Barker's Lane Community School Calculation Policy

Year 1 Mental Addition

1. Using Place Value:

Counting in ones

e.g. 45 + 1

Count in tens

e.g. 45 + 10 without counting on in tens

Add 10 to any given 2 digit number

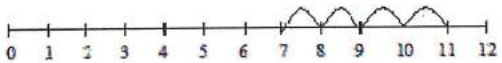
Use near doubles NSP—

34	35	36
44		46
54	55	56

2. Counting on

Count on in ones

e.g. 8 + 3 as 8, 9, 10, 11



Add, putting the larger number first

Count on in tens

e.g. 45 + 20 + as 45, 55, 65

3. Using number facts:

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

e.g. 7 = 7 + 0, 6 + 1, 5 + 2, 4 + 3

Number bonds to 10

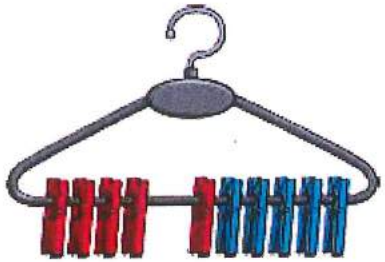
e.g. 5 + 5, 6 + 4, 7 + 3, 8 + 2, 9 + 1, 10 + 0

2 = 1+ 1

2 + 3 = 4 + 1

3 = 3

2 + 2 + 2 = 4 + 2



4 + 6 = 10

Use patterns based on known facts when adding

e.g. 4 + 3 = 7 so we know 24 + 3, 44 + 3, 74 + 3

3 + 4 = □	□ = 3 + 4
3 + □ = 7	7 = □ + 4
□ + 4 = 7	7 = 3 + □
□ + Ñ = 7	7 = □ + Ñ

Learners will begin to use informal and formal pencil and paper methods to support, record and explain partial mental methods building on existing mental Strategies.

Year 2 Mental Addition

1. Using place value:

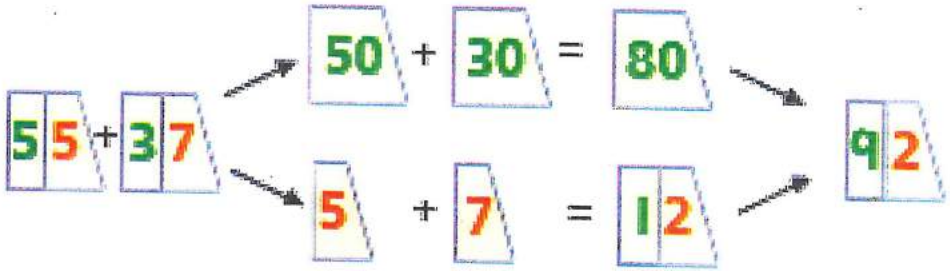
Know 1 more or 10 more than any number

e.g. 1 more than 67

e.g. 10 more than 85

Partitioning

e.g. 55 + 37 as 50 + 30 and 5 + 7, then finally combine the two totals: 80 + 12



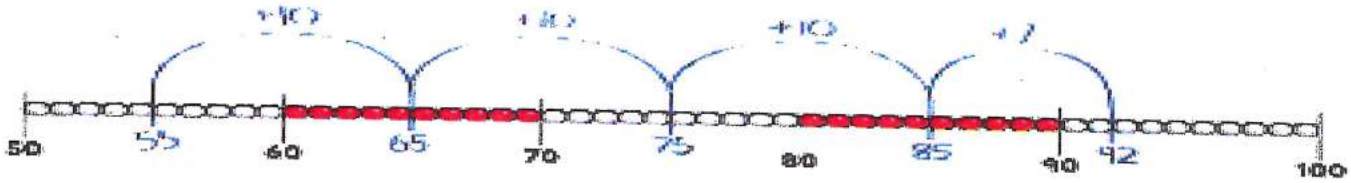
2. Counting on:

