Additive Fluency: all key stages starting in EYFS.

Starting in Key Stage 1 and EYFS, we aim to improve pupils' fluency with the 121 additive facts that support all calculation involving addition or subtraction, in order to develop their mathematical literacy. It is essential that these are practised regularly (not just in EYFS and Key Stage 1) as they form the building blocks to being able to solve larger calculations from Year 2 onwards.

Strategies for facts within 10	**Examples**
Adding one	(e.g. 7 + 1 & 1 + 7)
Adding two to even numbers	(e.g. 4 + 2 & 2 + 4)
Adding two to odd numbers	(e.g. 5 + 2 & 2 + 5)
Adding zero	(e.g. 3 + 0 & 0 + 3)
Number bonds to ten	(e.g. 8 + 2 & 2 + 8)
Near number bonds to ten	(e.g. 6 + 3, 3 + 6)
Doubles of numbers to five	(e.g. 3 + 3, 4 + 4 & 5 + 5)
Near doubles of numbers to five	(e.g. 3 + 4, 4 + 3, 4 + 5 & 5 + 4)
Number in the middle	(e.g. 3 + 5, 5 + 3)
Strategies for bridging 10	**Examples**
Adding ten to a single-digit number	(e.g. 5 + 10 and 10 + 5)
Doubles of numbers to ten	(e.g. 6 + 6, 7 + 7, 8 + 8, 9 + 9 & 10 + 10)
Near doubles	(e.g. 5 + 6 or 6 + 5 'Double 5 and add one.')
Bridging	(e.g. 8 + 5 or 5 + 8 'Regroup to make a ten.')
Number in the middle	(e.g. 6 + 8 or 8 + 6 'Double the number in the middle: double 7')
Compensating	(e.g. 7 + 9 'Add ten to 7 and subtract one.')

By year 2 children should have automatic recall of the facts below and their corresponding subtraction facts.

+	0	1	2	3	4	5	6	7	8	9	10
0	0+0	0+1	0+2	0+3	0+4	0+5	0+6	0+7	0+8	0+9	0+10
1	1+0	1+1	1+2	1+3	1+4	1+5	1+6	1+7	1+8	1+9	
2	2+0	2+1	2+2	2+3	2+4	2+5	2+6	2+7	2+8		
3	3+0	3+1	3+2	3+3	3+4	3+5	3+6	3+7			
4	4+0	4+1	4+2	4+3	4+4	4+5	4+6				
5	5+0	5+1	5+2	5+3	5+4	5+5					
6	6+0	6+1	6+2	6+3	6+4						
7	7+0	7+1	7+2	7+3							
8	8+0	8+1	8+2								
9	9+0	9+1									
10	10+0										

