Developing Fluency
Addition and Subtraction

F2	Strategies
- Introducing and embedding subitising, copying and recognising patterns / discussion. ○ Dice patterns ○ 5 frames ○ Irregular patterns to 5 ○ 10 frames 1 more 1 less - Double numbers to 5 - Halve numbers to 10 - Know number bonds to 3, 4, 5 and 10.	- Copying patterns. - Saying how many without counting.

Y1	Strategies

• Embedding subitising, copying and recognising patterns / discussion.
     o Build on and embed, consolidate F2 work.
     o Irregular patterns to 8.
     o 10 frames – regular and irregular.
     o Teen numbers and beyond.
     o Counting in 10s and 5.
 • Double numbers to 10
 • Halve numbers to 20
 • Double multiples of 10 to 50
 • Halve multiples of 10 to 100
 • Embed number bonds to 3, 4, 5.
 • Learn bonds to 6, 7, 8, 9.
 • Embed and recall bonds to 10.
 NCETM number facts from grid.	

• add or subtract a pair of single digit numbers, e.g. 3 + 8, 8 – 3	• reorder numbers when adding, e.g. put the larger number first • count on or back in ones, twos and tens
• add or subtract a single digit number to or from a teens number, e.g. 13 + 5, 17 – 4	• **partition** to help add and subtract a single digit to or from a teens number, e.g. 8 + 3 = 8 + 2 + 1 and 17 – 4 = 17 – 2 - 2 • **partition** and combine tens and ones, e.g. 10 + 7 = 17
• add or subtract a single digit number to or from 10 and add a multiple of 10 to a single digit number, e.g. 10 + 7, 7 + 30 • add near doubles, e.g. 6 + 7	• **partition** to add near doubles: double and adjust, e.g. 6 + 7 = 6 + 6 + 1 • counting in multiples of 10, or groups of 10, e.g. 5 tens – 2 tens.
• Adding and subtracting multiples of 10 to 100, e.g. 50-20.	

Y2	Strategies
NCETM number facts from grid. - add or subtract 2 or more single digit numbers, e.g. 3 + __ + 2 = 9, 6 + 7 + 4 or 9 + 6 - __ = 11 - Add and subtract a 1 digit number to/from a 2-digit number, without and then with bridging, e.g. 22+5 / 38-6; 27+9 / 43-7 - Add and subtract 2 2-digit numbers without bridging, e.g. 23 + 14 / 47 – 24 - add or subtract a multiple of 10 to or from any 2–digit number, e.g. 27 + 60, 72 – 50 - add or subtract 9, 19, 29, … or add or subtract 11, 21, 31 - add near doubles, e.g. 13 + 14, 39 + 40	- reorder numbers, e.g. use knowledge of pairs making 10 and 20 **partition** and combine multiples of tens and ones **partition** - bridge through 10 and multiples of 10 when adding and subtracting, e.g. 28 + 5 = 28 + 2 + 3 = 33 **partition -** count up from the smallest number to find a difference bridging through multiples of 10, e.g. 23 – 18, 18 + ___ = 23, 18 **+ 2 + 3** = 23, 18 + **5** = 23 **partition and recombine** - count on or back in tens to find the total or to find the difference, e.g. 60 + 27 = 60 + 20 + 7 = 80 + 7 = 87 **partition** (compensating) – add a multiple of 10 and adjust by 1, e.g. 56 + 9 = 56 + 10 – 1 = 65 or 87 – 9 = 87 – 10 + 1 = 78 **partition** to add near doubles: double and adjust, e.g. 39 + 40 = 40 + 40 – 1 = 79