Add 10 and multiples of 10 to a given 1 or 2 digit number

e.g. 76 + 20 as 76, 86, 96 or in one hop: 76 + 20 = 96

Add two 2 digit numbers by counting on in tens, then in ones

e.g. 55 + 37 as 55 + 30 (85) + 7 = 92



Add near multiples of 10

e.g. 46 + 19 = 46 + 20—1

e.g. 63 + 21 = 63 + 20 + 1

Add 9 or 11 similarly

55 + 37 = 55 + 30 + 7

Year 2 Mental Addition continued

3. Using number facts:

Know pairs of numbers which make the numbers up to and including 12

e.g. 8 = 4+4, 3+5, 2+6, 1+7, 0+8

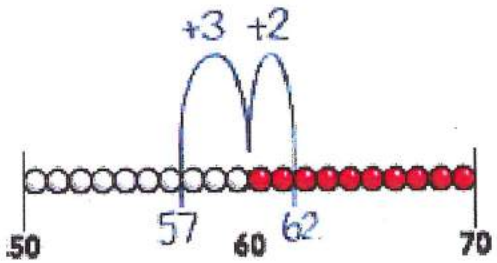
e.g. 10 = 5+5, 4+6, 3+7, 2+8, 1+9, 10+0

Use patterns based on known facts when adding

e.g. 6+3 = 9, so we know 36+3 = 39, 66+3 = 69, 56+3 = 59

Bridging 10

e.g. 57+5 = 57+3 (60) + 2=62



Add three or more 1 digit numbers, spotting bonds to 10 or doubles

e.g. 3+5+3 = 6+5 = 11

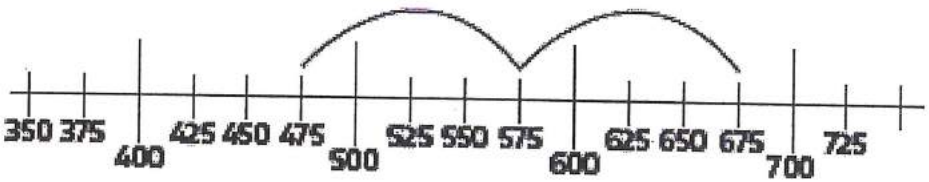
e.g 8+2+4 = 10+4 = 14

Year 3 Mental Addition

1. Using place value:

Count in hundreds

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



Add multiples of 10, 100 and £1

e.g. 746 + 200

e.g. 746 + 40

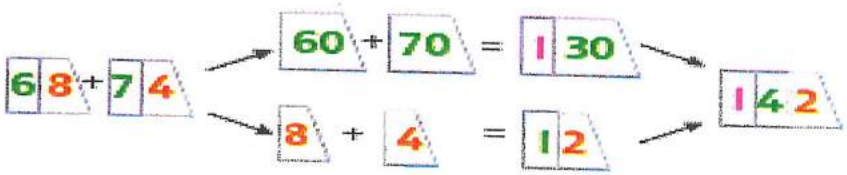
e.g. £6.34+£5 as £6+£5 and 34p

Partitioning

e.g. £8.50+£3.70 as £8+£3 and 50p + 70p and combine the totals: £11 + £1.20 *(Decimal point NSP page 272)*

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

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



+ = signs and missing numbers

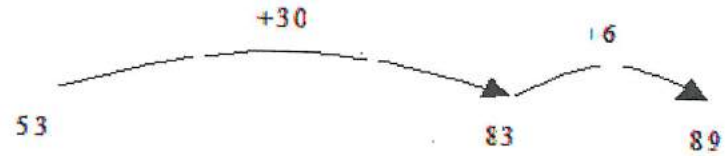
Continue using a range of equations as in Year 1 and 2 but with appropriate, larger numbers.

Partition into tens and ones

Partition both numbers and recombine.

Count on by partitioning the second number only e.g.

