Barker's Lane Community School Calculation Policy

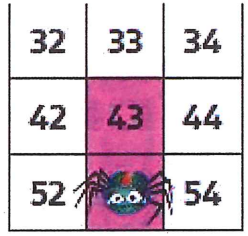
Year 1 Mental Subtraction

1. Using place value

Count back in 1's from a given number on a 100 square.

E.g. Know 53-1

Count back in 10's



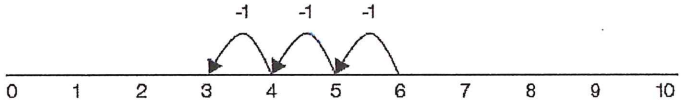
E.g. Know 43-10 without counting back in 1s

2.Taking away

Count back in 1s

E.g. 11-3 as 11, 10, 9. 8

E.g. 14-3 as 14, 13, 12, 11



The number line should also be used to show that 5 – 3 means the 'difference between 5 and 3' or 'the difference between 3 and 5' and how many jumps they are apart.

Count back in 10s

E.g. 53-20 as 53. 43, 33.

3. Using number facts

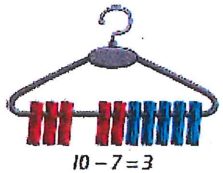
"Story" of 4, 5, 6, 7, 8,and 9

E.g. Story of 7 is 7-1=6 , 7-2=5

Mental recall of subtraction facts e.g. 17 —__ = 11

Use Number bonds to 10 to help subtract

E.g. 10-1=9, 10-2=8, 10-3=7



Subtract using patterns of known facts

E.g. 7-3=4 so we know 27-3=24,

47-3=44 so we know that 77-3 = 74

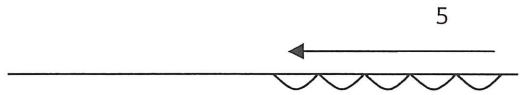
Find a small difference by counting on e.g. 22—17 = 5

4. Use number problems

I have saved 5p. The socks I want to buy cost 11p. How much more do I need to buy the socks?

Use practical and informal written methods to support the subtraction of a one-digit number from a one digit or two-digit number and a multiple of 10 from a two-digit number.

I have 11 toy cars. There are 5 cars too many to fit in the garage. How many cars fit in the garage?



Use the vocabulary related to addition and subtraction and symbols to describe and record addition and subtraction number sentences

Recording by

- drawing jumps on prepared lines
- constructing own lines

5. **- = signs and missing numbers**

7— ☐ =

7—3 = ☐

Year 2 Mental subtraction

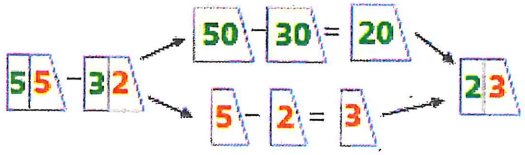
1. Using place value

Know 1 less or 10 less than any number

E.g. 1 less than 74

E.g. 10 less than 82

Partitioning



E.g. 55-32 as 50-30 and 5-2 and combine the answers 20+30

2. Taking away

Subtract 10 and multiples of 10

E.g. 76-20 as 76, 66, 56 or in one hop: 76-20 = 56

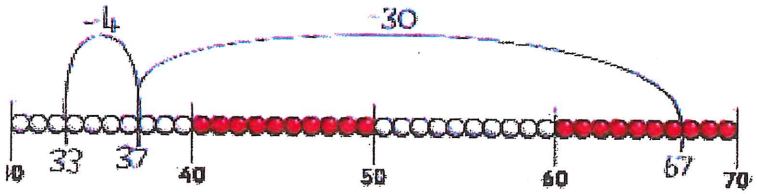
Subtract two 2-digit numbers by counting back in 10s, then in 1s

E.g. 67-34 as subtract 30(37) then count back 4 (33)

Subtract near multiples of 10

E.g. 74-21

E.g. 57-19



Bridging 10

E.g. 52—6 as 52-2 (50) - 4 = 46

3.Using number facts

Know pairs of numbers which make the numbers up to and including 12 and derive related subtraction facts.

