

Primary Maths Fluency © Progression Framework – Year 1

Y1	Challenge No.	NEW LEARNING	Domain
Autumn	1	count to and across 100, forwards and backwards, beginning with 0 or 1, or from any given number	Number - number and place value
	2	count, read and write numbers to 100 in numerals;	
	3	count in multiples of 2s and 5s	
	4	count in multiples of 10s	
	5	given a number, identify 1 more and 1 less	
	6	identify and represent numbers using objects and pictorial representations including the number line, and use the language of: equal to, more than, less than (fewer), most, least	
	7	read and write numbers from 1 to 20 in numerals and words	
	8	read, write and interpret mathematical statements involving addition (+), subtraction (-) and equals (=) signs	Number - addition and subtraction
	9	represent and use number bonds and related subtraction facts within 20	
	10	add and subtract one-digit and two-digit numbers to 20, including 0	
	11	solve missing number problems such as $7 = ? - 9$	
	12	recognise, find and name a half as 1 of 2 equal parts of an object, shape or quantity	
Spring	13	recognise, find and name a quarter as 1 of 4 equal parts of an object, shape or quantity	Number - Fractions
	14	measure and begin to record the following: lengths and heights	Measurement
	15		
	16	measure and begin to record the following: mass/weight	
	17		
	18	measure and begin to record the following: capacity and volume	
	19		
	20	measure and begin to record the following: time (hours, minutes, seconds)	
	21		
	22	compare, describe and solve practical problems for: lengths and heights [for example, long/short, longer/shorter, tall/short, double/half]	
	23		
	24	compare, describe and solve practical problems for: mass/weight [for example, heavy/light, heavier than, lighter than]	
Summer	25	compare, describe and solve practical problems for: capacity and volume [for example, full/empty, more than, less than, half, half full, quarter]	
	26		
	27	compare, describe and solve practical problems for: time [for example, quicker, slower, earlier, later]	
	28		
	29	measure and begin to record the following: recognise and know the value of different denominations of coins and notes	
	30		
	31	measure and begin to record the following: sequence events in chronological order using language [for example, before and after, next, first, today, yesterday, tomorrow, morning, afternoon and evening]	
	32	recognise and use language relating to dates, including days of the week, weeks, months and years	
	33	tell the time to the hour and half past the hour and draw the hands on a clock face to show these times	
	34	recognise and name common 2-D and 3-D shapes, including: 2-D shapes [for example, rectangles (including squares), circles and triangles]	Geometry - properties of shapes
35	recognise and name common 2-D and 3-D shapes, including: 3-D shapes [for example, cuboids (including cubes), pyramids and spheres]		
36	describe position, direction and movement, including whole, half, quarter and three-quarter turns	Geometry - position and direction	

