

# Lower maths

Route map 2024/25

# Lower School Route Map

Wk1		Wk2		Wk3		Wk4		Wk5		Wk6		Wk7	
				Money		Number; place value, the four operations							
Half Term 21 Oct – 1 Nov													
Wk8		Wk9		Wk10		Wk11		Wk12		Wk13		Wk14	
Number; fractions, decimals, percentages													
Christmas 23 Dec – 3 Jan													
Wk15		Wk16		Wk17		Wk18		Wk19		Wk20		Wk21	
Measurement; money, time, units of measurement													
Half Term 24 – 28 Feb													
Wk22		Wk23		Wk24		Wk25		Wk26		Wk27			
Geometry; shapes, angles, position and direction													
Easter 14 Apr – 25 April (in BH)													
Wk28		Wk29		Wk30		Wk31							
Statistics & probability													
Half Term 26 – 30 May													
Wk32		Wk33		Wk34		Wk35		Wk36		Wk37		Wk38	
Ratio				Algebra				End of year assessment					

# Half Term 1

Wk3		Wk4	Wk5	Wk6	Week 7	
Money		Basic Number – place value		Basic Number – addition and subtraction	Basic Number – multiplication and division Assessment	
KS3 5-6	develop their use of formal mathematical knowledge to interpret and solve problems, including in financial mathematics			Interpret and compare numbers in standard form Recognise and use integer powers of 2, 3, 4, 5 and roots (square and cube) distinguishing between exact answers and approximations Use the concepts of prime numbers, factors, multiples, common factors, common multiples, highest common factor, lowest common multiples, prime factorisation, including product notation Use the four operations applied to integers, decimals, both positive and negative, using the order of operations, including brackets, powers, roots and reciprocals		
3-4	solve simple measure and money problems involving fractions and decimals to 2 decimal places	Solve problems in a range of contexts Interpret negative numbers, including credit and debit in money Count forward and backwards with positive and negative numbers including through zero. Count (out loud) forward and backward in powers of 10 Round numbers to a required degree of accuracy including 2dp for money Round numbers to nearest 10, 100, 1000, 10000 and 100 000 Recognise and describe number sequences Read, write, order and compare numbers to 1 000 000 or 10 000 000 and determine the value of each digit		Solve addition and subtraction multi step problems Use rounding to check answers to calculations and identify levels of accuracy Add and subtract numbers mentally Add and subtract whole numbers with more than 4 digits	Solve multi step problems using the four operations and the order of operations. Know and recognise prime numbers ( up to 100), and prime factors and composite numbers Identify multiples and factors, common factors and common multiples of 2 numbers Perform mental calculations including Multiply and divide and mixed operations using the order of operation (bidmas) Round the results of multiplications and divisions to a required degree of accuracy Divide numbers up to 4 digits by a 2 digit whole number, understanding remainders Divide numbers up to 4 digits by a 1 digit number Multiply multi digit numbers by a 2 digit whole number Multiply numbers up to 4 digit x 1 or 2 digit number Multiply and divide whole numbers by 10, 100 and 1000	
Lower 1-2	Add and subtracts amounts of money to give change in practical contexts, using both £ and p	Solve simple number problems in a range of contexts Estimate numbers in a range of contexts Compare and order numbers up to 1000 in a variety of contexts (money, length etc.) Recognise place value of each digit in a 3 digit number Count from 0 in multiples of (2), (3), 4, (5), 8, 50, and 100 Read and write numbers up to 1000 in numerals and words		Solve simple problems in a range of contexts Use inverse operations to check answers Estimate the answer to a calculation Add and subtract numbers mentally Add and subtract numbers with up to 3 digits (Add and subtract numbers up to 20) (Show that addition of 2 numbers can be done in any order)	Solve simple number problems involving multiplication and division including scaling problems Carry out mental multiplication and division calculations Carry out calculations using multiplication tables, including 2 digit numbers x 1 digit numbers Recall and use multiplication and division facts for (2), 3, 4, (5), 8 and (10) times tables	