36 + 53 = 53 + 30 + 6



Year 3 Mental Addition continued

2. Counting on:

Add two 2 digit numbers by adding the multiple of 10, then the ones

67 + 55 as 67 + 50 (117) + 5 = 122. Add near multiples 10 and 100

e.g. 67+39 *(NSP page 268 for examples)*

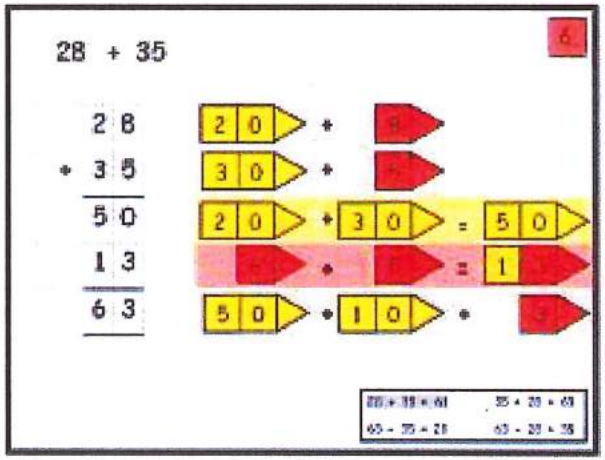
e.g. 364+199 *(Add HTU + TU, NSP page 270)*

Add pairs of 'friendly' 3 digit numbers

e.g. 548+120

Count on from 3 digit numbers

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



3. Using number facts:

Know pairs which total each number to 20

e.g. 7+8 = 15

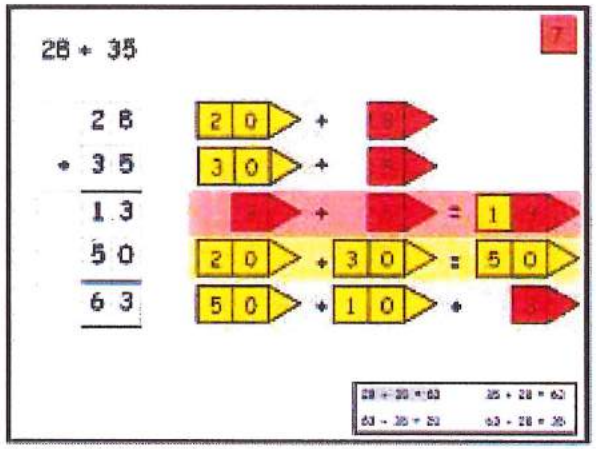
e.g. 12+6 = 18

Number bonds to 100

e.g. 35+65

46+54

73+27



Add to the next 10 and the next 100

e.g. 176+4 = 180 e.g. 435+65 = 500

Year 4 Mental Addition

+ = signs and missing numbers

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

1. Using place value:

Count in thousands

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

Partitioning

e.g. 746+40

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

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

2. Counting on:

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

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

Add near multiples of 10, 100, 1000

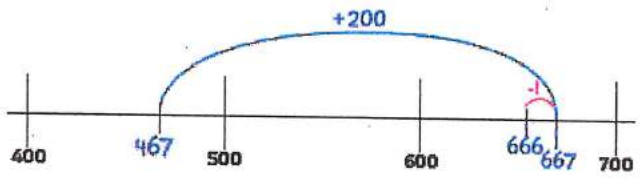
e.g. 467 + 199

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 4 Mental Addition continued

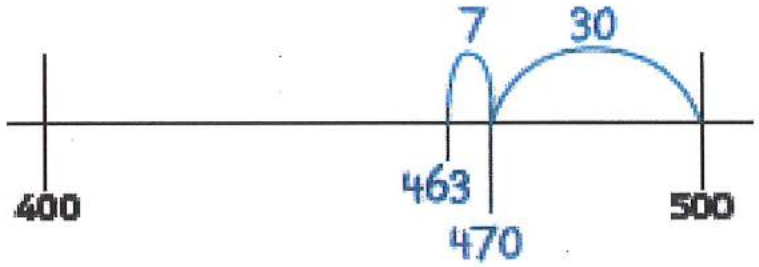
3. Using number facts:

