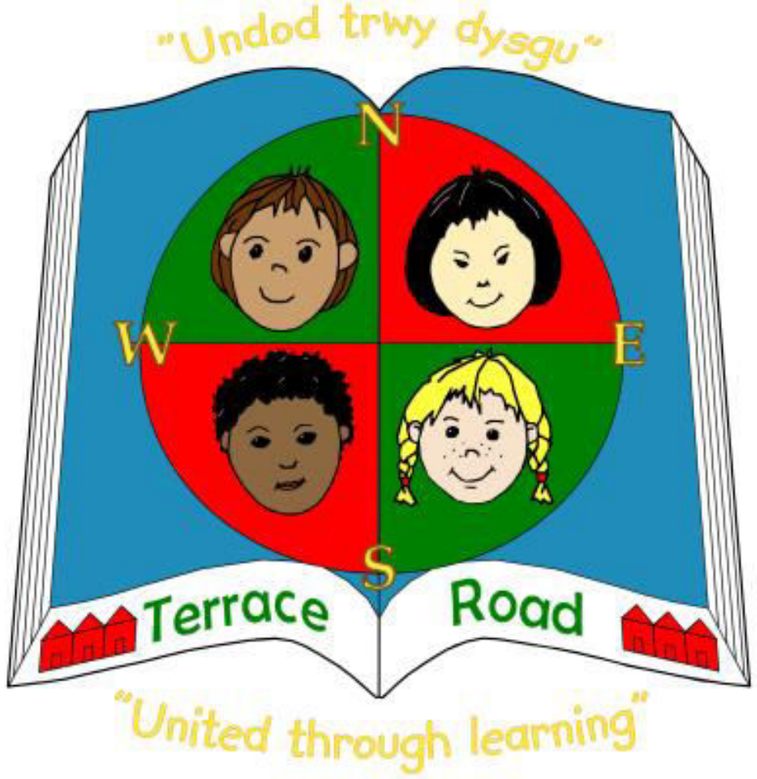
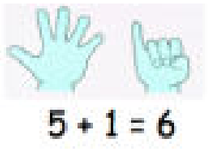
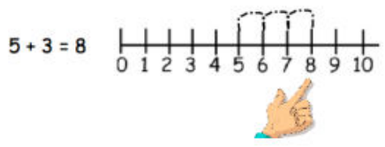
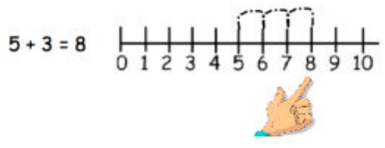
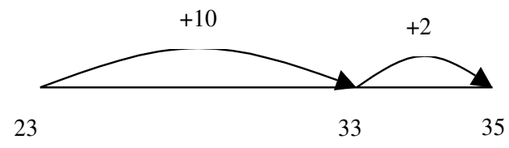
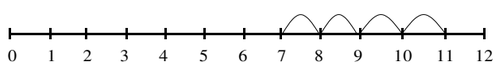
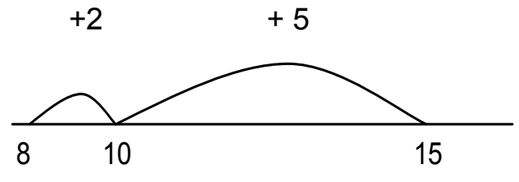
Terrace Road Primary School

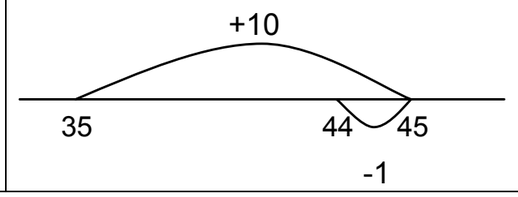


Calculation Policy

Terrace Road Calculation Policy – Addition

Nursery	Reception	Year 1	Year 2
Very early addition and subtraction begin with combining groups of objects and finding how many there are altogether. Make up number stories using the vocabulary related to addition and subtraction and combine groups of objects practically. For example, “We have two apples in the bowl and we will add three more. How many altogether?” “There are 5 bananas in the bowl. You eat one and I eat one. How many are left?” Children should use this combining of groups to begin to become more familiar with finding one more or one less than a given number.	**+ = signs and missing numbers** Children need to understand the concept of equality before using the ‘=’ sign. Calculations should be written either side of the equality sign so that the sign is not just interpreted as ‘the answer’. Children use cubes and other concrete equipment to help them to add. Begin to relate addition to combining two groups of objects • Make a record in pictures, words or symbols of addition activities already carried out. • Construct number sentences to go with practical activities • Use of games, songs and practical activities t o begin using vocabulary • Solve simple word problems using their fingers and pictorial representations.  Can find one more to ten. Higher Ability/ Gifted and Talented children progress to using a number line. They jump forwards along the number line using finger, progressing to steps of 2, 3 and higher.  	Continue to use the strategies used in Reception but with appropriate, larger numbers. **+ = signs and missing numbers** Children need to understand the concept of equality before using the ‘=’ sign. Calculations should be written either side of the equality sign so that the sign is not just interpreted as ‘the answer’. 2 = 1+ 1 2 + 3 = 4 + 1 3 = 3 2 + 2 + 2 = 4 + 2 Missing numbers need to be placed in all possible places. 3 + 4 = ∇ ∇ = 3 + 4 3 + ∇ = 7 7 = ∇ + 4 ∇ + 4 = 7 7 = 3 + ∇ ∇ + ∇ = 7 7 = ∇ + ∇ Children use cubes and other concrete equipment to help them to add. Children use a number line. They jump forwards along the number line using finger, progressing to steps of 2, 3 and higher.  	**+ = signs and missing numbers** Continue using a range of equations as in Year 1 but with appropriate, larger numbers. 9 + 21 = ∇ ∇ = 10 + 20 6 + ∇ = 17 23 = ∇ + 2 ∇+ 3 = 47 32 = 3 + ∇ ∇ + ∇ = 52 49 =∇+ ∇ Extend to 14 + 5 = 10 + and adding 3 numbers 16 + ∇ + ∇ = 100 35 = 1 + ∇ + 5 Promote covering up of numbers and operations.

