £3·40 = £6·60*

STRATEGIES AND METHODS OF WRITTEN SUBTRACTION

★ INSPIRE our children to succeed
★ CREATE excitement for learning
★ ACHIEVE EXCELLENCE

YEAR 3

Develop counting up subtraction
e.g. *200 – 167*

200 – 167 = 33
3 + 30 = 33
30
3
167   170   200

Use counting up subtraction to find change from £1, £5 and £10
e.g. *£10·00 – £6·84*

£10·00 – £6·84 = £3·16
6p + 10p + £3·00 = £3·16
10p
6p   £3·00
£6·84   £6·90 £7·00   £10·00

Recognise complements of any fraction to 1
– – e.g. *1 – 1/4 = 3/4*
– – e.g. *1 – 3/5 = 2/5*

YEAR 4

Expanded column subtraction with 3- and 4-digit numbers
e.g. *726 – 358*

$$
\begin{array}{rrr}
 & {}^{1}10 & 1 \\
700 & \cancel{20} & \cancel{6} \\
- \quad 300 & 50 & 8 \\
\hline
300 & 60 & 8 \\
\end{array}
$$

Begin to develop compact column subtraction
e.g. *726 – 358*

$$
\begin{array}{rrr}
6 & {}^{1}1 & 1 \\
\cancel{7} & \cancel{2} & \cancel{6} \\
- \quad 3 & 5 & 8 \\
\hline
3 & 6 & 8 \\
\end{array}
$$

Use counting up subtraction to find change from £10, £20, £50 and £100
e.g. *Buy a computer game for £34·75 using £50*

5p   20p   £5   £10
£34·75   £34·80   £35   £40   £50
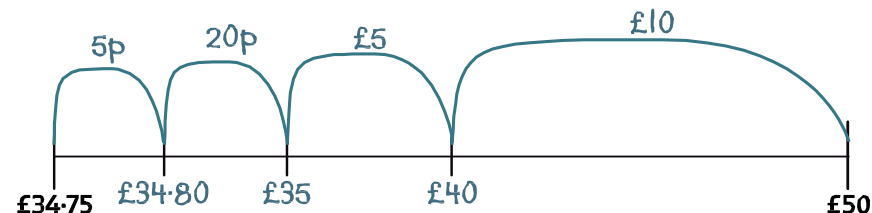
Subtract like fractions
– – – e.g. *3/8 – 1/8 = 2/8*

STRATEGIES AND METHODS OF MENTAL SUBTRACTION

INSPIRE our children to succeed
CREATE excitement for learning
ACHIEVE EXCELLENCE

YEAR 5

Taking away

Use place value to subtract decimals
 e.g. *4·58 – 0·08*
 e.g. *6·26 – 0·2*

Take away multiples of powers of 10
 e.g. *15 672 – 300*
 e.g. *4·82 – 2* e.g. *2·71 – 0·5*
 e.g. *4·68 – 0·02*

Partitioning or counting back
 e.g. *3964 – 1051*
 e.g. *5·72 – 2·01*

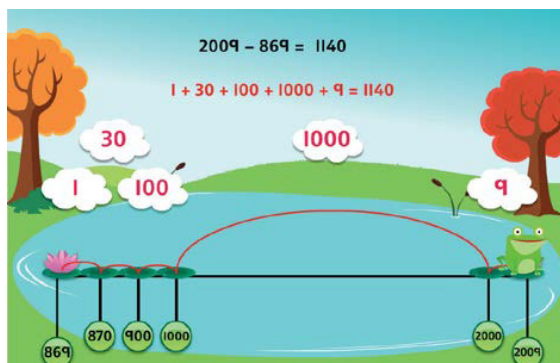Subtract near multiples of 1, 10, 100, 1000, 10 000 or £1
 e.g. *86 456 – 9999*
 e.g. *3·58 – 1·99*

Counting up

Find a difference between two numbers by counting up from the smaller to the larger
 e.g. *£12·05 − £9·59*
 e.g. *2009 – 869*

YEAR 6

Taking away

Use place value to subtract decimals
 e.g. *7·782 – 0·08*
 e.g. *16·263 – 0·2*

Take away multiples of powers of 10
 e.g. *132 956 – 400*
 e.g. *686 109 – 40 000*
 e.g. *7·823 – 0·5*

Partitioning or counting back
 e.g. *3964 – 1051*
 e.g. *5·72 – 2·01*

Subtract near multiples of powers of 10
 e.g. *360 078 – 99 998*
 e.g. *12·831 – 0·99*