Primary Maths Fluency © Progression Framework – Year 2

Y2	Challenge No.	NEW LEARNING	Domain
Autumn	1	count in steps of 2, 3, and 5 from 0, and in 10s from any number, forward and backward	Number - number and place value
	2	recognise the place value of each digit in a two-digit number (10s, 1s)	
	3	identify, represent and estimate numbers using different representations, including the number line	
	4	compare and order numbers from 0 up to 100; use <, > and = signs	
	5	read and write numbers to at least 100 in numerals and in words	
	6	recall and use addition and subtraction facts to 20 fluently, and derive and use related facts up to 100	Number - addition and subtraction
	7	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 1s	
	8	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: a two-digit number and 10s	
	9	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: 2 two-digit numbers	
	10	add and subtract numbers using concrete objects, pictorial representations, and mentally, including: adding 3 one-digit numbers	
	11	show that addition of 2 numbers can be done in any order (commutative) and subtraction of 1 number from another cannot	
	12	recognise and use the inverse relationship between addition and subtraction and use this to check calculations and solve missing number problems	
Spring	13	recall and use multiplication and division facts for the 2 and 10 multiplication tables	Number - multiplication and division
	14	recall and use multiplication and division facts for the 5 multiplication table	
	15	recognising odd and even numbers	
	16	calculate mathematical statements for multiplication and division within the multiplication tables and write them using the multiplication ( $\times$ ), division ( $\div$ ) and equals (=) signs	
	17	show that multiplication of 2 numbers can be done in any order (commutative) and division of 1 number by another cannot	
	18	recognise, find, name and write fractions one third, one quarter, two quarters and three quarters of a length, shape, set of objects or quantity	Number - Fractions
	19	write simple fractions, for example one half of 6 = 3 and recognise the equivalence of two quarters and one half	Measurement
	20	choose and use appropriate standard units to estimate and measure length/height in any direction (m/cm); mass (kg/g); temperature ( $^{\circ}$ C); capacity (litres/ml) to the nearest appropriate unit, using rulers, scales, thermometers and measuring vessels	
	21	compare and order lengths, mass, volume/capacity and record the results using >, < and =	
	22	recognise and use symbols for pounds (£) and pence (p); combine amounts to make a particular value	
	23	find different combinations of coins that equal the same amounts of money	
	24	solve simple problems in a practical context involving addition and subtraction of money of the same unit, including giving change	
25	compare and sequence intervals of time		
26	tell and write the time to five minutes, including quarter past/to the hour and draw the hands on a clock face to show these times	Geometry - properties of shapes	
27	know the number of minutes in an hour and the number of hours in a day		
28	identify and describe the properties of 2-D shapes, including the number of sides, and line symmetry in a vertical line		
29	identify and describe the properties of 3-D shapes, including the number of edges, vertices and faces		
30	identify 2-D shapes on the surface of 3-D shapes, [for example, a circle on a cylinder and a triangle on a pyramid]		
31	compare and sort common 2-D and 3-D shapes and everyday objects	Geometry - position and direction	
32	order and arrange combinations of mathematical objects in patterns and sequences		
33	use mathematical vocabulary to describe position, direction and movement, including movement in a straight line and distinguishing between rotation as a turn and in terms of right angles for quarter, half and three-quarter turns (clockwise and anti-clockwise)		
34	interpret and construct simple pictograms, tally charts, block diagrams and tables	Statistics	
35	ask and answer simple questions by counting the number of objects in each category and sorting the categories by quantity		
36	ask-and-answer questions about totalling and comparing categorical data		

Primary Maths Fluency © Progression Framework – Year 3

Y3	Challenge No.	NEW LEARNING	Domain
Autumn	1	count from 0 in multiples of 4, 8, 50 and 100	Number - number and place value
	2	find 10 or 100 more or less than a given number	
	3	recognise the place value of each digit in a 3-digit number (100s, 10s, 1s)	
	4	compare and order numbers up to 1,000	
	5	identify, represent and estimate numbers using different representations	
	6	read and write numbers up to 1,000 in numerals and in words	
	7	add and subtract numbers mentally, including: a three-digit number and 1s	Number - addition and subtraction
	8	add and subtract numbers mentally, including: a three-digit number and 10s	
	9	add and subtract numbers mentally, including: a three-digit number and 100s	
	10	add and subtract numbers with up to 3 digits, using formal written methods of columnar addition and subtraction	
	11	estimate the answer to a calculation and use inverse operations to check answers	
	12	solve problems, including missing number problems, using number facts, place value, and more complex addition and subtraction	
Spring	13	recall and use multiplication and division facts for the 3 and 4 multiplication tables	Number - multiplication and division
	14	recall and use multiplication and division facts for the 8 multiplication table	
	15	write and calculate mathematical statements for multiplication and division using the multiplication tables that they know, including for two-digit numbers times one-digit numbers, using mental and progressing to formal written methods	
	16	solve problems, including missing number problems, involving multiplication and division, including positive integer scaling problems and correspondence problems in which $n$ objects are connected to $m$ objects	
	17	count up and down in tenths; recognise that tenths arise from dividing an object into 10 equal parts and in dividing one-digit numbers or quantities by 10	Number - Fractions (including decimals)
	18	recognise, find and write fractions of a discrete set of objects: unit fractions and non-unit fractions with small denominators	
	19	recognise and use fractions as numbers: unit fractions and non-unit fractions with small denominators	
	20	recognise and show, using diagrams, equivalent fractions with small denominators	
	21	add and subtract fractions with the same denominator within one whole	
	22	compare and order unit fractions, and fractions with the same denominators	
	23	measure, compare, add and subtract: lengths (m/cm/mm); mass (kg/g); volume/capacity (l/ml)	Measurement
	24	measure the perimeter of simple 2-D shapes	
Summer	25	add and subtract amounts of money to give change, using both £ and p in practical contexts	Measurement
	26	tell and write the time from an analogue clock, including using Roman numerals from I to XII, and 12-hour and 24-hour clocks	
	27	estimate and read time with increasing accuracy to the nearest minute; record and compare time in terms of seconds, minutes and hours; use vocabulary such as o'clock, am/pm, morning, afternoon, noon and midnight	
	28	know the number of seconds in a minute and the number of days in each month, year and leap year	
	29	compare durations of events [for example, to calculate the time taken by particular events or tasks]	
	30	draw 2-D shapes and make 3-D shapes using modelling materials; recognise 3-D shapes in different orientations and describe them	Geometry - properties of shapes
	31	recognise angles as a property of shape or a description of a turn	
	32	identify right angles, recognise that 2 right angles make a half-turn, 3 make three-quarters of a turn and 4 a complete turn;	
	33	identify whether angles are greater than or less than a right angle	
	34	identify horizontal and vertical lines and pairs of perpendicular and parallel lines	
	35	interpret and present data using bar charts, pictograms and tables	Statistics
	36	solve one-step and two-step questions [for example 'How many more?' and 'How many fewer?'] using information presented in scaled bar charts and pictograms and tables	