			Partition into tens and ones and recombine 12 + 23 = 10 + 2 + 20 + 3 10 + 20 = 30 2 + 3 = 5 = 30 + 5 = 35
	Counting Children start simple counting using concrete objects that are moved as they count.	**Counting** Children use hundred square to help count on and back, find patterns and count in 2's , 5's, 10s etc.	Continue to use the strategies used in Year 1 but with appropriate numbers. **Count on in tens and ones** = 23 + 12 = 23 + 10 + 2 = 33 + 2 = 35 
		The Number Line Children use a numbered line to count on in ones. Children use number lines and practical resources to support calculation and teachers *demonstrate* the use of the number line. 7+ 4 	**The Empty Number Line: Partitioning and bridging through 10.** The steps in addition often bridge through a multiple of 10 e.g. Children should be able to partition the 7 to relate adding the 2 and then the 5. 8 + 7 = 15 (2 + 5 = 7)  *Add 9 or 11 by adding 10 and adjusting by 1*

			e.g. ***Add 9 by adding 10 and adjusting by 1*** 35 + 9 = 44 35 + 10 = 45 45 – 1 = 44 

Year 3	Year 4	Year 5	Year 6
<u>+ = signs and missing numbers</u> Continue using a range of equations as in Year 2 but with appropriate, larger numbers. 13 + 24 = ∇ ∇ = 30 + 40 3 + ∇ = 17 47 = ∇ + 4 ∇ + 4 = 97 52 = 3 + ∇ ∇ + ∇ = 85 78 = ∇ + ∇ Promoting covering up of operations and numbers. Extend to 34 + 51 = 80 + ∇ and adding three numbers 32 + ∇ + ∇ = 100 235 = 1 + ∇ + 5	**<u>+ = signs and missing numbers</u>** Continue using a range of equations as in Year 3 but with appropriate numbers and begin to include examples using more than one operation 278 - 8 = 180 + ∇	**<u>+ = signs and missing numbers</u>** Continue using a range of equations as in Year 4 but with appropriate numbers and include examples using more than one operation.	**<u>+ = signs and missing numbers</u>** Continue using a range of equations as in Year 5 but with appropriate numbers and include examples using more than one operation.
<u>Partition into tens and ones and recombine</u> Partition both numbers and recombine. 36 + 53 = 30 + 50 = 80 6 + 3 = 9 80 + 9 = 89	**<u>Partition into hundreds, tens and ones and recombine</u>** Partition both numbers and recombine. Extend to include examples bridging multiples of 10 and 100. 436 + 53 = 400 + 0 = 400 30 + 50 = 80 6 + 3 = 9 400 + 80 + 9 = 489 267 + 89 = 200 + 0 = 200 60 + 80 = 140 7 + 9 = 16 200 + 140 + 16 = 356	**<u>Partition into hundreds, tens and ones and recombine</u>** Partition both numbers and recombine. Extend to include examples bridging multiples of 10, 100 and 1000. 432 + 326 400 + 300 = 700 30 + 20 = 50 2 + 6 = 8 700 + 50 + 8 = 758 859 + 382 800 + 300 = 1100 50 + 80 = 130 9 + 2 = 11 1100 + 130 + 11 = 1241	**<u>Partition into thousands, hundreds, tens and ones and recombine</u>** Partition both numbers and recombine. Extend to include examples bridging multiples of 10, 100 and 1000. 3432 + 5326 3000 + 5000 =8000 400 + 300 = 700 30 + 20 = 50 2 + 6 = 8 8000 + 700 + 50 + 8 =8758 5859 + 9382 5000 + 9000 =14,000 800 + 300 = 1100 50 + 80 = 130 9 + 2 = 11 14,000 + 1100 + 130 + 11 = 15,241