E.g. 10 - 6=4, 8—3=5, 5—2=3

Subtract using patterns of known facts

E.g. 9—3 = 6, so we know 39—3 = 36, 69—3 = 66, 89—3 = 86

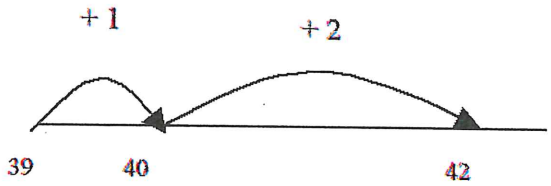
4. - = signs and missing numbers

Continue using a range of equations as in Year 1 but with appropriate numbers, including mental recall.

Extend to 14 + 5 = 20 -

Find a small difference by counting up

42 – 39 = 3



Year 3 mental subtraction

1. 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

- = signs and missing numbers

Continue using a range of equations as in Year 1 and 2 but with appropriate numbers, with mental recall.

Find a small difference by counting on

Continue as in Year 2 but with appropriate numbers e.g. 102 – 97 = 5

Partitioning

E.g. 68-42 as 60—40 and 8—2

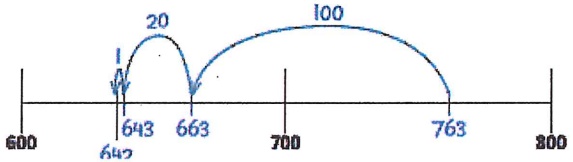
E.g. £6.84—£2.40 as £6—£2 and 80p—40p

Subtract mentally a 'near multiple of 10' to or from a two-digit number

Continue as in Year 2 but with appropriate numbers e.g. 78 – 49 is the same as 78 – 50 + 1

Count back in 100's, 10s then 1s

E.g. 763-121 as 763-100 (663) - 20 (643) - 1 = 642



Subtract near multiples of 10 and 100

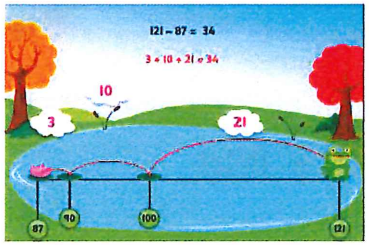
E.g. 648—199

E.g. 86-39

2. Counting on

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

E.g. 121—87



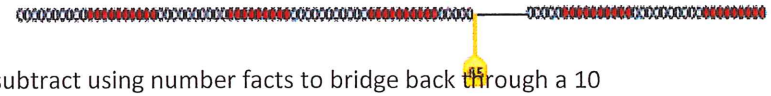
3. Using number facts

Know pairs which total each number to 20

E.g. 20—14 = 6

Number bonds to 100

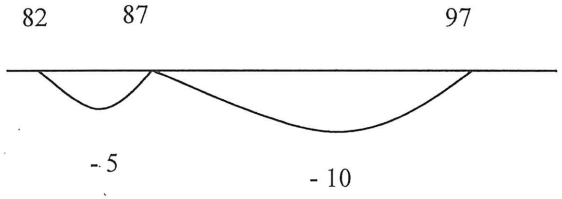
E.g. 100-48 = 52 E.g. 100—35 = 65



subtract using number facts to bridge back through a 10

E.g. 42—5 = 42-2 (40) - 3 = 37

Continue as in Year 2 but with appropriate numbers e.g.**97 – 15 = 72**



With practice, children will need to record less information and decide whether to count back or forward. It is useful to ask children whether counting up or back is the more efficient for calculations

such as 57 – 12, 86 – 77 or 43 – 28.

Year 4 mental subtraction

1. Taking away

Use place value to subtract

E.g. 4748—4000

E.g. 4748—8

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

E.g. 8392—50

E.g. 6723—3000

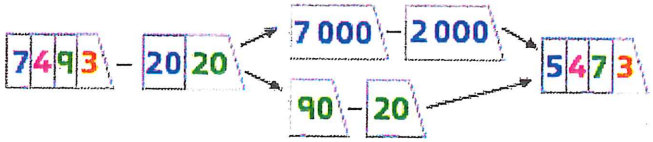
E.g. £3.74—30p

E.g. 5.6—0.2

Partitioning

£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—1302 as 6482—1000 (5482) - 300 (5182) - 1 = 5181