Primary Maths Fluency © Progression Framework – Year 4

Y4	Challenge No.	NEW LEARNING	Domain	
Autumn	1	count in multiples of 6, 7, 9, 25 and 1,000	Number - number and place value	
	2	find 1,000 more or less than a given number		
	3	count backwards through 0 to include negative numbers		
	4	recognise the place value of each digit in a four-digit number (1,000s, 100s, 10s, and 1s)		
	5	order and compare numbers beyond 1,000		
	6	identify, represent and estimate numbers using different representations		
	7	round any number to the nearest 10, 100 or 1,000		
	8	read Roman numerals to 100 (I to C) and know that over time, the numeral system changed to include the concept of 0 and place value		
	9	add and subtract numbers with up to 4 digits using the formal written methods of columnar addition and subtraction where appropriate	Number - addition and subtraction	
	10	estimate and use inverse operations to check answers to a calculation		
	Spring	11	recall multiplication and division facts for multiplication tables up to $12 \times 12$	Number - multiplication and division
		12	use place value, known and derived facts to multiply and divide mentally, including: multiplying by 0 and 1; dividing by 1; multiplying together 3 numbers	
13		recognise and use factor pairs	Number - Fractions (including decimals)	
14		multiply two-digit and three-digit numbers by a one-digit number using formal written layout		
15		recognise and show, using diagrams, families of common equivalent fractions		
16		count up and down in hundredths; recognise that hundredths arise when dividing an object by 100 and dividing tenths by 10		
17		add and subtract fractions with the same denominator		
18		recognise and write decimal equivalents of any number of tenths or hundreds		
19		recognise and write decimal equivalents to one quarter, one half and three quarters		
20		find the effect of dividing a one- or two-digit number by 10 and 100, identifying the value of the digits in the answer as ones, tenths and hundredths		
21		round decimals with 1 decimal place to the nearest whole number		
22		compare numbers with the same number of decimal places up to 2 decimal places		
Summer	23	convert between different units of measure [for example, kilometre to metre; hour to minute]	Measurement	
	24	measure and calculate the perimeter of a rectilinear figure (including squares) in centimetres and metres		
	25	find the area of rectilinear shapes by counting squares		
	26	estimate, compare and calculate different measures, including money in pounds and pence		
	27	read, write and convert time between analogue and digital 12- and 24-hour clocks	Geometry - properties of shapes	
	28	compare and classify geometric shapes, including quadrilaterals and triangles, based on their properties and sizes		
	29	identify acute and obtuse angles and compare and order angles up to 2 right angles by size		
	30	identify lines of symmetry in 2-D shapes presented in different orientations	Geometry - position and direction	
	31	complete a simple symmetric figure with respect to a specific line of symmetry		
	32	describe positions on a 2-D grid as coordinates in the first quadrant		
33	describe movements between positions as translations of a given unit to the left/right and up/down	Statistics		
34	plot specified points and draw sides to complete a given polygon			
35	interpret and present discrete and continuous data using appropriate graphical methods, including bar charts and time graphs			
	36	solve comparison, sum and difference problems using information presented in bar charts, pictograms, tables and other graphs		