Add a near multiple of 10 to a two-digit number Continue as in Year 2 but with appropriate numbers 35 + 19 73 + 21 = 35 + 20 = 55 73 + 20 = 93 55 - 1 = 54 93 + 1 = 94 75 + 39 = 93 + 61 = 75 + 40 = 115 93 + 60 = 153 115 - 1 = 114 153 + 1 = 154	**Add the nearest multiple of 10, then adjust** Continue as in Year 3 but adding 2-digit number to a 3-digit number e.g. 463 + 29 = 897 + 61 = 463 + 30 = 493 897 + 60 = 957 493 - 1 = 492 957 + 1 = 958	**Add the nearest multiple of 10 or 100, then adjust** Continue as in Year 2, 3 and 4 but with appropriate numbers e.g. 326 + 129 458 + 199 326 + 130 = 456 458 + 200 = 658 456 - 1 = 455 658 - 1 = 657 6.3 + 1.9 7.4 + 3.1 6.3 + 2.0 = 8.3 7.4 + 3.0 = 10.4 8.3 - 0.1 = 8.2 10.4 + 0.1 = 10.5	**Add the nearest whole number or multiple of 10 or 100, then adjust** Continue as in Year 5 but include examples adding the nearest whole number e.g. 4326 + 129 4326 + 130 = 4456 4456 - 1 = 455 3458 + 199 3458 + 200 = 3658 3658 - 1 = 3657 6439 + 4001 6439 + 4000 = 10,439 10,439 + 1 = 10,440 £6.32 + £1.99 £6.32 + £2 = £8.32 £8.32 - 1p = £8.31 27.49m + 40.01m 27.49m + 40.00m = 67.49m 67.49m + 0.01m = 67.5m

Introduce extended vertical method to add 2-digit numbers

Use base 10 equipment to develop understanding.

83 + 42 = 125

```
  83        83
+ 42      + 42
 120         5
   5       120
 125       125
```

Consolidate extended vertical method and introduce standard algorithm to add a 3-digit and a 2-digit number and to add totals less than £10

Use base10 equipment to develop understanding.

```
 358        358
+ 73      + 73
  11       431
 120        11
 300
 431
```

```
  £ 2.50
+ £ 1.75
  £ 4.25
```

(Revert to expanded methods if the children experience any difficulty and use of base 10 equipment)

Consolidate extended vertical method and use standard algorithm to add two 3-digit numbers, to add totals less than £100 and to add numbers with 1 decimal place in the context of measures

```
  878        358
+ 356      + 685
   14       1043
  120         11
 1100
 1234
```

```
  £13.67      8.5cm
+ £24.37    + 6.8cm
  £38.04      15.3cm
       1           1
```

```
  16.8kg
+  5.7kg
  22.5kg
  11
```

Give pupils opportunities to line up the digits themselves when adding numbers with a different number of digits by sometimes presenting calculations horizontally as this will support pupils when solving problems.

Revert to expanded methods if the children experience any difficulty.

Consolidate extended vertical method and use standard algorithm to add whole numbers and decimals (including examples where numbers have different numbers of decimal places)

8878+5356 6358+ 9658

```
  8878        6358
+ 5356      + 9685
    14       16,043
   120          11
  1100
 13,000
 13,234
```

£313.67+£24.37 86.7kg+6.84kg

```
  £313.67      86.70  kg
+ £  24.37   +  6.84  kg
  £338.04      93.54  kg
     1  1         11
```

16.8km+5km+7.876km

```
 16.800km
  5.000km
  7.876km
29.676km
11
```

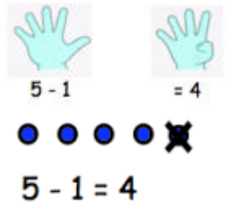
Give pupils opportunities to line up the digits and use 0 as a place holder themselves when adding numbers with a different number of digits or decimal places by sometimes presenting calculations horizontally as this will support pupils when solving problems.

Revert to expanded methods if the children experience any difficulty.

Terrace Road Calculation Policy - Subtraction

<table>
<tr><th>Nursery</th><th>Reception</th><th>Year 1</th><th>Year 2</th></tr>
<tr>
<td>Very early addition and subtraction begin with combining groups of objects and finding how many there are altogether. Make up number stories using the vocabulary related to addition and subtraction and combine groups of objects practically.

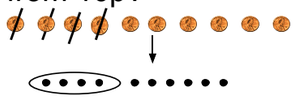
For example, “We have two apples in the bowl and we will add three more. How many altogether?” “There are 5 bananas in the bowl. You eat one and I eat one. How many are left?”

Children should use this combining of groups to begin to become more familiar with finding one more or one less than a given number.</td>
<td>Begin to relate subtraction to ‘taking away’
• Make a record in pictures, words or symbols of subtraction activities already carried out
• Use of games, songs and practical activities to begin using vocabulary
• Construct number sentences to go with practical activities
• Relate subtraction to taking away and counting how many objects are left.


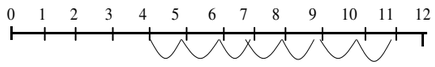
Can find one less to ten.