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



4. 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

Add the nearest multiple of 10, then adjust

Continue as in Year 2 and 3 but with appropriate numbers e.g. 63 + 29 is the same as 63 + 30 - 1

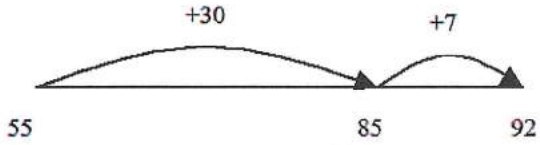
Partition into tens and ones and recombine

Either partition both numbers and recombine or partition the second number only e.g.

55 + 37 = 55 + 30 + 7

= 85 + 7

= 92



Year 5 Mental Addition

1. Using place value:

Count in 0.1s, 0.01s

e.g. Know what 0.1 more than 0.5 is

10s	1s	0·1s	0·01s
	0	5	1

2. Partitioning:

e.g. 2.4+5.8 as 2 + 5 and 0.4+0.8 and combine the totals: 7+1.2 = 8.2

+ = signs and missing numbers

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

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 5 Mental Addition

3. Counting on:

Add two decimal numbers by adding the ones, 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

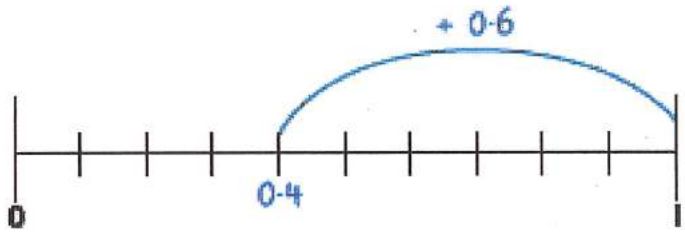
e.g. 6834 + 3005 as 9834 + 5

4. 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

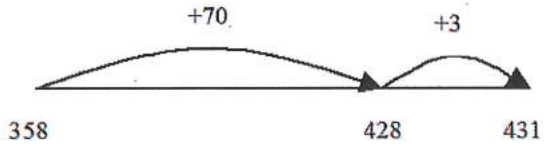
Partition into hundreds, tens and ones and recombine

Either partition both numbers and recombine or partition the second number only e.g.

358 + 73 = 358 + 70 + 3

= 428 + 3

= 431



Year 6 Mental Addition

1. Using place value:

Counti n 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

2. Counting on:

Add two decimal numbers by adding the ones, then the 0.1s, 0.01s, 0.001s

e.g. 6.345 + 0.999

e.g. 5.673 + 0.9

Count on from large numbers

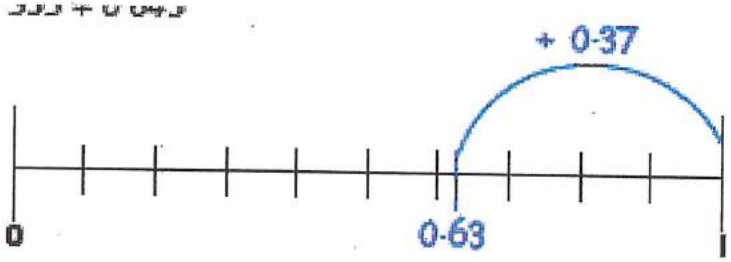
e.g. 16375 + 12003 as 28375 + 3

3. Using number facts:

Number bonds to 1 and 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

Year 3 Written Addition

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

e.g. 466 + 358

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

Horizontal expansion

83	80 + 3
+ 42	+ 40 + 2
5	120 + 5 = 125

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
+ 100   10
  800   20   4
```

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

e.g. 347 + 286 + 495

```
  347
  286
+ 495
   21
 1128
```

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 Written Addition

Pencil and paper procedures

367 + 185 = 431

either **or**

367	300 + 60 + 7
+185	100 + 80 + 5
12	400 +140+12 = 552
140	
400	
552	

leading to