Y3	Strategies
• add or subtract a 2-digit number to or from a multiple of 10, including crossing the hundreds boundary, e.g. 70 + 38, 110 – 27	• **partition** - count on or back in tens to find the total or difference as well as knowledge of number bonds to 10, e.g. 110 – 27 = 110 – 20 – 7 = 90 – 7 = 83
• add or subtract multiples of 10 crossing the hundreds boundary, e.g. 50 + 80, 120 – 90	• **partition** – bridging through a 100 and multiples of 100 when adding and subtracting, e.g. 50 + 80 = 50 + 50 + 30 = 80 + 20 + 30 = 100 + 30 = 130 • subtract by counting up from the smaller to the larger number when the numbers are close together, e.g. for 120 – 90 90 + ___ = 120, 90 + **10 + 20** = 120, 90 + **30** = 120
• add or subtract 2-digit numbers e.g. 34 + 65, 68 – 35	• **partition** – add tens and ones separately then recombine. • Sequencing (**partitioning** only one number) – e.g. 55 + 42 = 55 + 40 + 2 = 97 or for 54 – 27 = 54 – 20 – 7 = 27 • Also use bridging techniques, e.g. 49 + 32 as 49 + 1 + 31
• find number pairs to total 100 e.g. 33 + __ 100, 100 - __ = 27	• identify pairs totalling ten and add multiples of 10
• add or subtract a 3-digit number to a 1-digit number, e.g. 325 + 6, 453 – 7	• **partition** - bridge through multiples of 10 when adding and subtracting, e.g. 325 + 6 = 325 + 5 + 1 = 331, 453 – 7 = 453 – 3 – 4 = 450 – 4 = 446
• finding a small difference between a pair of 2-digit numbers lying either side of a multiple of 100, e.g. 605 - 596	• **partition** - count up from the smallest number to find a difference, e.g. 605 - 596, 596 + ___ = 605, 596 **+ 4 + 5** = 605, 596 + **9** = 605

Y3(cont)	Strategies
• double any multiples of 10 to 100, e.g. 90 + 90, 70 + 70	• use knowledge of place value and related facts, e.g. use 9 + 9 = 18 to work out 90 + 90
• add near doubles, e.g. 60 + 70, 18 + 16, beginning with a difference of 1 or 10, then 2 / 20.	• **partition** to add near doubles: double and adjust, e.g. 18 + 16 = 17 + 17 = 20 + 14
• add or subtract fractions with the same denominator within one whole (e.g. $^5/_7 + ^1/_7 = ^6/_7$)	• **partition** – count on and back in fractions with different denominators
• doubling 2-digit numbers mentally	
• simple differences in time	• Partition and recombing, e.g. 37: double 30 (60) double 7 (14) and add 60 and 14.

Y4	Strategies
• add or subtract any pair of 2-digit numbers, including crossing the tens and hundreds boundary, e.g. 47 + 58, 91 – 35	• **partition** in different ways, e.g. 73-68 (68+2+3), 47 + 58 (47 + 50 + 3 + 5), 127 – 47 (124 – 40 – 4 – 3), 75 + 28 (75 + 25 +3).
• add or subtract a near multiple of 10, e.g. 56 + 29, 86 – 38	• **partition** – round to add or subtract a multiple of 10 and adjust, e.g. 56 + 29 = 56 + 30 – 1 = 85 or 86 – 38 = 86 – 40 + 2 = 48
• add any 2 numbers together to total a multiple of 100, e.g. 521 + __ = 600 or 278 + ___ = 300	• use knowledge of number bonds to 10 and 100
• add or subtract 2-digit or 3-digit multiples of 10, e.g. 120 – 40, 140 + 150, 370 – 180	• use knowledge of place value and related calculations, e.g. work out 140 + 150 = 290 using 14 + 15 = 29
• add or subtract 2-digit or 3-digit multiples of 10, e.g. 120 – 40, 140 + 150, 370 – 180	• **partition** – add or subtract then recombine • use knowledge of place value and related calculations, e.g. work out double 790 from double 79
• double and halve 3 digit multiples of 10, e.g. double 790, halve 560	• **partition** to add near doubles: double and adjust, e.g. 38 + 37 = 38 + 38 = 76 – 1 = 75
• add near doubles or 2-digit numbers, e.g. 38 + 37	
• add and subtract fractions with the same denominator	• **partition** – count on and back in fractions with different denominators

Y4 (cont)	Strategies

• Calculating time intervals	• Bridging through 60, forwards and back using a number line initially, e.g.
	  o 'I get up at 40 minutes after 6.30m. What time is that?'
	  o 'What is the time 50 minutes before 1.10pm?'
	  o It is 4.25pm. How many minutes to 5.05pm?'

