

**Ysgol Cynfran Llysfaen
Numeracy
Overview of Strategies and
Methods for
Addition and Subtraction**

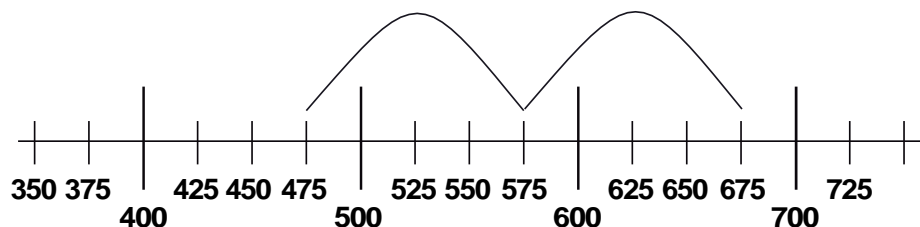
Addition

Year 3

Using place value

Count in 100s

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



Add multiples of 10, 100 and £1

e.g. $746 + 200$

e.g. $746 + 40$

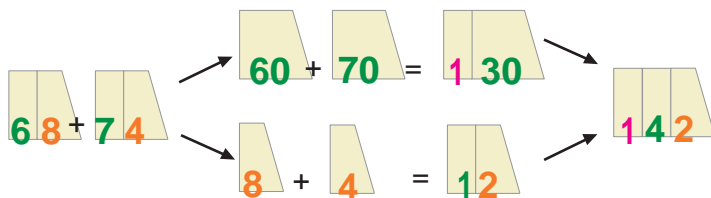
e.g. $£6.34 + £5$ as $£6 + £5$ and 34p

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

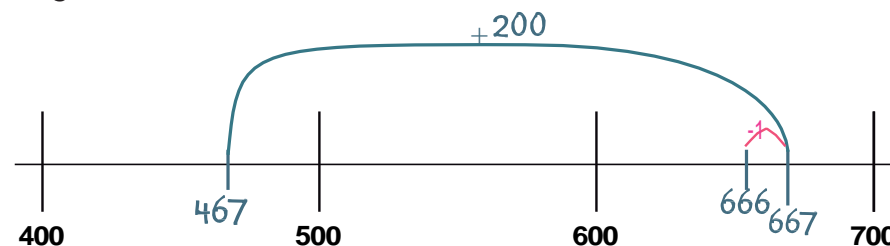
Add 2-digit numbers to 2-, 3- and 4-digit numbers by adding the multiple of 10 then the 1s

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

Add near multiples of 10, 100 and 1000

e.g. $467 + 199$

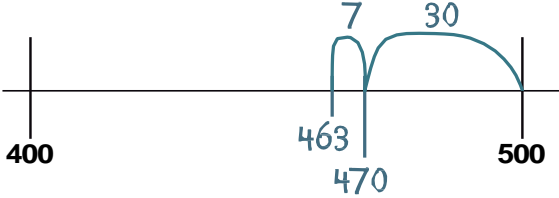
e.g. $3462 + 2999$



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 $£9.67 + 30p$

	Year 3	Year 4
Mental Addition	<p>Counting on</p> <p>Add two 2-digit numbers by adding the multiple of 10, then the 1s e.g. $67 + 55$ as $67 + 50$ (117) $+ 5 = 122$</p> <p>Add near multiples of 10 and 100 e.g. $67 + 39$ e.g. $364 + 199$</p> <p>Add pairs of ‘friendly’ 3-digit numbers e.g. $548 + 120$</p> <p>Count on from 3-digit numbers e.g. $247 + 34$ as $247 + 30$ (277) $+ 4 = 281$</p> <p>Using number facts</p> <p>Know pairs which total each number to 20 e.g. $7 + 8 = 15$ e.g. $12 + 6 = 18$</p> <p>Number bonds to 100 e.g. $35 + 65$ e.g. $46 + 54$ e.g. $73 + 27$</p> <hr/> <p>Add to the next 10 and the next 100 e.g. $176 + 4 = 180$ e.g. $435 + 65 = 500$</p>	<p>Using number facts</p> <p>Number bonds to 100 and to the next multiple of 100 e.g. $288 + 12 = 300$ e.g. $1353 + 47 = 1400$ e.g. $463 + 37 = 500$</p>  <p>Number bonds to £1 and to the next whole pound e.g. $63p + 37p = \text{£}1$ e.g. $\text{£}3.45 + 55p = \text{£}4$</p> <p>Add to the next whole number e.g. $4.6 + 0.4$ e.g. $7.2 + 0.8$</p>