# Half Term 2

Wk8	Wk9	Wk10	Wk11	Wk12	Wk13	Wk14
Number - fractions		Number - decimals		Number - percentage		Assessment

KS3 5-6	<p>Calculate fractions of amounts</p> <p>Work interchangeably with terminating decimals and their corresponding fraction</p>	<p>Work interchangeably with terminating decimals and their corresponding fraction</p> <p>Round numbers to dp and significant figures (SF)</p> <p>Use approximation to estimate answers and calculate possible resulting errors</p> <p>Use a calculator to calculate results accurately</p>	<p>Calculate percentage change</p> <p>Express one quantity as a percentage of another, including greater than 100%</p> <p>Interpret percentages as a fraction</p> <p>Compare 2 quantities using percentages</p> <p>Define percentage as a number of parts per hundred</p> <p>Use a calculator to calculate results accurately</p>	<p>Solve a problem which requires knowing and applying percentages, decimals and fractions and equivalents (measure and/or money)</p>
Upper KS2 3-4	<p>Calculate fractions of numbers and amounts</p> <p>Simplify fractions</p> <p>Divide fractions by whole numbers</p> <p>Multiply pairs of fractions</p> <p>Add and subtract fractions with the same denominator and denominators that are multiples of the same number, with a result less than and greater than 1</p> <p>Recognise and convert between mixed numbers and improper fractions visually</p> <p>Identify and name equivalent fractions, represented visually</p> <p>Identify sequences with fractions</p> <p>Count forward and backward in fractions, including tenths etc</p> <p>Compare and order fractions whose denominators are multiples of the same number</p>	<p>Solve problems involving decimal numbers up to 3 dp that require rounding, including recurring decimals</p> <p>Divide decimal numbers by 1 digit whole numbers in a practical context</p> <p>Multiply 1 digit number with up to 2 dp by whole numbers</p> <p>Add and subtract decimals with differing numbers of dp</p> <p>Recognise and use common equivalent fractions and decimals.</p> <p>Convert decimal numbers to fractions and vice versa and check the reasonableness of their answer</p> <p>Round decimals to the nearest whole number and to 1dp</p> <p>Compare decimal numbers with up to 3 decimal places</p> <p>Recognise and use decimal place value; tenths, hundredths and thousandths</p>	<p>Calculate percentages of numbers and amounts</p> <p>Write percentages as fractions with a denominator of 100 and then as a decimal</p> <p>Understand that "percentage of" means multiply</p> <p>Understand that 100% represents a whole quantity, but that you can have percentages over 100%</p> <p>Recognise the % sign and understand that per cent relates to a "number of parts per hundred"</p>	
Lower KS2(1) 1-2	<p>Solve simple measure and money problems involving fractions</p> <p>Add and subtract fractions with the same denominator</p> <p>Recognise and show common equivalent fractions</p> <p>Count up and down in fractions</p>	<p>Solve simple measure and money problems involving decimals to 2dp</p> <p>Compare numbers with the same number of decimal places (up to 2dp) including on a number line</p> <p>Recognise and write decimal equivalents for <math>\frac{1}{4}</math>, <math>\frac{1}{2}</math>, <math>\frac{3}{4}</math></p> <p>Divide 1 or 2 digit whole numbers by 10 and 100 and recognise the place value of the answer.</p>		

# Half Term 3

Wk15	Wk16	Wk17	Wk18	Wk19	Wk20	Wk21
Measurement - money	Measurement - time		Measurement			Assessment