```
 367
+185
 552
  11
```

Extend to decimals **in the context of money.**

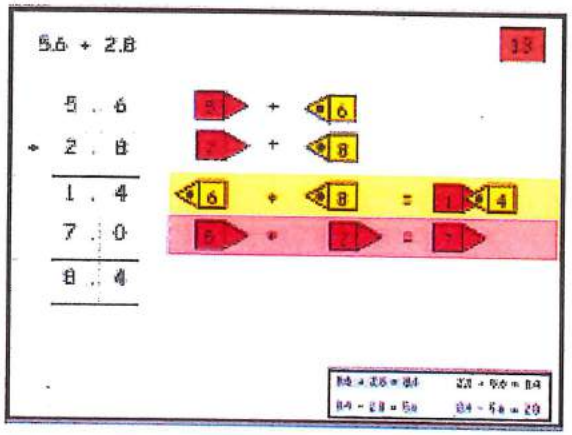
Use expanded and compact column addition to add amounts of money

Add like fractions

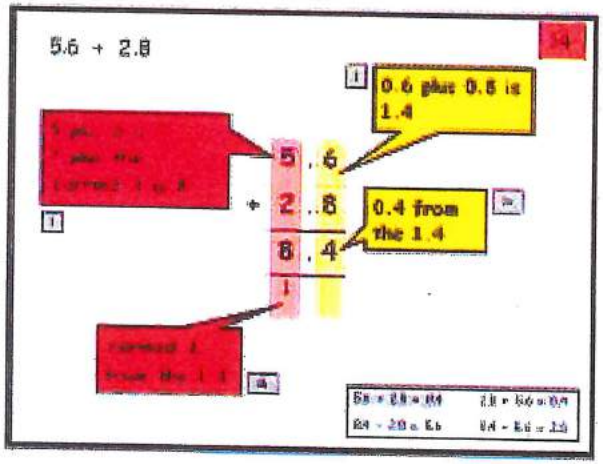
e.g. 3/8 + 1/8 + 1/8

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

e.g. 1466 + 4868




```
 1000  400  60
 4000  800  60
+1000  100  10
 6000  300  30
```



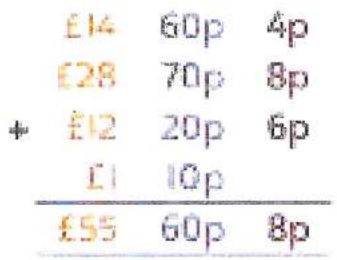
Compact column addition with larger numbers

```
 5347
 2286
+1495
  121
 9128
```

Year 5 Written Addition

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

e.g. £14.64 + £28.78 + £12.26



Pencil and paper procedures

Extend to numbers with at least four digits

3587 + 675 = 4262

3587
+ 675
4262
111

Revert to expanded methods if the children experience any difficulty.

Extend to up to two places of decimals (same number of decimals places) and adding several numbers (with different numbers of digits).

72.8
+54.6
127.4

Add related fractions

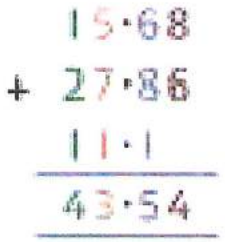
e.g. 3/4 + 1/8 = 7/8

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 up to 2 decimal places

e.g. 15.68 + 27.86

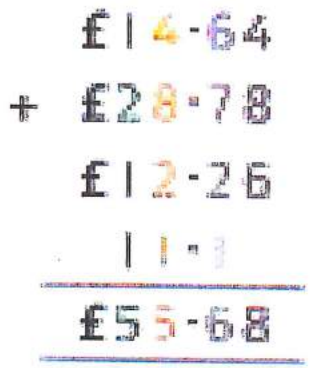


Year 6 Written Addition

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



Revert to expanded methods if the children experience any difficulty.

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