	Year 3	Year 4
Written Addition	<p>Build on partitioning to develop expanded column addition with two 3-digit numbers e.g. $466 + 358$</p> $\begin{array}{r} 400 \quad 60 \quad 6 \\ + 300 \quad 50 \quad 8 \\ \hline 700 \quad 110 \quad 14 = 824 \end{array}$	<p>Build on expanded column addition to develop compact column addition with larger numbers e.g. $1466 + 4868$</p> $\begin{array}{r} 1000 \quad 400 \quad 60 \quad 6 \\ 4000 \quad 800 \quad 60 \quad 8 \\ + 1000 \quad 100 \quad 10 \\ \hline 6000 \quad 300 \quad 30 \quad 4 \end{array}$
	<p>Use expanded column addition where digits in a column add to more than the column value e.g. $466 + 358$</p> $\begin{array}{r} 400 \quad 60 \quad 6 \\ 300 \quad 50 \quad 8 \\ + 100 \quad 10 \\ \hline 800 \quad 20 \quad 4 \end{array}$	<p>Compact column addition with larger numbers e.g. $5347 + 2286 + 1495$</p> $\begin{array}{r} 5347 \\ 2286 \\ + 1495 \\ \hline 9128 \end{array}$
	<p>Compact column addition with two or more 3-digit numbers or towers of 2-digit numbers e.g. $347 + 286 + 495$</p> $\begin{array}{r} 347 \\ 286 \\ + 495 \\ 21 \\ \hline 1128 \end{array}$	<p>Use expanded and compact column addition to add amounts of money Add like fractions - - - e.g. $\frac{3}{8} + \frac{1}{8} + \frac{1}{8}$</p>
	<p>Compact column addition with 3- and 4-digit numbers Recognise like fractions that add to 1 e.g. $\frac{1}{4} + \frac{3}{4}$ - - e.g. $\frac{3}{5} + \frac{2}{5}$ - -</p>	

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) + $0.006 = 9.32$

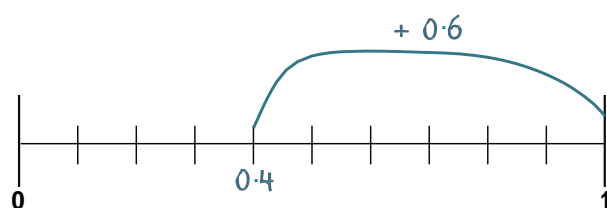
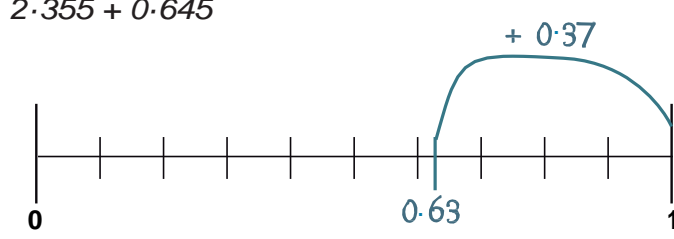
Add near multiples of 1

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	Year 6
Mental Addition	<p>Counting on</p> <p>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) $+ 0.05 = 8.77$</p> <p>Add near multiples of 1 e.g. $6.34 + 0.99$ e.g. $5.63 + 0.9$</p> <p>Count on from large numbers e.g. $6834 + 3005$ as $9834 + 5$</p> <p>Using number facts</p> <p>Number bonds to 1 and to the next whole number e.g. $5.7 + 0.3$ e.g. $0.4 + 0.6$</p>  <p>Add to the next 10 from a decimal number e.g. $7.8 + 2.2 = 10$</p>	<p>Using number facts</p> <p>Number bonds to 1 and to the next multiple of 1 e.g. $0.63 + 0.37$ e.g. $2.355 + 0.645$</p>  <p>Add to the next 10 e.g. $4.62 + 5.38$</p>