Y5	Strategies

• add or subtract a near multiple of 10 or 100 to any 2-digit or 3-digit number, e.g. 235 + 198
• finding a small difference between a pair of 2-digit numbers lying either side of a multiple of 1000, e.g. 7003 - 6899
 	
• add any 2 numbers together to total a multiple of 1000, e.g. 4087 + _____ = 5000
 	
• add or subtract any pairs of decimals with ones and tenths, e.g. 5.7 + 2.5, 6.3 – 4.8
 	
• add and subtract fractions with the same denominator and multiples of the same number, e.g. $\frac{4}{6} + \frac{2}{3} = \frac{4}{3} = 1\frac{1}{3}$
 	
• decimal bonds to 1, e.g. 0.83 + 0.17
• add or subtract three decimal numbers with reordering, e.g. 1.7 + 2.8 + 0.3
 	
• Calculating time intervals
	• **partition** (compensating) – add a multiple of 100 and adjust, e.g. 235 + 198 = 235 + 200 - 2 = 435 - 2 = 433
	• **partition** - count up from the smallest number to find a difference, e.g. 7003 - 6899, 6899 + _____ = 7003, 6899 **+ 1 + 100 + 3** = 7003, 6899 + **104** = 7003
	• use knowledge of number bonds to 10, 100 and 1000
	
	• use knowledge of place value and related calculations, e.g. 6.3 – 4.8 using 63 – 48
	• partition - add ones and tenths then recombine
	• Sequencing (**partitioning** only one number) – e.g. 5.7 + 2.5 = 5.7 + 2 + 0.5 = 7.7 + 0.3 + 0.2 = 8 + 0.2 = 8.2
	
	• **partition** – count on and back in fractions with different denominators, linking to decimal and percentage equivalents
	
	• **partition, e.g.**
	   o 'What time will it be 26 minutes after 3.30am?'
	   o What time was it 33 minutes before 2.15pm?'
	   o It is 4.18pm. How many minutes to 5.00pm? 5.26pm?'

Y6	Strategies

• add or subtract pairs of decimals with ones, tenths or hundredths, e.g. 0.7 + 3.38 or 0.68 + 0.43
 	
• Calculating time intervals
	• **partition, e.g.**
	   o 'It is 08.35. How many minutes to 09.15?'
	   o It is 11.45. How many hours and minutes is it to 15.20?'
	   o A train leaves for Leeds at 22.33. The journey takes 2 hours 47 minutes. What time does the train arrive?'

• to add or subtract a decimal with ones and tenths, which is nearly a whole number, e.g. 4.3 + 2.9, 6.5 – 3.8 • to find doubles of decimals each with ones and tenths, e.g. 2.6 + 2.6 • to add near doubles of decimals, e.g. 3.7 + 3.6	• count on or back in tenths, hundredths and thousandths • use knowledge of place value and related calculations, e.g. 680 + 430, 6.8 + 4.3, 0.68 + 0.43 can all be worked out using the related calculation 68 + 43 • Sequencing (**partitioning** only one number) – e.g. 5.74 + 2.66 = 5.74 + 2 + 0.66 = 7.74 + 0.66 = 7.74 + 0.26 + 0.4 = 8 + 0.4 = 8.4 • **partition** (compensating) – add or subtract a whole number and adjust, e.g. 4.3 + 2.9 = 4.3 + 3 – 0.1 = 7.2, 6.5 – 3.8 = 6.5 – 4 + 0.2 = 2.7 • **partition** - add ones and tenths then recombine • **partition** to add near doubles: double and adjust, e.g. 3.7 + 3.6 = 3.6 + 3.6 = 7.2 + 0.1 = 7.3

Y6 (cont)	Strategies
• add and subtract fractions with different denominators and mixed numbers, e.g. $\frac{3}{4} - \frac{2}{16} = \frac{5}{8}$	• find a common denominator to help add and subtract fractions **partition** – count on and back in fractions with different denominators, linking to decimal and percentage equivalents