Primary Maths Fluency © Progression Framework – Year 5

Y5	Challenge No.	NEW LEARNING	Domain
Autumn	1	read, write, order and compare numbers to at least 1,000,000 and determine the value of each digit	Number - number and place value
	2	count forwards or backwards in steps of powers of 10 for any given number up to 1,000,000	
	3	interpret negative numbers in context, count forwards and backwards with positive and negative whole numbers, including through 0	
	4	round any number up to 1,000,000 to the nearest 10, 100, 1,000, 10,000 and 100,000	
	5	read Roman numerals to 1,000 (M) and recognise years written in Roman numerals	
	6	add and subtract whole numbers with more than 4 digits, including using formal written methods (columnar addition and subtraction)	Number - addition and subtraction
	7	use rounding to check answers to calculations and determine, in the context of a problem, levels of accuracy	
	8	identify multiples and factors, including finding all factor pairs of a number, and common factors of 2 numbers	Number - multiplication and division
	9	know and use the vocabulary of prime numbers, prime factors and composite (non-prime) numbers	
	10	establish whether a number up to 100 is prime and recall prime numbers up to 19	
	11	multiply numbers up to 4 digits by a one- or two-digit number using a formal written method, including long multiplication for two-digit numbers	
	12	divide numbers up to 4 digits by a one-digit number using the formal written method of short division and interpret remainders appropriately for the context	
Spring	13	multiply and divide whole numbers and those involving decimals by 10, 100 and 1,000	Number - Fractions (including decimals and percentages)
	14	recognise and use square numbers and cube numbers, and the notation for squared ( $^2$ ) and cubed ( $^3$ )	
	15	compare and order fractions whose denominators are all multiples of the same number	
	16	identify, name and write equivalent fractions of a given fraction, represented visually, including tenths and hundredths	Number - Fractions (including decimals and percentages)
	17	recognise mixed numbers and improper fractions and convert from one form to the other and write mathematical statements $> 1$ as a mixed number	
	18	add and subtract fractions with the same denominator, and denominators that are multiples of the same number	
	19	multiply proper fractions and mixed numbers by whole numbers, supported by materials and diagrams	
	20	read and write decimal numbers as fractions	
	21	recognise and use thousandths and relate them to tenths, hundredths and decimal equivalents	
	22	round decimals with 2 decimal places to the nearest whole number and to 1 decimal place	
	23	read, write, order and compare numbers with up to 3 decimal places	Measurement
	24	convert between different units of metric measure [for example, kilometre and metre; centimetre and metre; centimetre and millimetre; gram and kilogram; litre and millilitre]	
Summer	25	understand and use approximate equivalences between metric units and common imperial units such as inches, pounds and pints	Measurement
	26	measure and calculate the perimeter of composite rectilinear shapes in centimetres and metres	
	27	calculate and compare the area of rectangles (including squares), including using standard units, square centimetres ( $\text{cm}^2$ ) and square metres ( $\text{m}^2$ ), and estimate the area of irregular shapes	
	28	estimate volume [for example, using $1 \text{ cm}^3$ blocks to build cuboids (including cubes)] and capacity [for example, using water]	
	29	identify 3-D shapes, including cubes and other cuboids, from 2-D representations	Geometry - properties of shapes
	30	know angles are measured in degrees: estimate and compare acute, obtuse and reflex angles	
	31	draw given angles, and measure them in degrees ( $^\circ$ )	
	32	identify: angles at a point and 1 whole turn (total $360^\circ$ ); angles at a point on a straight line and half a turn (total $180^\circ$ ); other multiples of $90^\circ$	
	33	distinguish between regular and irregular polygons based on reasoning about equal sides and angles	Geometry - position and direction
	34	identify, describe and represent the position of a shape following a reflection or translation, using the appropriate language, and know that the shape has not changed	
	35	solve comparison, sum and difference problems using information presented in a line graph	Statistics
	36	complete, read and interpret information in tables, including timetables	