	Year 5	Year 6
Written Addition	<p>Expanded column addition for money leading to compact column addition for adding several amounts of money e.g. £14.64 + £28.78 + £12.26</p> $ \begin{array}{r} \text{£}14 \quad 60\text{p} \quad 4\text{p} \\ \text{£}28 \quad 70\text{p} \quad 8\text{p} \\ + \quad \text{£}12 \quad 20\text{p} \quad 6\text{p} \\ \quad \text{£}1 \quad 10\text{p} \\ \hline \text{£}55 \quad 60\text{p} \quad 8\text{p} \end{array} $	<p>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</p> $ \begin{array}{r} \text{£}14.64 \\ + \text{£}28.78 \\ \text{£}12.26 \\ \hline \text{£}55.68 \end{array} $
	<p>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</p> $ \begin{array}{r} 15.68 \\ + 27.86 \\ \hline 43.54 \end{array} $	<p>Add unlike fractions, including mixed numbers</p> <p>- - - e.g. $\frac{1}{4} + \frac{2}{3} = \frac{11}{12}$ - - - e.g. $2 \frac{1}{4} + 1 \frac{1}{3} = 3 \frac{7}{12}$</p>
	<p>Add related fractions - - - e.g. $\frac{3}{4} + \frac{1}{8} = \frac{7}{8}$</p>	