Subtract near multiples of 10, 100, 1000 02 £1

E.g. 3522-1999

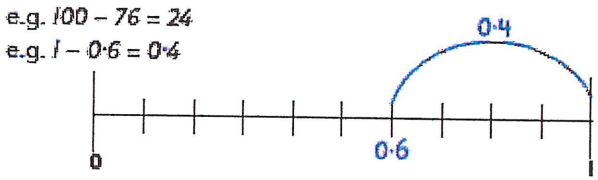
E.g. £34.86—£19.99

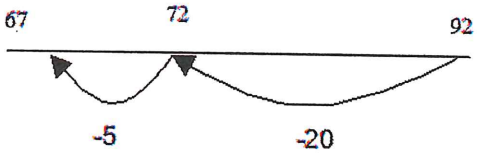
3. Using number facts

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

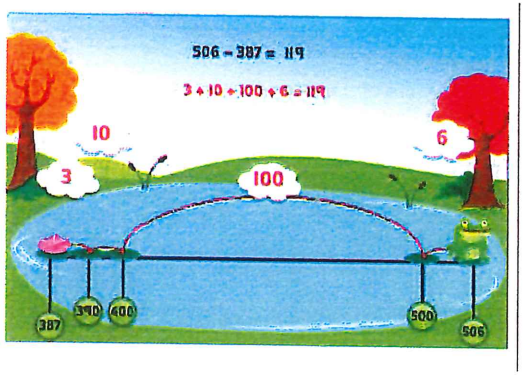
E.g. £10.00—£3.40 = £6.60

2. Counting on

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

E.g. 506—387

E.g. 4000—2693



Year 5 mental subtraction

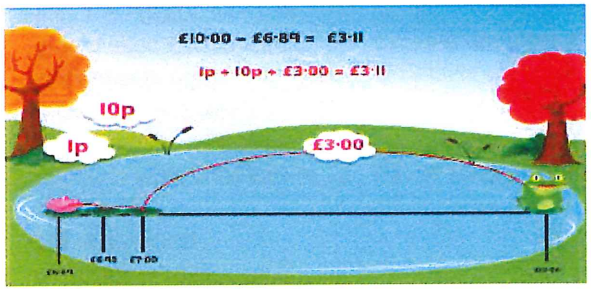
1. Taking away

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. 15672—300
E.g. 4.82—2
Eg. 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. 86456—9999
E.g. 3.58 –1.99

Find change using shop keepers addition
E.g. Buy a toy for £6.89 using £10.00

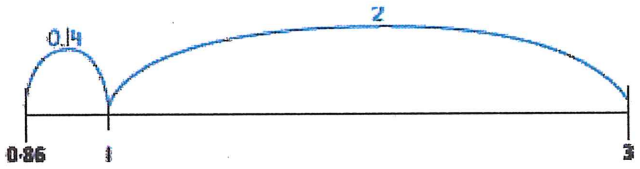


find a difference between two amounts of money by counting up.

3. Using number facts

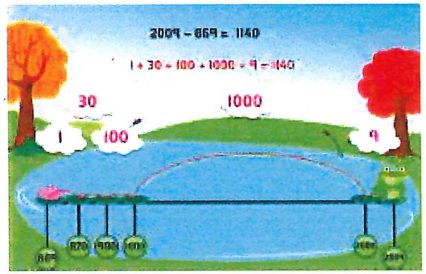
Derived facts from number bonds to 10 and 100
E.g. 2– 0.45 using 45+55 = 100
E.g. 3—0.86 using 86 + 14 = 100

Number bonds to £1, £10 and £100
E.g. £4.00—£3.86
E.g. £100—£66 using 66 + 34 = 100



2. Counting on

Find a difference between two numbers by counting on from the smaller to the larger
E.g. £12.05—£9.59
E.g. 2009—869



Year 6 mental subtraction

1. Taking away

Use place value to subtract decimals

E.g. 7.782—0.08

E.g. 16.263—0.2

A number line can be used to count on or back.

Take away multiples of powers of 10

E.g. 132 956—400

E.g. 686109—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 10 , 100 or 1000 then adjust.