KS3 5-6	Use all four operations to solve problems involving money	Solve problems converting between units of time	Calculate perimeter (circumference) of circles Calculate perimeter & area of triangle Calculate volume of cubes and cuboids Draw and measure angles	
Upper KS2 3-4			Solve problems involving the calculation and conversion of units of measure; up to 3 dp Use all four operations to solve problems involving length, mass capacity/volume whole numbers and decimals up to 2 dp Convert between miles and km Understand and use approximate equivalences between metric and imperial units; inches, pounds, pints Calculate the volume of cubes and cuboids Estimate volume and capacity Calculate the area of parallelograms and triangles Recognise that shapes with the same area can have different perimeters & vice versa Estimate the area of irregular shapes Measure and calculate the perimeter of composite rectilinear shapes; cm & m Calculate and compare the area of rectangles Convert between different units of metric measure; length, mass and volume	
Lower KS2(1) 1-2	Estimate and compare amounts of money Add and subtracts amounts of money to give change in practical contexts, using both £ and p	Compare durations of events Estimate and read time to the nearest minute Record and compare time in terms of seconds, minutes and hours Know the number of seconds in a minute and the number of days in each month, year and leap year Tell and write the time from analogue clocks and 12 and 24 hour clocks	Convert between different units of metric measure; length, mass and volume Find the area of rectilinear shapes by counting squares Measure the perimeter of simple 2D shapes; rectilinear, square in cm & m Estimate and compare different measures; length, mass, capacity Measure, compare, add and subtract (integers, fractions, decimals with up to 3 digits): length (m.cm.mm); mass (kg/g), Volume/capacity (l/ml)	

# Half Term 4

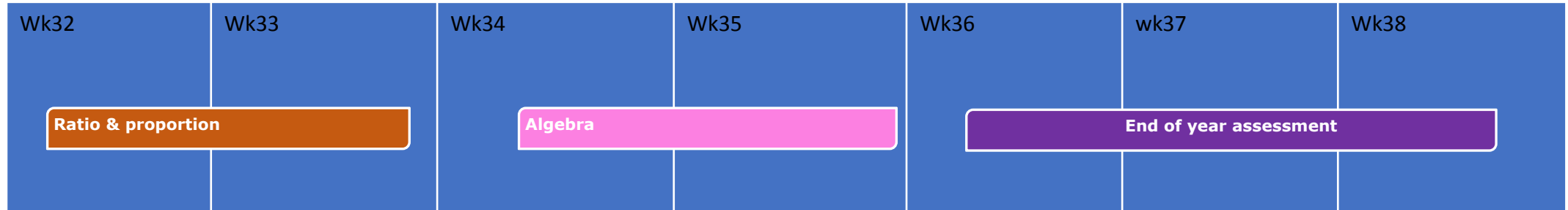
Wk22	Wk23	Wk24	Wk25	wk26	Wk27
Geometry – Shapes & angles			Geometry – position and direction		Assessment

KS3 5-6	<p>Calculate volume of cubes and cuboids and other prisms</p> <p>Calculate and solve problems; perimeter, area; inc triangles, parallelograms, circles and composite shapes.</p>	<p>Apply the properties of angles at a point, on a straight line and vertically opposite</p> <p>Describe, sketch and draw; points, lines, parallel lines, perpendicular lines, right angles, regular polygons</p>	<p>Construct enlargement of shapes</p> <p>Translate, rotate and reflect given shapes across 4 quadrants</p> <p>Recognise congruent triangles</p>	
Upper KS2 3-4	<p>Identify 3D shapes from 2D representations (nets)</p> <p>Recognise a shape that has been reflected or translated</p>	<p>Illustrate and name parts of a circle; radius, diameter and circumference &amp; know <math>d = 2 \times r</math></p> <p>Distinguish between regular and irregular polygons</p> <p>Find unknown angles in triangles, quadrilaterals and regular polygons</p> <p>Use the properties of shapes and lines to find missing lengths and angles</p> <p>Recognise vertically opposite angles (are equal)</p> <p>Identify angles at a point = <math>360^\circ</math></p> <p>Identify angles on a straight line = <math>180^\circ</math></p> <p>Draw 2D shapes with given dimensions and angles</p> <p>Draw and measure angles</p> <p>Estimate and compare acute, obtuse and reflex angles</p> <p>Know angles are measured in degrees</p>	<p>Describe positions on the full coordinate grid (4 quadrants)</p> <p>Reflect and translate shapes using coordinates in the first quadrant; reflection to be in axes or lines parallel to axes.</p> <p>Identify and describe the position and shape following a translation or reflection and know that the shape has not changed (congruent)</p>	
Lower KS2(1) 1-2	<p>Identify the number of edges, faces and vertices in 3D shapes</p> <p>Recognise and make 3D shapes</p> <p>Compare and classify shapes based on their properties</p> <p>Identify the number of sides and lines of symmetry in 2D shapes</p> <p>Draw 2D shapes &amp; complete symmetrical shapes with a line of symmetry</p> <p>Sort everyday shapes and objects into 2D and 3D shapes</p>	<p>Identify pairs of perpendicular and parallel lines</p> <p>Identify horizontal and vertical lines</p> <p>Identify acute and obtuse angles</p> <p>Identify whether angles are greater or less than a right angle</p> <p>Identify right angles &amp; that 2 x right angle make a half turn etc.</p> <p>Recognise angles as a property of shape &amp; describe a turn</p>	<p>Plot specified points and draw sides to complete a given polygon</p> <p>Describe movements between positions as translations of a given unit to the left/right and up/down</p> <p>Describe positions on a 2D grid as coordinates in the first quadrant</p>	