Subtraction

Year 3

Taking away

Use place value to subtract

e.g. $348 - 300$

e.g. $348 - 40$

e.g. $348 - 8$



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. $4748 - 4000$



Take away multiples of 10, 100, 1000, £1, 10p or 0.1

e.g. $8392 - 50$

e.g. $6723 - 3000$

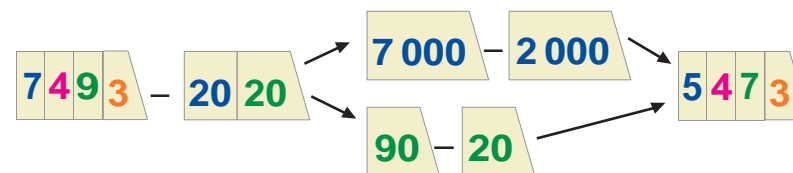
e.g. $£3.74 - 30p$

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 $90 - 20$



Count back

e.g. $6482 - 1301$ as $6482 - 1000 (5482) - 300 (5182) - 1 = 5181$

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

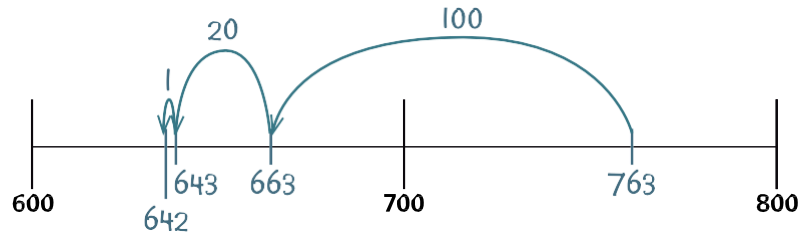
e.g. $3522 - 1999$

e.g. $£34.86 - £19.99$

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

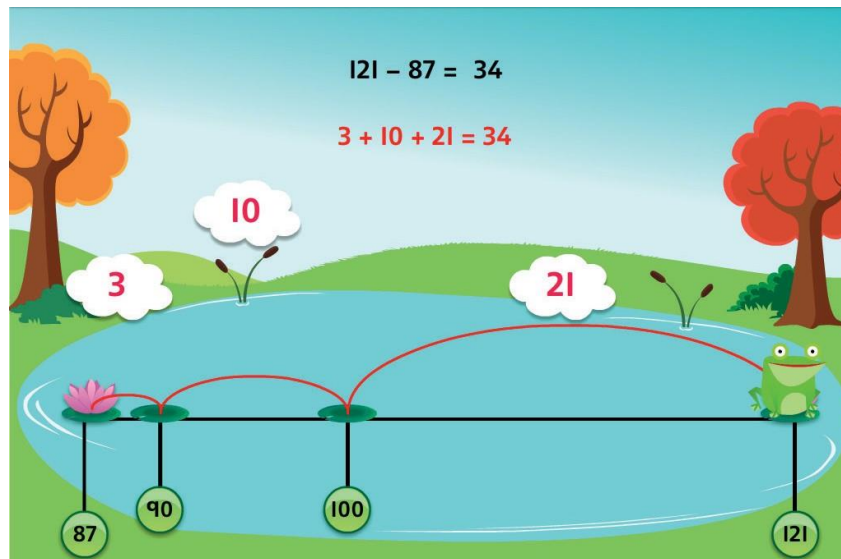
e.g. $648 - 199$

e.g. $86 - 39$

Counting up

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

e.g. $121 - 87$



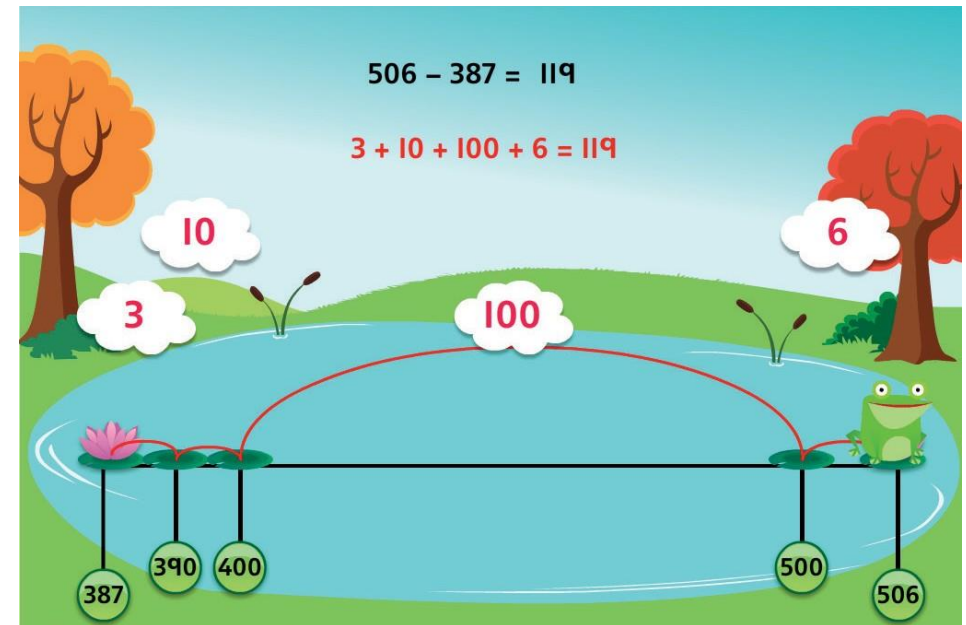
Year 4


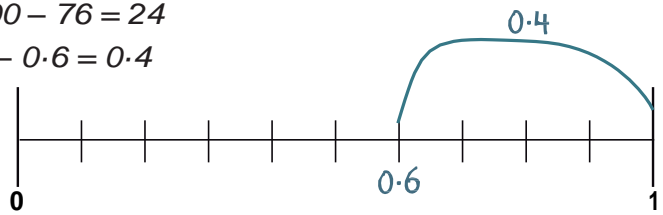
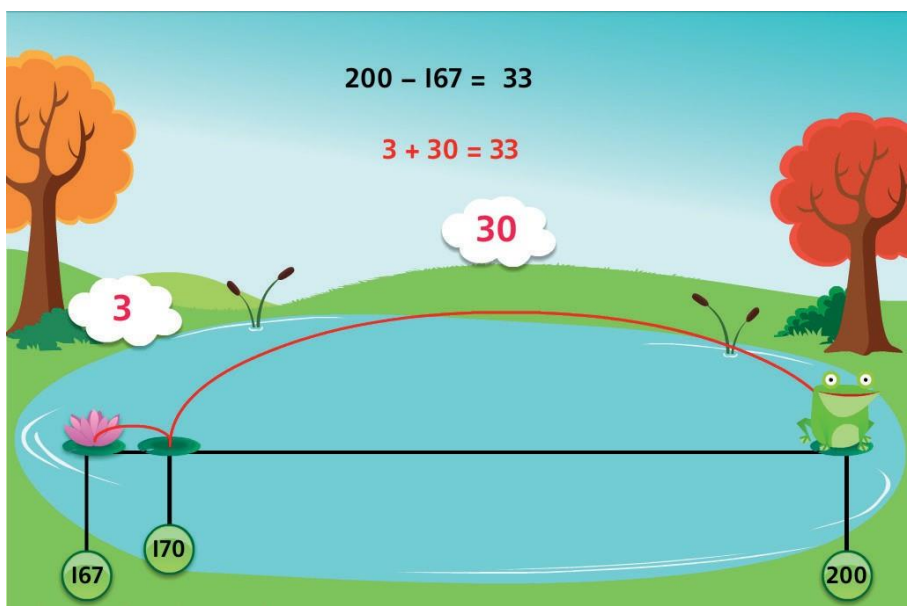
Counting up