Edale Rise Mental Fluency Curriculum: Rapid Recall

	Facts	Examples	
Year 1	• Number pairs with a total of 10	3 + 7	3 + ♦ = 10
	• Addition and subtraction facts within 10.	2 + 3, 4 + 1	
	• Doubles of all numbers to 10	Double 7	
	• Odd and even numbers to 20	Is 15 odd or even?	
Year 2	• Addition and subtraction facts for all numbers up to at least 10	3 + 4	8 – 5
	• Number pairs with totals to 20	16 + 4	17 + ♦ = 20
	• All pairs of multiples of 10 with totals up to 100	30 + 70	60 + ♦ = 100
	• What must be added to any two-digit number to make the next multiple of 10	52 + ♦ = 60	43 + ♦ = 50
	• Doubles for all numbers to 20, multiples of 10 to 50 and corresponding halves	17 + 17	Double 40
	• Odd and even numbers to 100	Is 35 odd or even?	
	• Recognise multiples of 2, 5, and 10	Is 75 a multiple of 5?	
Year 3	• Multiplication and division facts for 2, 3, 4, 5, 6, 8 and 10 times tables	6 x 8	40 ÷ 5
	• Recognise multiples of 2, 3, 4, 5, 6, 8 and 10	Is 38 a multiple of 4?	
	• Addition and subtraction facts for all numbers to 20	9 + 8	17 – 9
	• Sums and differences of multiples of 10 where the answer is between 0 and 100	70 + 30,	120 - 90
	• Pairs of two-digit numbers with a total of 100	56 + 44 = ♦	32 + ♦ = 100
	• Double and halves of multiples of 10 to 100	Double 80	Half 70
	• Multiplying two-digit number by 10	24 x 10	49 x 10
Year 4	• Multiplication and division facts to 12 x 12	7 x 8	63 ÷ 9
	• Recognise multiples of 2, 3, 4, 5, 6, 7, 8, 9, 10, 11 and 12	Is 71 a multiple of 9?	
	• Addition and subtraction of multiples of 10	70 + 30	80 + 90
	• Addition and subtraction of multiples of 100 where the answer is 1,000 or less	300 + 400	1400 - 800
	• Doubles and halves of any whole number to 100	Half 70	Double 51
	• Doubles of multiples of 10 and 100 and corresponding halves	Double 800	Half of 1600
	• Halves of any even number to 100	Half 22	Half 96
	• Recall fraction and decimal equivalents for one-half, quarters, tenths and hundredths	0.3 = $\frac{3}{10}$	$\frac{1}{4}$ = 0.25,
Year 5	• Addition and subtraction of multiples of 10, 100 and 1000	70 + 30,	1100 - 300
	• Quadruples (x4) of all numbers to 10	Quadruple 7	
	• Doubles and halves of any two-digit number to 1 decimal place	Half of 3.5	Double 98
	• Multiplying and dividing any number by 10, 100 and 1000	45 ÷ 100	3.4 x 10
	• Identify factor pairs of two-digit numbers	Factors of 36	
	• Recall fraction and decimal equivalents for one-half, three-quarters, tenths and hundredths	0.56 = $\frac{56}{100}$	$\frac{3}{4}$ = 0.75,
	• Identify prime numbers less than 100	Is 89 prime?	
	• Squares of all number up to 12	11^2	8^2
	• Cubes of 2,3,4 and 5	4^3	5^3
Year 6	• Doubles and halves of any two-digit number to 1 decimal place	Half of 3.5	Double 98
	• Decimal number bonds to any whole number up to 10	3.4 + ♦ = 7	
	• Unit fraction of any number where the answer is a whole	$\frac{1}{7}$ of 56 = 56 ÷ 7	
	• Equivalent fraction, decimal and percentages facts for one-half, one-quarter, three-quarters, one-fifth and one-third	$\frac{1}{5}$ = 20% = 0.20	
	• Equivalent fraction, decimal and percentages facts for tenths and hundredths	$\frac{4}{10}$ = 40% = 0.40 = $\frac{40}{100}$	

Edale Rise Mental Fluency Curriculum: Progression of Key Strategies

Addition and Subtraction Strategies			
1	Count on or back in ones from any two digit number	12, 13, __	17, 16, ___
1	Near doubles to 10	6 + 7	7 + 8
2	Calculations with whole numbers which do not involve crossing place value boundaries	30 + 47 23 + 45	34 + 23
2	Counting on or back in tens from any number	23 + 10	27 + 60
2	Compensating and adjusting to 10	34 + 9 (34 + 10 – 1)	37 – 9 (37 – 10 + 1)
3	Calculations with whole numbers to 100 which involve crossing place value boundaries	42 – 24	
3	Compensating and adjusting near multiples of 10	38 + 68 (38 + 70 – 2) 45 – 29 (45 – 30 + 1)	
3	Counting on or back in hundreds from any number	570 + 300	
4	Compensating and adjusting near multiples of 10 or 100	138 + 69 (138 + 70 – 1) 299 – 48 (300 – 48 – 1) 235 + 198 (235 + 200 – 2) 607 – 588 (607 – 600 + 12)	
4	Near doubles of multiples to 10 beyond 100	60 + 70 160 + 170	
4	Calculations with whole numbers beyond 100 which involve crossing place value boundaries	276 - 189	
5	Counting on or back in tenths and/or hundredths	3.2 + 0.6	1.7 + 0.55
5	Calculations with decimal numbers which do not involve crossing place value boundaries	5.6 + 3.2 4.7 – 3.5	21.34 + 3.12
5	Calculations with decimal numbers which involve crossing place value boundaries	1.4 + 1.7 5.7 + 6.9	0.8 + 0.35