Higher Ability/ Gifted and Talented Progression:

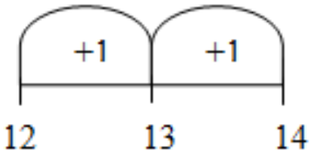

Counting backwards along a number line using finger.</td>
<td><u>- = signs and missing numbers</u>
7 – 3 = ∇ ∇ = 7 – 3
7 -∇ = 4 4 = ∇ - 3
∇ - 3 = 4 4 = 7 - ∇
∇ - ∇ = 4 4 = ∇ - ∇

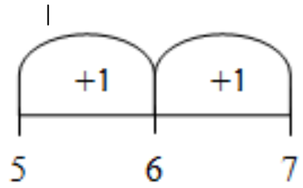
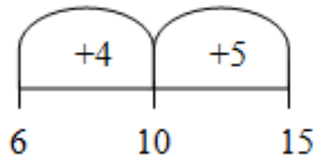
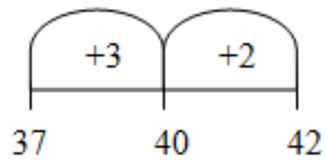
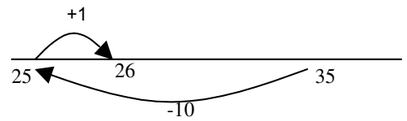
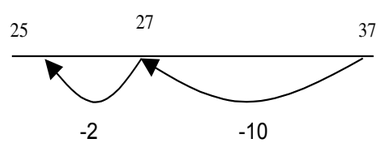
<u>Pictures / marks</u>
Sam spent 4p. What was his change from 10p?


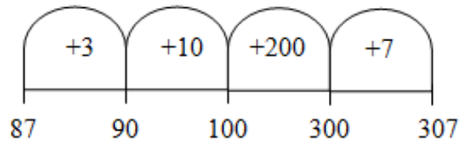
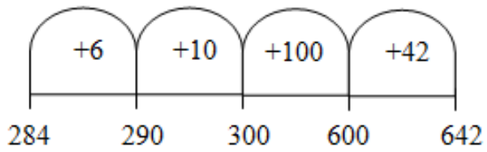
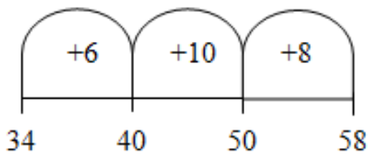
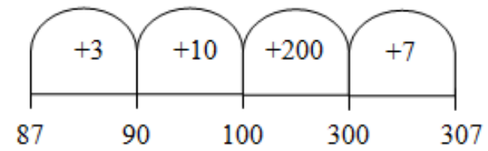
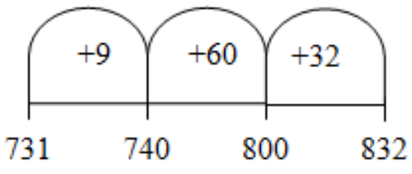
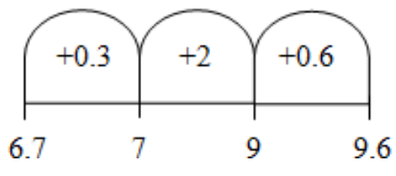
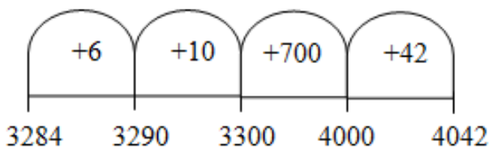
Number lines (numbered)

11 – 7
(Counting back)

</td>
<td><u>- = signs and missing numbers</u>
Continue using a range of equations as in Year 1 but with appropriate numbers.
Extend to 14 + 5 = 20 - ∇</td>
</tr>
<tr>
<td></td>
<td></td>
<td><u>Counting on</u>

Count on to find the difference between numbers less than 10.
Use Numicon to develop understanding of concept.
Record by – drawing jumps on prepared lines</td>
<td><u>Counting on</u>

Find small differences within 20 by counting on.
Use Numicon to develop understanding of concept.
Count on using a ruler as a number line.
Construct own number lines.
14 – 12 = 2

</td>
</tr>
</table>

		Leading to constructing own lines 7 – 5 = 2  (Teachers model jottings appropriate for larger numbers)	Including examples bridging 10 15 – 6 = 9  Leading to finding a small difference between 2-digit numbers 42 – 37 = 5  Subtract 9 or 11. Begin to add/subtract 19 or 21 35 – 9 = 26  **<u>Use known number facts and place value to subtract</u>** (partition second number only) 37 – 12 = 37 – 10 – 2 = 27 – 2 = 25 