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

e.g. $506 - 387$

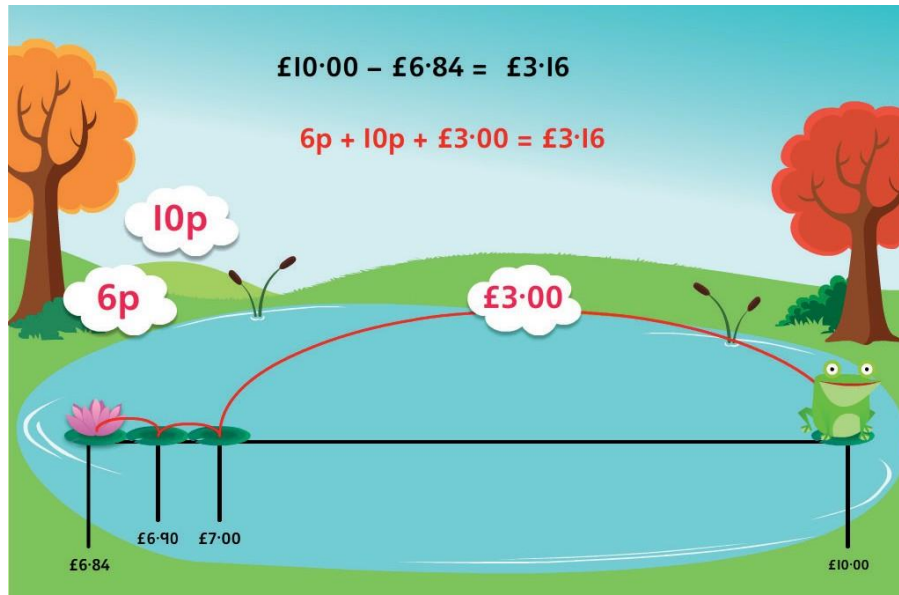
e.g. $4000 - 2693$



	Year 3	Year 4
Mental Subtraction	<p>Using number facts</p> <p>Know pairs which total each number to 20 e.g. $20 - 14 = 6$</p> <p>Number bonds to 100 e.g. $100 - 48 = 52$ e.g. $100 - 35 = 65$</p>  <p>Subtract using number facts to bridge back through a 10 e.g. $42 - 5 = 42 - 2 (40) - 3 = 37$</p>	<p>Using number facts</p> <p>Number bonds to 10 and 100 and derived facts e.g. $100 - 76 = 24$ e.g. $1 - 0.6 = 0.4$</p>  <p>Number bonds to £1 and £10 e.g. $£1.00 - 86p = 14p$ e.g. $£10.00 - £3.40 = £6.60$</p>
	<p>Develop counting up subtraction e.g. $200 - 167$</p> 	<p>Expanded column subtraction with 3- and 4-digit numbers e.g. $726 - 358$</p> $\begin{array}{r} 600 \quad 110 \quad 16 \\ \cancel{700} \quad \cancel{20} \quad \cancel{6} \\ - 300 \quad 50 \quad 8 \\ \hline 300 \quad 60 \quad 8 \end{array}$ <p>Begin to develop compact column subtraction e.g. $726 - 358$</p> $\begin{array}{r} 6 \quad 11 \quad 16 \\ \cancel{7} \quad \cancel{2} \quad \cancel{6} \\ - 3 \quad 5 \quad 8 \\ \hline 3 \quad 6 \quad 8 \end{array}$

Year 3

Use counting up subtraction to find change from £1, £5 and £10
e.g. $£10.00 - £6.84$



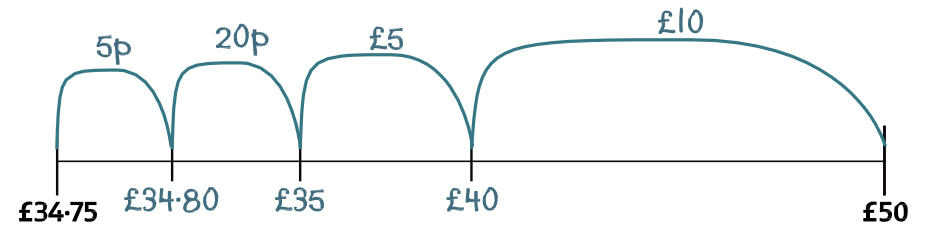
Recognise complements of any fraction to 1