Edale Rise Mental Fluency Curriculum: Progression of Key Strategies

Multiplication and Division Strategies			
1	Count forwards and backwards in 2s, 5s and 10s.	2, 4, 6, __, ___	100, 90, 80, ___
2	Double multiples of 5 and 10 to 50 and the corresponding halves	Double 35	Half 70
2	Find half of any even number to 40 or multiple of 10 to 100	Half 80	Half 26
3	Multiply a one or two-digit number by 10 or 100	37 x 10	47 x 100
3	Double multiples of 5 and 10 to 100 and the corresponding halves	Double 85	Half 170
3	Find half of any multiple of 10 up to 200 and even number up to 200.	Half 170	Half 196
4	Multiply numbers to 1000 by 10 and then 100	325 x 10	54 x 100
4	Divide numbers to 1000 by 10 and then 100 (whole number answers)	500 ÷ 100	850 ÷ 10
4	Multiply a multiple of 10 to 100 by a single-digit number	60 x 3	50 x 7
4	Find unit fractions and simple non-unit fractions of whole numbers	$\frac{3}{8}$ of 24	$\frac{1}{5}$ of 35
4	Doubles and halves of any two-digit number and any multiple of 10 or 100	Half 680	Double 73
4	Form equivalent calculations and use doubling and halving: multiply by 4 by doubling twice, multiply by 8 by doubling three times, divide by 4 by halving twice, divide by 8 by halving three times	16 × 4 = 32 × 2 = 64 12 × 8 = 24 × 4 = 48 × 2 = 96	104 ÷ 4 = 52 ÷ 2 = 26 104 ÷ 8 = 52 ÷ 4 = 26 ÷ 2 = 13
4	Multiply a 2-digit number by a single digit by partitioning	26 x 3	17 x 3
5	Use multiplication facts to derive products and related division facts to multiply and divide by multiples of 10 and 100	900 x 8 60 x 30 300 x 500	600 ÷ 20 800 ÷ 400 2100 ÷ 300
5	Multiply and divide whole numbers and decimals by 10, 100 or 1000	4.3 x 100	25 ÷ 10
5	Form equivalent calculations and use doubling and halving: multiply by 5 by multiplying by 10 then halving multiply by 20 by doubling then multiplying by 10 multiply by 50 by multiplying by 100 and halving	18 × 5 = 180 ÷ 2 = 90 45 x 20 = 90 x 10 8 x 50 = 8 x 100 ÷ 2	**5**
5	Find $\frac{1}{10}$ of any given number where answers are up to 1 decimal places	$\frac{1}{10}$ of 365	$\frac{1}{10}$ of £284
5	Use place value to derive multiplication and division facts involving decimals	0.6 x 8	3.5 ÷ 7
6	Find 10% or multiples of 10% of whole numbers and quantities	30% of £50	40% of 200g
6	Find 50% by halving and 25% of numbers and quantities	25% of 150kg	50% of £900
6	Double and half decimal number with up to one decimal place by partitioning	Half 8.4	Double 9.6
6	Divide a multiple of 25 by 25 dividing by 100 then multiplying by 4	350 ÷ 25 = 350 ÷ 100 x 2 x2	
6	Divide a multiple of 50 by 50 by dividing by 100 then doubling	450 ÷ 50= 450 ÷ 10 x 2	
6	Find the doubles and halves of any number up to 10,000 by partitioning	Half 32, 022	
6	Multiply decimals numbers up to 2 decimals places by whole numbers	3.42 x 4	