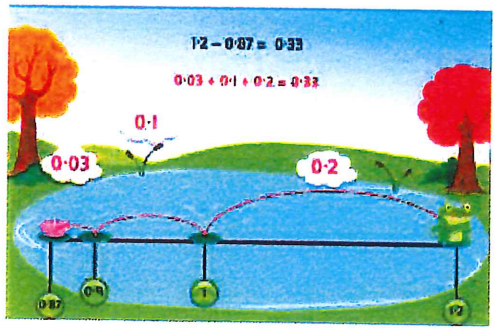
E.g. 360 078—99998

E.g. 12.831—0.99

2. Counting on

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

E.g. 1.2—0.87

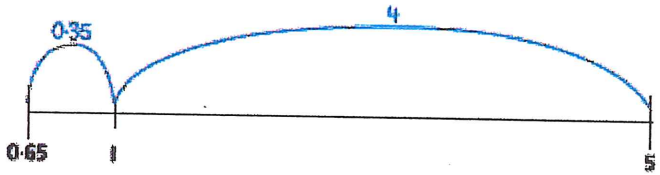


3. Using number facts

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

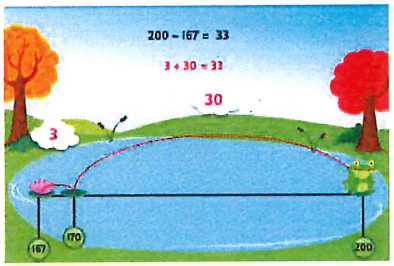
E.g. £7.00—£4.37

E.g. £100—£66.20 using 20p + 80p = £1 and £67 + £33 = £100

Written subtraction year 3

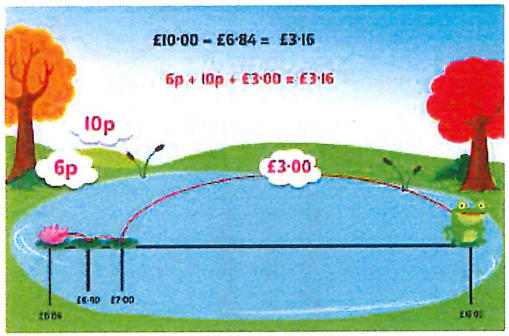
1. Develop counting on subtraction

E.g. 200—167



Use counting up subtraction to find change from £1, £5, and £10

E.g. £10.00—£6.64



Recognise complements of any fraction to 1

E.g. 1-1/4 = 3/4

E.g. 1—3/5 = 2/5

Use complementary addition for checking

E.g. 84—56 = 28, 56 + 28 = 84

Written subtraction year 4

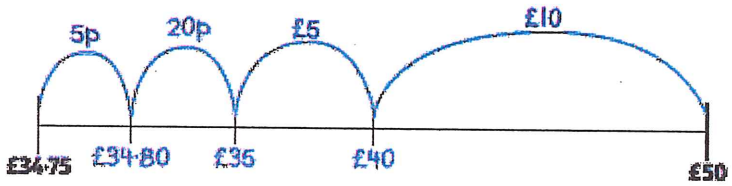
Expanded column subtraction with 2, 3 and 4 digit numbers
E.g. 726-358

	600	110	16
	~~700~~	20	~~6~~
−	300	50	8
	300	60	8

Begin to develop compact column subtraction
E.g. 726—358

	6	11	16
	~~7~~	~~2~~	~~6~~
−	3	5	8
	3	6	8

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



E.g. buy a computer game for £3.75 using £50

Subtract like fractions
E.g. 3/8—1/8 = 2/8

Complementary addition for checking
E.g. 754—86 = 668
668 + 86 = 754

Decomposition

72
- 48

(The calculation should be read as, e.g. take 8 from 2.)