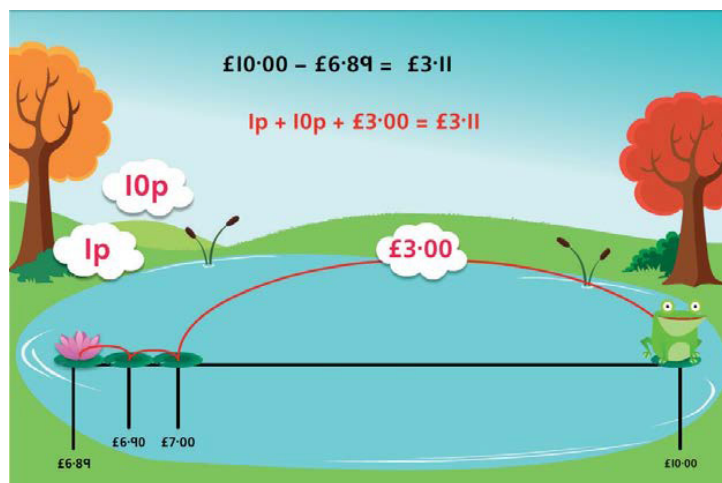## STRATEGIES AND METHODS OF MENTAL SUBTRACTION

INSPIRE our children to succeed
CREATE excitement for learning
ACHIEVE EXCELLENCE

YEAR 5

Find change using shopkeepers' addition
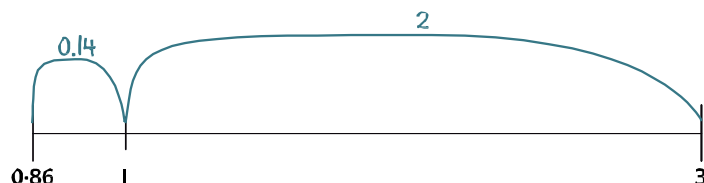 e.g. *Buy a toy for £6·89 using £10·00*

$$£10·00 - £6·89 = £3·11$$
$$1p + 10p + £3·00 = £3·11$$

Find a difference between two amounts of money by counting up

Using number facts

Derived facts from number bonds to 10 and 100
  e.g. *2 – 0·45 using 45 + 55 = 100*
  e.g. *3 – 0·86 using 86 + 14 = 100*

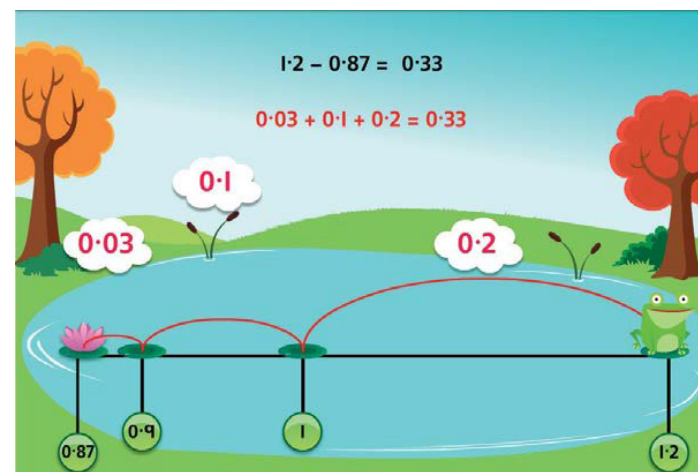Number bonds to £1, £10 and £100
  e.g. *£4·00 – £3·86*
  e.g. *£100 – £66 using 66 + 34 = 100*

YEAR 6

Counting up

Find a difference between two decimal numbers by counting up from the smaller to the larger
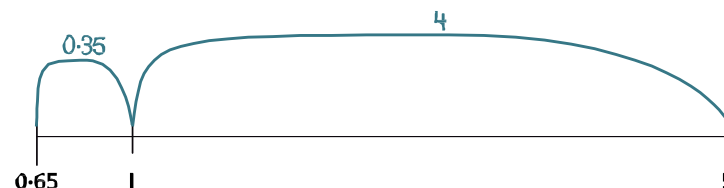 e.g. *1·2 – 0·87*

$$1·2 - 0·87 = 0·33$$
$$0·03 + 0·1 + 0·2 = 0·33$$

Using number facts

Derived facts from number bonds to 10 and 100
  e.g. *0·1 – 0·075 using 75 + 25 = 100*
  e.g. *5 – 0·65 using 65 + 35 = 100*

Number bonds to £1, £10 and £100
  e.g. *£7·00 – £4·37*
  e.g. *£100 – £66·20 using 20p + 80p = £1 and £67 + £33 = £100*