Year 3	Year 4	Year 5	Year 6
- = signs and missing numbers **Continue using a range of equations as in Year 1 and 2 but with appropriate numbers.** 67 - 24 = ∇ ∇ = 80 - 40 3 + ∇ = 17 47 = ∇ - 4 ∇ - 4 = 97 52 = 83 - ∇ ∇ - ∇ = 15 78 = ∇ - ∇ Promoting covering up of operations and numbers. Extend to 84 - 51 = 80 - ∇	**- = signs and missing numbers** Continue using a range of equations as in Year 3 but with appropriate numbers and begin to include examples using more than one operation 278 - 8 = 180 + ∇  	**- = signs and missing numbers** Continue using a range of equations as in Year 4 but with appropriate numbers and include examples using more than one operation 278 - 8 = 180 + ∇ - 3  	**- = signs and missing numbers** Continue using a range of equations as in Year 5 but with appropriate numbers and include examples using more than one operation 3278 - 50 = 180 + ∇ - 3
Counting on Count on to find the difference between two 2-digit numbers. This strategy should be promoted to find small differences. 58 – 34 = 24  6 + 10 + 8 = 24	**Counting on** Count on to find differences between a 2-digit number and a 3-digit number. 307 – 87= 220  Leading to finding differences between two 3-digit numbers. 832 – 731 = 101  	**Counting on** Count on to find the difference between two 3-digit numbers. 642 – 284 = 358 This can be refined to: 642 - 284 = 6 + 10 + 300 + 42 = 358 642 - 284 = 16 + 342 = 358 (can be refined to) Count on to find the difference between numbers with 1 decimal place. 9.6 – 6.7 = 2.9  	**Counting on** Count on to find the difference between two 4-digit numbers extending to larger numbers. 4042 – 3284 = 758  This can be refined to: 4042 - 3284 = 6 + 10 + 700 + 42 = 758 4042 - 3284 = 16 + 742 = 758 (can be refined to) Count on to find the difference between numbers with 2 decimal places. 9.63 – 6.91

Subtract a near multiple of 10 from a two-digit number

Continue as in Year 2 but with appropriate numbers

e.g. 35 - 19
35 - 20 = 15
15 + 1 = 16

73 - 21 =
73 - 20 = 53
53 - 1 = 52

75 - 39 =
75 - 40 = 35
35 + 1 = 36

93 - 61 =
93 - 60 = 33
33 - 1 = 32

Use known number facts and place value to subtract two 2-digit number

82 – 32
82 – 30 = 52
52 - 7 = 45

or using a number line



Only MAT Y3 pupils will be introduced to decomposition.

Subtract the nearest multiple of 10, then adjust.

Continue as in Year 3 but subtracting a 2-digit number from a 3-digit number

e.g. 463 – 29
463 - 30 = 433
433 + 1 = 434

897 - 61
897 - 60 = 837
837 - 1 = 836

and extend to examples bridging a multiple of 100

e.g. 621 - 79
621 – 80 = 541
541 + 1 = 542

Use known number facts and place value to subtract a 2-digit number from a 3-digit number

387 – 64
387 – 60 = 327
327 – 4 = 323

or using a number line

Extend to include examples bridging a multiple of 100 and/or 10

522 – 65
522 – 60 = 462
462 – 5 = 457

or using a number line

Subtract the nearest whole number or multiple of 10 or 100, then adjust.

386 - 129
386 - 130 = 256
256 + 1 = 257

458 - 199
458 - 200 = 258
258 + 1 = 259

6.3 - 1.9
6.3 - 2.0 = 4.3
4.3 + 0.1 =4.4

7.4 - 3.1
7.4 - 3.0 = 5.4
5.4 - 0.1 = 5.3

Use known number facts and place value to subtract

387 – 164
387 – 100 = 287
287 – 60 = 227
227 – 4 = 223

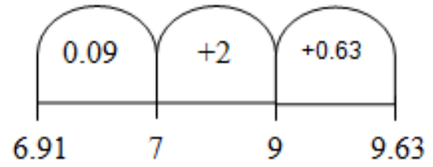
or using a number line

Extend to include examples bridging a multiple of 100 and/or 10 and numbers with one decimal place

522 – 365
522 – 300 = 222
222 – 60 = 162
162 – 5 = 157

or using a number line

6.1 – 2.5
6.1 – 2 = 4.1
4.1 – 0.5 = 3.6



Subtract the nearest whole number or multiple of 10, 100 or 1000 then adjust.

5386 - 129
5386 - 130 = 5256
5256 + 1 = 5257

2458 – 2001
2458 - 2000 = 458
458 - 1 = 457

£36.50 - £19.99
£36.50 - £20 = £16.50
£16.50 + 1p = £16.51

87.4km - 3.01km
87.4 - 3.0 = 84.4
84.4 - 0.1 = 84.39

Use known number facts and place value to subtract

4387 – 2164
4387 – 2000 = 2387
2387 – 100 = 2287
2287 – 60 = 2227
2227 - 4 = 2223

or using a number line

Extend to include examples bridging a multiple of 100 and/or 10 and numbers with more than one decimal place

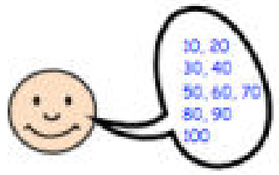
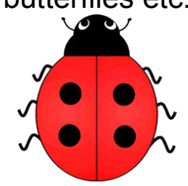
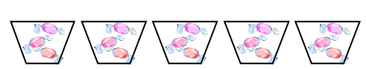
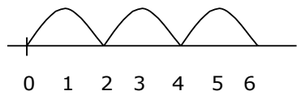
4122 – 3365
4122 – 3000 = 1122
1122 – 300 = 822
822 – 60 = 762
762 – 5 = 757

or using a number line

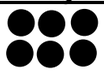
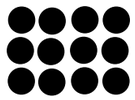
	Introduce decomposition to subtract a 2-digit number from a 2 or 3-digit number and to subtract two amounts less than £10 It is essential to introduce decomposition using base 10 equipment to develop pupils' understanding. 362 − 41 = 321 622 − 94 = 528 £6.83 − £5.84 = £0.99	**Use decomposition to subtract a 3-digit number from a 3-digit number and to subtract two amounts less than £100** It is essential to further develop understanding of decomposition using base 10 equipment. 362 − 141 = 221 622 − 494 = 128 £76.83 − £45.84 = £30.99	26.15 – 18.5 26.15 – 10 = 16.15 16.15 – 8 = 8.15 8.15 – 0.5 = 7.65 **Use decomposition to subtract a 4-digit number from a 4-digit number and to subtract decimals with more than one decimal place** It is essential to further develop understanding of decomposition using base 10 equipment. 5362 − 2141 9622 − 4494 7000 − 6784

