National Curriculum

Number and Place Value

- Read, write, order and compare numbers to 1 000 000
- Count forward in 10s, 100s, 1000, 10 000s and 100 000s for any given number up to one million
- Count forwards from negative numbers through zero to positive numbers including fractions and decimals
- Describe linear sequences and find the term-to-term rule (-6 -2 2 .....)

Addition

- Add whole numbers with more than 4 digits, including using column addition
- Add increasingly large numbers mentally
- Use rounding to check calculations
- Solve multi-step problems in context including money and measures
- Add fractions with denominators that are multiples of the same number
- Use all four operations in problems involving time
- Solve problems up to 3 decimal places
- Describe and recognise linear sequences including decimals and fractions and find the term to term rule.

Mental and practical strategies

Partitioning

134 + 28 + 21= 134+ 20 + 20 + 8 + 1
1189 + 426 = 1189 + 400 + 20+ 6
5.31 + 4.52 = 5.31 + 4 + 0.5 + 0.02

Doubles

634+634= 2x600 + 2x30 + 2x4

Near doubles

75 + 78 = 2x75 + 3 = 150 + 3
2.28 + 2.25 – 2 x 2.25 + 0.03 = 4.5 + 0.03

Use number bonds to 10 and 100

129 + 71 = 200

Compensating

5.7 + 3.9 = 5.7 + 4.0 – 0.1
138 + 69 = 138 + 70 -1 = 208 - 1

Use patterns of similar circumstances

3 + 9 = 12
30 + 90 = 120
300+900=1200

Use known number facts

28 + 28 + 29 = 3x20 + 3X 8 + 1
28 + 28 + 29 = 3 x 30 - 5

Use inverse relationships

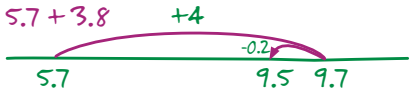
58.4 = 34 + ◊
solved by counting up 34 + 20 + 4 + 0.4
solved by subtraction 58.4 – 34.0

Fractions

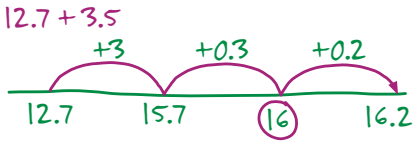
Fractions with denominators that are multiples of the same number.
5/6 + 2/3 + 2/3 =
5/6 + 4/6 + 4/6 = 13/6 = 2 1/6
Use Cuisenaire to show equivalence between $^{2}/_{3}$ and $^{4}/_{6}$

Informal Methods

Compensating using the number line

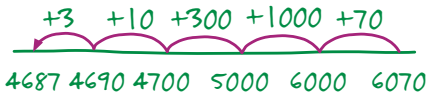


Target whole numbers



Use inverse relationships and bridging multiples of ten

6070 - 4687 = 1383
Calculated by counting up:



Rounding / Estimating

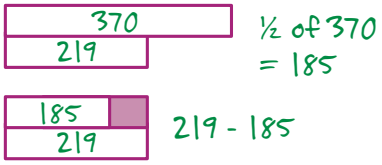
37+412 ≅ 40 + 410
0.78 + 1.34 ≅ 0.8 + 1.3

Linear seqences

Look at the common difference between terms. In this case it is +1.2 so the next two terms are 5.9 and 7.1
2.3 3.5 4.7 …… …….

Bar method/ Rod diagrams

I have read 219 pages of a book of 370 pages. How many pages have I read beyond the middle?



Formal methods

Column addition with exchanging.

The method is revised using Dienes as demonstrated in earlier years.

	TTh	Th	H	T	U
	4	5	5	4	7
+	3	1	3	8	6
		8	9	4	2
	8	5	8	7	5
	1	1	1	1	

	T	U	.	1/10	1/100
	1	9	.	0	7
		3	.	9	0
+		4	.	8	2
		2	.	7	0
	3	0	.	4	9
	2	2			

	T	U	.	1/10	1/100	1/1000
	1	9	.	0	3	6
+		9	.	8	1	0
		7	.	4	0	7
	3	6	.	2	5	3
	2	1			1	

Addition of decimals takes place in puzzles beyond measurement and money problems
Add decimals up to 3 decimal places
Add decimals with different numbers of decimal places
Empty decimal places can be filled with a zero to indicate there is no value