Stage 1

70 + 2
- 40 + 8

Stage 2

60 + 12
- 40 + 8
20 + 4 = 24

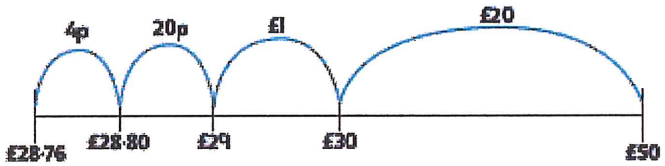
This would be recorded by the learners as:

60 1
~~70~~ + 2
- 40 + 8
20 + 4 = 24

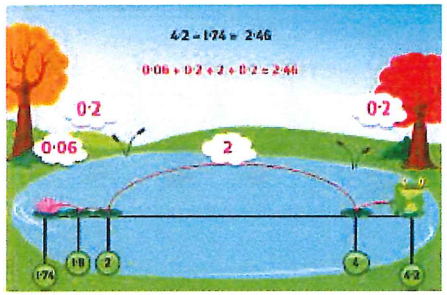
Written subtraction year 5

Compact column subtraction for numbers with up to 5 digits
E.g. 16 324—8516

Continue to use counting up subtraction for subtractions involving money, including finding change
E.g. £50-£28.76



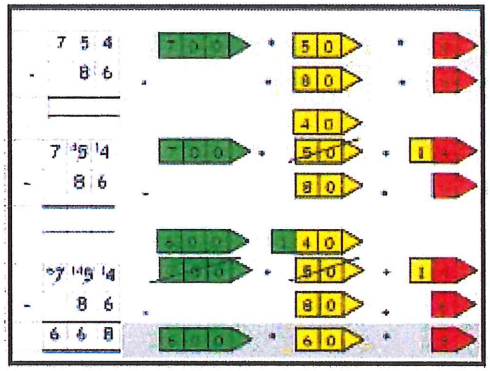
Use counting on subtraction to subtract decimal numbers
E.g. 4.2—1.74



Subtract related fractions
E.g. 3/4—1/8 = 5/8

NB counting on subtraction provides a default method for all children.
Complementary addition for checking
E.g. 754—86 = 668
E.g. 668 + 86 = 754

Partitioning and Decomposition



754
− 86

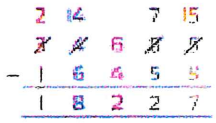
Stage 1 $700 + 50 + 4$
$-\ 80 + 6$

Stage 2 $700 + 40 + 14$ *(adjust from T to U)*
$-\ 80 + 6$

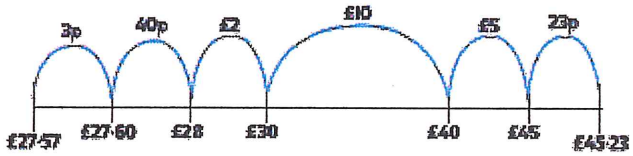
Stage 3 $600 + 140 + 14$ *(adjust from H to T)*
$-\ 80 + 6$
$600 + 60 + 8 = 668$

Written subtraction year 6

Compact subtraction for large numbers
E.g. 34 685—16 458

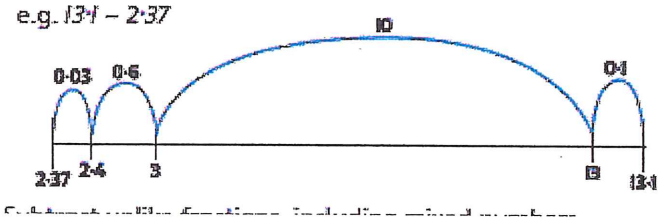


Use counting up for subtractions where the larger number is a multiple or near multiple of 1000 or 10 0000
Use counting up subtraction when dealing with money
E.g. £100—£78.56



E.g. £45.23—£27.57
NB learners can set the amounts to whole numbers + convert to pounds after the calculation

Use counting up subtraction to subtract decimal numbers



Subtract unlike fractions, including mixed numbers
E.g. 3/4—1/3 = 5/12
E.g. 2 3/4—1 1/3 = 1 5/12

NB counting on subtraction provides a default method for all children.

Complementary addition for checking
E.g. 754—86 = 668
E.g. 668 + 86 = 754

Partitioning and Decomposition

Stage 1

754 = 700 + 50 + 4
− 286 − 200 + 80 + 6

Stage 2

700 + 40 + 14 *(adjust from T to U)*
− 200 + 80 + 6

Stage 3

600 + 140 + 14 *(adjust from H to T)*
− 200 + 80 + 6
400 + 60 + 8 = 468

This would be recorded by the learners as:

600 140 1
~~700~~ + ~~50~~ + 4
− 200 + 80 + 6
400 + 60 + 8 = 468

Decomposition

5141
~~7~~54
− 286
468