- - e.g. $1 - 1/4 = 3/4$
- - e.g. $1 - 3/5 = 2/5$

Year 4

Use counting up subtraction to find change from £10, £20, £50 and £100

e.g. Buy a computer game for £34.75 using £50



Subtract like fractions

- - - e.g. $3/8 - 1/8 = 2/8$

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. $86\,456 - 9999$

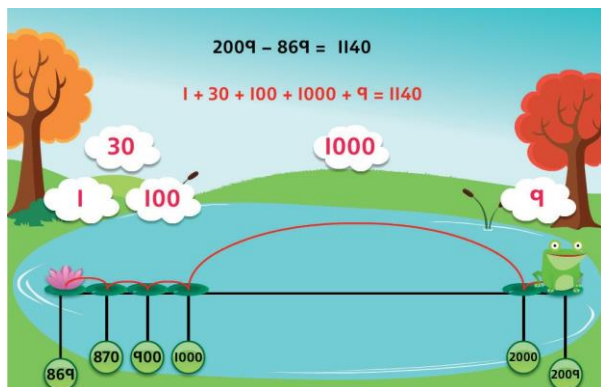
e.g. $3.58 - 1.99$

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

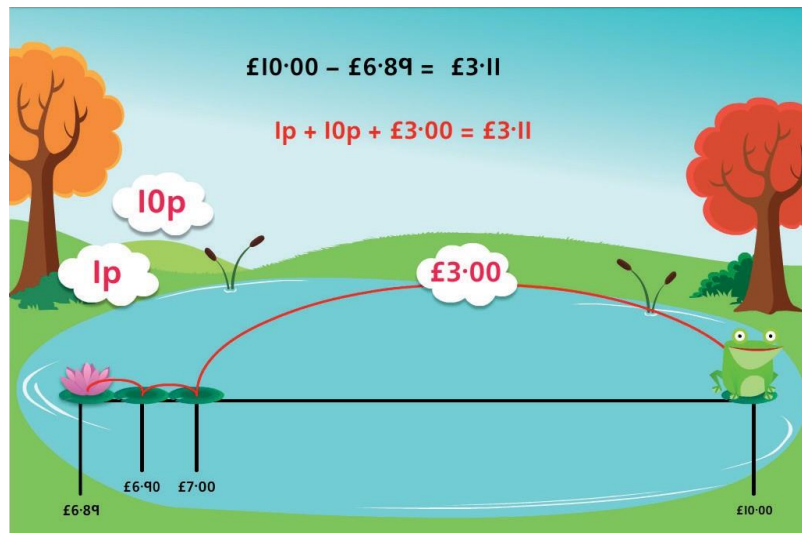
e.g. $360\,078 - 99\,998$

e.g. $12.831 - 0.99$

Year 5

Find change using shopkeepers' addition

e.g. Buy a toy for £6.89 using £10.00



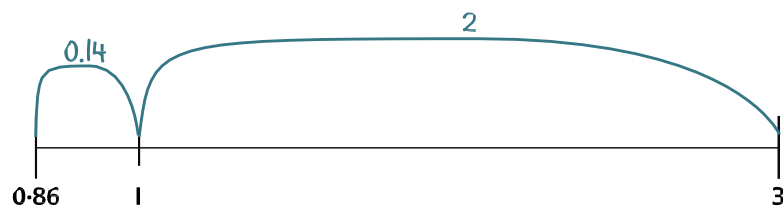
Find a difference between two amounts of money by counting up

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. $£4.00 - £3.86$

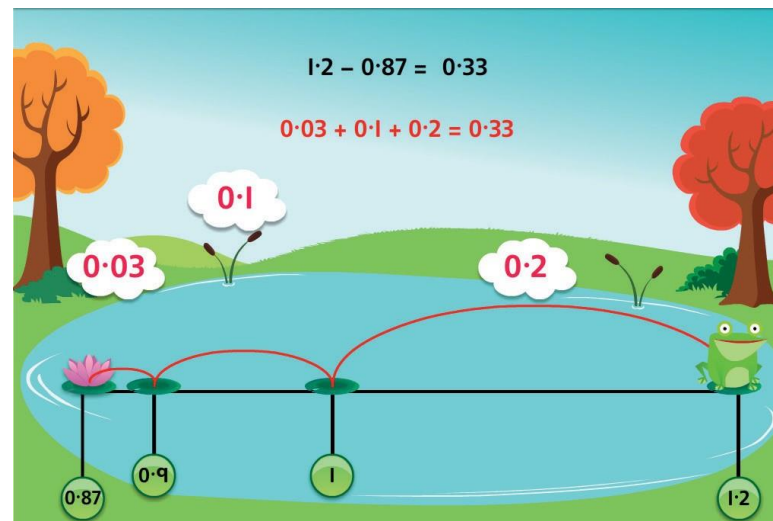
e.g. $£100 - £66$ using $66 + 34 = 100$

Year 6

Counting up

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

e.g. $1.2 - 0.87$

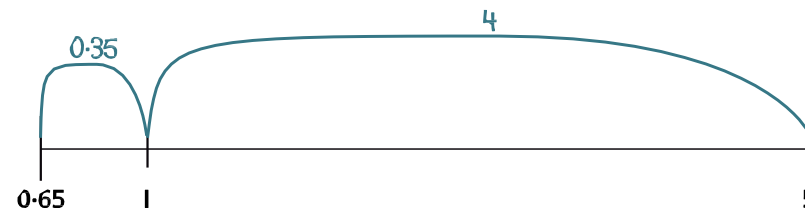


Using number facts

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 $£67 + £33 = £100$

Year 5

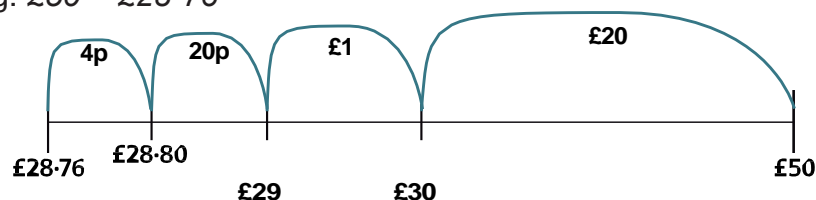
Compact column subtraction for numbers with up to 5 digits