# Half Term 5

	Wk29	Wk29	Wk30	wk31
	Statistics			Probability
KS3 5-6	Describe the relationship between 2 variables in observational & experimental contexts using scatter diagrams. Describe, interpret and compare discrete, continuous and grouped data. <u>Describe and calculate mean, mode, median and range</u> Construct and interpret tables, charts and diagrams, including frequency tables, <u>bar charts, pie charts, pictograms</u> , vertical line charts			Interpret Venn diagrams Understand that the probabilities of all possible outcomes sum to 1 <u>Record probability on the 0 – 1 probability scale.</u> <u>Record, describe and analyse the frequency of simple probability experiments using randomness, fairness, equally and unequally likely outcomes, using appropriate vocabulary.</u>
Upper KS2 3-4	<u>Calculate and interpret the mean as an average</u> Link work on angles, fractions etc to pie charts Use pie charts and line graphs to solve problems <u>Interpret and construct pie charts and line graphs</u> with 2 variables from their own enquiry			Record, describe and analyse the frequency of simple probability experiments using likely, unlikely, equally and unequally likely, fair outcomes, using appropriate vocabulary.
Lower KS2(1) 1-2	Solve comparison, sum and difference problems using info presented in scaled bar charts, pictograms and tables. <u>Understand and use simple scales</u> Interpret discrete and continuous data; bar charts, <u>time graphs to record change over time</u> <u>Interpret and present data using bar charts, pictograms and tables in different contexts</u>			Understand the vocabulary of probability; likely, unlikely

# Half Term 6



KS3 5-6	<p>Use distance/time relationship to understand speed Use scale factors, scale diagrams and maps Divide a given quantity into 2 parts in a given ratio Reduce ratios to simplest form Use ratio notation (a:b)</p>	<p>Recognise geometric sequences and generate terms Solve linear equations with 1 variable Substitute numerical values into expressions and formulae Simplify expressions Understand the difference between an expression and an equation or formulae. Use and interpret algebraic notation; <math>ab</math>, <math>3y</math>, <math>a^2</math>, <math>a/b</math></p>	
Upper KS2 3-4	<p>Solve problems using unequal sharing Solve problems involving similar shapes where the scale factor is known or can be found. Solve problems involving the relative sizes of 2 quantities where missing values can be found using integer multiplication or division. Understand the notation <math>a:b</math>; for every <math>a</math> you need <math>b</math></p>	<p>Express missing numbers problems algebraically Enumerate possibilities of combination of 2 variables. Find pairs of numbers that satisfy an equation with 2 unknowns Generate and describe simple number sequences Use simple formulae Understand algebraic notation</p>	
Lower KS2(1) 1-2	<p>Recognise proportionality in contexts such as recipes</p>		