482 − 16 = 466
547 − 85 = 462
703 − 85 = 618
800 − 28 = 772
482 − 216 = 266
547 − 385 = 162
703 − 285 = 418
800 − 528 = 272
6482 − 3216
5547 − 2385
3703 − 1285
8800 − 5528
£76.83 − £45.84

Terrace Road Calculation Policy – Multiplication

Nursery	Reception	Year 1	Year 2
Start to use songs about multiplication e.g. counting in 10s.	Real life contexts and use of practical equipment to count in repeated groups of the same size: • Count in twos; fives; tens Also chanting in 2s, and more able and talented 5s and 10s by the end of the summer term. 	Continue using the real life contexts and use of practical equipment to count in repeated groups as in Reception. Children are introduced to 'lots of'.	Continue using the real life contexts and use of practical equipment to count in repeated groups as in Reception and Year 1. **X = signs and missing numbers** 5 x 2 = △ 10 x △ = 20 △ x △ = 12 △ x 3 = 9 △ = 2 x 5 20 = △ x 5 30 = △ x △ 40 = 5 x △
	Doubling and counting groups Children are encouraged to develop ways of recording in the context of play, practical activities (involving equal sets or groups) and problems - by using pictures and their own representations, for example, 'I collected 2 big bears, 2 medium bears and 2 baby bears. I have got 6 bears altogether.' These can then be recorded as number sentences. Children learn to double numbers to 10 – doubling by counting dominoes, spots on ladybirds, butterflies etc.  Learning through questioning e.g. How many spots are there on one wing? There is the same amount of spots on the other wing. There is double the amount. What is double of 2?	**Doubling and counting groups** Multiplication is related to doubling and counting groups of the same size.  Looking at columns Looking at rows 2 + 2 + 2 — 3 groups of 2 3 + 3 — 2 groups of 3 **Counting using a variety of practical resources** Counting in 2s e.g. counting socks, shoes, animal's legs… Counting in 5s e.g. counting fingers, fingers in gloves, toes… Counting in 10s e.g. fingers, toes… **Pictures / marks** There are 3 sweets in one bag. How many sweets are there in 5 bags? 	**Arrays and repeated addition** ● ● ● ● 4 x 2 or 4 + 4 ● ● ● ● 2 x 4 or 2 + 2 + 2 + 2 

			<u>Use partitioning to double 2 - digit numbers</u> 15 22 / \ / \ 10 5 20 2 I I I I 20 10 40 4 \ / \ / 30 44

Year 3	Year 4	Year 5	Year 6
X = signs and missing numbers 7 x 2 = △ 7 x △= 21 △ x △= 24 △ x 4 = 36 △ = 2 x 7 25 = △ x 5 30 = △ x △ 40 = 5 x △	**X = signs and missing numbers** 3 x 6 = △ 9 x △ = 36 △ x △ = 42 △ x 4 = 48 △ = 8 x 6 54 = △ x 6 36 = △ x △ 27 = 3 x △	**X = signs and missing numbers** Continue using a range of equations as in Year 4 and begin to use more than one operation e.g. 5 x △ = 38 + 2 64 - △ = 7 x 8	**X = signs and missing numbers** Continue using a range of equations as in Year 4 + 5 and more than one operation e.g. (7 x 8) – 2 = △ x 9 (6 x △) – 5 = 28 + 3
Arrays and repeated addition  3 x 2 = 2 + 2 + 2 = 6 2 x 3 = 3 + 3 = 6 3 x 2 + 2 x 3 = 6  4 x 3 = 3 + 3 + 3 + 3 =12 3 x 4 = 4 + 4 + 4 = 12 4 x 3 = 3 x 4 = 12	**Arrays and repeated addition** Continue to use arrays with less able pupils. Reinforce understanding that: 4 x 23 = 23 + 23 + 23 + 23 = 92 3 x 51 = 51 + 51 + 51 = 153		
Use partitioning to double 2 - digit numbers 35 → 30, 5 → 60, 10 → 70 48 → 40, 8 → 80, 16 → 96	**Use partitioning to double 2 and 3 - digit numbers** 96 → 90, 6 → 180, 12 → 192 378 → 300, 70, 8 → 600, 140, 16 → 756	**Use partitioning to double 3 and 4 - digit numbers and decimals (1d.p.)** 4678 → 4000, 600, 70, 8 → 8000, 1200, 140, 16 → 9356 6.2 → 6, 0.2 → 12, 0.4 → 12.4	**Use partitioning to double 4 - digit numbers and decimals (2d.p.)** 8745 → 8000, 700, 40, 5 → 16,000, 1400, 80, 10 → 17,490 7.85 → 7, 0.8, 0.05 → 14, 1.6, 0.1 → 15.7