Primary Maths Fluency © Progression Framework – Year 6

Y6	Challenge No.	NEW LEARNING	Domain
Autumn	1	read, write, order and compare numbers up to 10,000,000 and determine the value of each digit	Number - number and place value
	2	round any whole number to a required degree of accuracy	
	3	use negative numbers in context, and calculate intervals across 0	
	4	multiply multi-digit numbers up to 4 digits by a two-digit whole number using the formal written method of long multiplication	Number - addition, subtraction, multiplication and division
	5	divide numbers up to 4 digits by a two-digit whole number using the formal written method of long division, and interpret remainders as whole number remainders, fractions, or by rounding, as appropriate for the context	
	6	divide numbers up to 4 digits by a two-digit number using the formal written method of short division where appropriate, interpreting remainders according to the context	
	7	identify common factors, common multiples and prime numbers	
	8	use their knowledge of the order of operations to carry out calculations involving the 4 operations	
	9	use estimation to check answers to calculations and determine, in the context of a problem, an appropriate degree of accuracy	
	10	use common factors to simplify fractions; use common multiples to express fractions in the same denomination	Number - Fractions (including decimals and percentages)
	11	compare and order fractions, including fractions >1	
	12	add and subtract fractions with different denominators and mixed numbers, using the concept of equivalent fractions	
Spring	13	multiply simple pairs of proper fractions, writing the answer in its simplest form and divide proper fractions by whole numbers	Ratio and proportion
	14	associate a fraction with division and calculate decimal fraction equivalents	
	15	identify the value of each digit in numbers given to 3 decimal places and multiply and divide numbers by 10, 100 and 1,000 giving answers up to 3 decimal places	
	16	multiply one-digit numbers with up to 2 decimal places by whole numbers	Algebra
	17	use written division methods in cases where the answer has up to 2 decimal places	
	18	solve problems involving the relative sizes of 2 quantities where missing values can be found by using integer multiplication and division facts	
	19	solve problems involving the calculation of percentages [for example, of measures and such as 15% of 360] and the use of percentages for comparison	
	20	solve problems involving unequal sharing and grouping using knowledge of fractions and multiples	
	21	use simple formulae	
	22	generate and describe linear number sequences	Measurement
	23	express missing number problems algebraically	
	24	find pairs of numbers that satisfy an equation with 2 unknowns	
Summer	25	use, read, write and convert between standard units, converting measurements of length, mass, volume and time from a smaller unit of measure to a larger unit, and vice versa, using decimal notation to up to 3 decimal places	Measurement
	26	recognise when it is possible to use formulae for area and volume of shapes	
	27	calculate the area of parallelograms and triangles	
	28	calculate, estimate and compare volume of cubes and cuboids using standard units, including cubic centimetres (cm <sup>3</sup> ) and cubic metres (m <sup>3</sup> ), and extending to other units [for example, mm <sup>3</sup> and km <sup>3</sup> ]	Geometry - properties of shapes
	29	recognise, describe and build simple 3-D shapes, including making nets	
	30	compare and classify geometric shapes based on their properties and sizes and find unknown angles in any triangles, quadrilaterals, and regular polygons	
	31	illustrate and name parts of circles, including radius, diameter and circumference and know that the diameter is twice the radius	
	32	recognise angles where they meet at a point, are on a straight line, or are vertically opposite, and find missing angles	
	33	describe positions on the full coordinate grid (all 4 quadrants)	
	34	draw and translate simple shapes on the coordinate plane, and reflect them in the axes	Geometry - position and direction
	35	interpret and construct pie charts and line graphs and use these to solve problems	Statistics
	36	calculate and interpret the mean as an average	