e.g. $16\,324 - 8516$

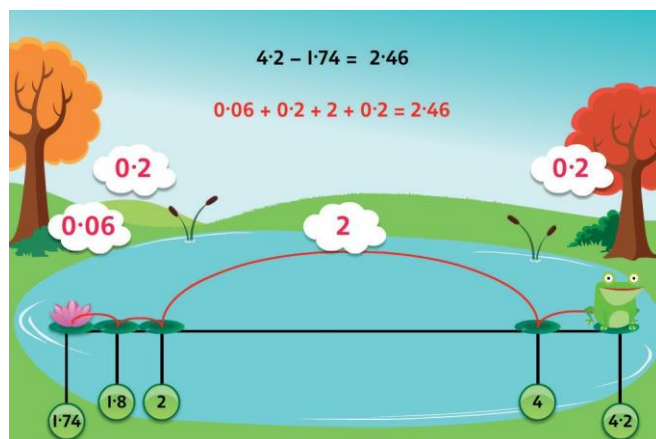
$$\begin{array}{r} \cancel{1} \cancel{6} \cancel{3} \cancel{2} \cancel{4} \\ - \quad 8 \quad 5 \quad 1 \quad 6 \\ \hline 7 \quad 8 \quad 0 \quad 8 \end{array}$$

Continue to use counting up subtraction for subtractions involving money, including finding change

e.g. $£50 - £28.76$



Use counting up subtraction to subtract decimal numbers



e.g. $4.2 - 1.74$

Subtract-related fractions

e.g. $\frac{3}{4} - \frac{1}{8} = \frac{5}{8}$

NB Counting up subtraction provides a default method for ALL children

Year 6

Compact column subtraction for large numbers

e.g. $34\,685 - 16\,458$

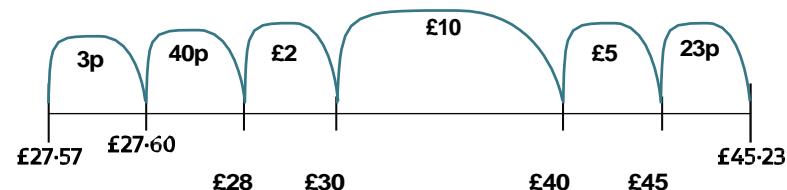
$$\begin{array}{r} \cancel{3} \cancel{4} \cancel{6} \cancel{8} \cancel{5} \\ - \quad 1 \quad 6 \quad 4 \quad 5 \quad 8 \\ \hline 1 \quad 8 \quad 2 \quad 2 \quad 7 \end{array}$$

Use counting up for subtractions where the larger number is a multiple or near multiple of 1000 or 10 000

Use counting up subtraction when dealing with money

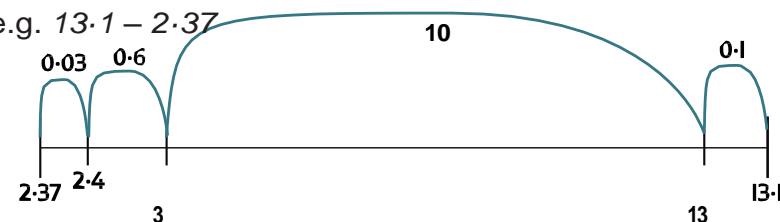
e.g. $£100 - £78.56$

e.g. $£45.23 - £27.57$



Use counting up subtraction to subtract decimal numbers

e.g. $13.1 - 2.37$



Subtract unlike fractions, including mixed numbers

e.g. $\frac{3}{4} - \frac{1}{3} = \frac{5}{12}$

e.g. $2\frac{3}{4} - 1\frac{1}{3} = 1\frac{5}{12}$

NB Counting up subtraction provides a default method for ALL children