Partition to multiply a 2-digit number by a single digit number

23 x 4 = (20 x 4) + (3 x 4)
= 80 + 12
= 92

This may be refined to:

23	23
x 4	x 4
10 x 4 = 40	20 x 4 = 80
10 x 4 = 40	3 x 4 = 12
3 x 4 = 12	92
92	

Partition using the grid method

48 x 6

x	40	8	
6	240	48	= 288

Partition to multiply a 3-digit number by a single digit number

365 x 6 = (300 x 6) + (60 x 6) + (5 x 6)
= 1800 + 360 + 30
= 2190

This may be refined to:

356
x 6
300 x 6 = 1800
60 x 6 = 360
5 x 6 = 30
2190
1

Partition using the grid method

864 x 8

x	800	60	4	
8	6400	480	32	= 6912

Partition to multiply a 4-digit number by a single digit number

4658 x 8 = (4000 x 8) + (600 x 8)
+ (50 x 8) + (8 x 8)
= 32,000 + 4800 + 400 + 64
= 37,264

This may be refined to:

4658
x8
4000 x 8 = 32,000
600 x 8 = 480
50 x 8 = 400
8 x 8 = 64
32,944

Partition using the grid method to multiply 2 – and 3 - digit numbers by 2 - digit numbers

24 x 32

x	20	4	
30	600	120	720
2	40	8	+ 48
			768

376 x 56

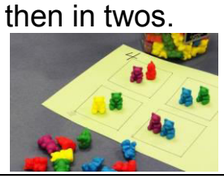
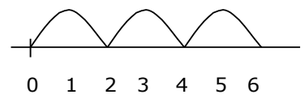
x	300	70	6	
50	15,000	3500	300	18,800
6	1800	420	36	+ 2 256
				21,056
				11

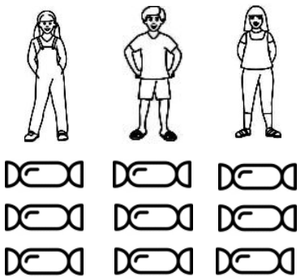
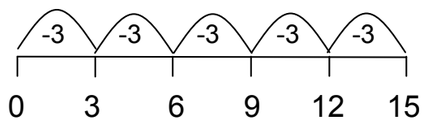
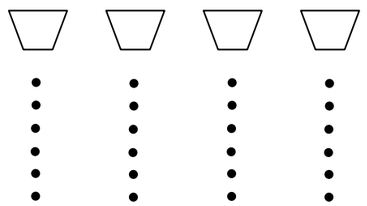
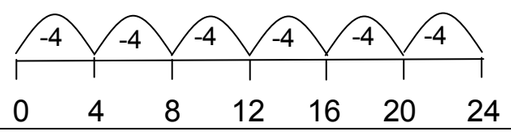
MAT pupils will multiply decimals using the grid method

42.4 x 2.6

x	40	2	0.4	
2	80	4	0.8	84.8
0.6	24	1.2	0.24	+ 25.4
				110.2
				11

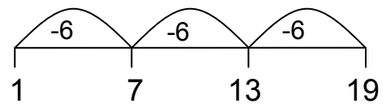
Terrace Road Calculation Policy – Division

Nursery	Reception	Year 1	Year 2
		÷ = signs and missing numbers 6 ÷ 2 = △ △ = 6 ÷ 2 6 ÷ △ = 3 3 = 6 ÷ △ △ ÷ 2 = 3 3 = △ ÷ 2 △ ÷ △ = 3 3 = △ ÷ △	**÷ = signs and missing numbers** 6 ÷ 2 = △ △ = 6 ÷ 2 6 ÷ △ = 3 3 = 6 ÷ △ △ ÷ 2 = 3 3 = △ ÷ 2 △ ÷ △ = 3 3 = △ ÷ △
Sharing and grouping Start to talk about sharing objects into equal groups Use related vocabulary Activities might include: • Sharing of milk at break time • Sharing sweets on a child's birthday • Sharing activities in the home corner	**Sharing and grouping** Share objects into equal groups Use related vocabulary Activities might include: • Sharing of milk at break time • Sharing sweets on a child's birthday • Sharing activities in the home corner • Count in tens/twos • Separate a given number of objects into two groups Count in twos, tens How many times? How many are left/left over? Group Answer Right, wrong What could we try next? How did you work it out? Share out Half, halve Use a variety of contexts for number lines, bead strings, cubes, small world, money etc… I have 6 socks in the bag. How many socks are there? Check the answer by counting the socks in ones and then in twos. 	**Sharing and grouping** Requires secure counting skills -see counting and understanding number strand Develops importance of one-to-one correspondence See appendix for additional information on x and ÷ and aspects of number Sharing – 6 sweets are shared between 2 people. How many do they have each?  Practical activities involving sharing, distributing cards when playing a game, putting objects onto plates, into cups, hoops etc. Sorting objects into 2s / 3s/ 4s etc How many pairs of socks are there?  There are 12 bulbs. Plant 3 in each pot. How many pots are there? Jo has 12 Lego wheels. How many cars can she make?	**Sharing and grouping** Link to counting and understanding number strand Count up to 100 objects by grouping them and counting in tens, fives or twos; Find one half, one quarter and three quarters of shapes and sets of objects 6 ÷ 2 can be modelled as: There are 6 strawberries. How many people can have 2 each? How many 2s make 6? 6 ÷ 2 can be modelled as:  In the context of money count forwards and backwards using 2p, 5p and 10p coins Practical grouping e.g. in PE 12 children get into teams of 4 to play a game. How many teams are there? 

Year 3	Year 4	Year 5	Year 6
÷ = signs and missing numbers 18 ÷ 2 = △ 27 ÷ △ = 9 △ ÷ 4 = 6 △ ÷ △ = 5 △ = 16 ÷ 2 6 = 30 ÷ △ 7 = 21 ÷ △ 6 = △ ÷ △	**÷ = signs and missing numbers** 18 ÷ 6 = △ 36 ÷ △ = 9 △ ÷ △ = 8 △ ÷ 5 = 6 △ = 48 ÷ 6 6 = △ ÷ 9 6 = △ ÷ △ 7 = 21 ÷ △	**÷ = signs and missing numbers** Continue using a range of equations as in Year 4 but include examples using different operations e.g. 48 ÷ □ = 50 - 42 □ ÷ 6 = 25 ÷ 5 (3 x 5) – 9 = □ ÷ 3	**÷ = signs and missing numbers** Continue using a range of equations as in Year 4 + 5 and more than one operation e.g. (18 ÷ 6) + 5 = 48 ÷ □ (□ ÷ 5) – 2 = 49 ÷ 7
Understand division as sharing and grouping (repeated subtraction) 15 ÷ 3 can be modelled as: Sharing – 15 sweets are shared between 3 children. How many do they have each? 15 ÷ 3 = 5  Grouping – There are 15 sweets. How many children can have 3 each? (How many 3s make 15?) Model using concrete equipment e.g multi-link before on a number line. 15 ÷ 3 = 5 	**Understand division as sharing and grouping (repeated subtraction)** 24 ÷ 4 can be modelled as: Sharing – 24 seeds to be planted are shared between 4 pots. How many seeds are planted in each pot? 24 ÷ 4 = 6  Grouping – There are 24 seeds. 4 seeds can be planted in each pot. How many pots are needed? (How many 4s make 24) Continue to model using concrete equipment to reinforce division as repeated subtraction e.g. multi-link before on a number line. 24 ÷ 4 = 	**Understand division as sharing and grouping (repeated subtraction)** Continue to understand division as both sharing and grouping (repeated subtraction).	**Understand division as sharing and grouping (repeated subtraction)** Continue to understand division as both sharing and grouping (repeated subtraction).

<table>
<tr>
<td></td>
<td><u>Introduce remainders</u>

19 ÷ 6 = 3 r 1
Sharing – 19 shared between 6. How many left over?
Grouping – How many 6’s are in 19? How many left over?

19 ÷ 6 = 3 r 1

</td>
<td><u>Introduce expressing remainders as fractions</u>

141 ÷ 8 = 17 5/8

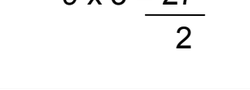
7 x 8 10 x 8


5 61 141</td>
<td><u>Express remainders as fractions or decimals where appropriate</u>

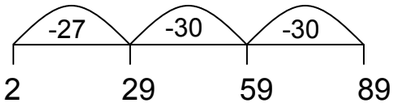
676 ÷ 8 = 84 ½ or 84.5

461 ÷ 4 = 115 ¼ or 115.25</td>
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<td><u>Divide 2 – digit numbers by a single digit number – introduce chunking</u>

56 ÷ 4 = 14

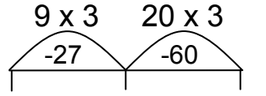
4 x 4 10 x 4


0 16 56

89 ÷ 3 = 29 r 2
9 x 3 10 x 3 10 x 3


2 29 59 89

This may be refined to:

9 x 3 20 x 3


2 29 89

or the vertical layout

29 r 2
3 | 89
20 x 3 = 60
29
9 x 3 = 27
2</td>
<td><u>Divide 3 - digit numbers by a single digit number – chunking</u>

925 ÷ 6 = 154 r1

4 x 6 50 x 6 100 x 6

1 25 325 925

or

154 r1
6 | 925
100 x 6 = 600
325
5 x 6 = 300
25
4 x 6 = 24
1</td>
<td><u>Divide 3 - digit numbers by 2 single digit numbers – chunking</u>

534 ÷ 21 = 25 r 9

5 x 21 20 x 21

9 114 534

or

25 r9
21 | 534
10 x 21 = 210
324
10 x 21 = 210
114
5 x 21 = 105
9

This may be refined to:

25 3/7
21 | 534
20 x 21 = 420
114
5 x 21 = 105
9

MAT pupils may be introduced to short division.</td>
</tr>
</table>