

This Scheme of Work offers a flexible approach to teaching KS3 Maths in Year 7 and Year 8. It is based on a minimum of seven one hour Maths lessons per fortnight (assuming a two week timetable of three lessons in one week and four in the second). There are assessment and review sessions built in. The core text is *KS3 Maths Now Learn and Practice Book*.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
Year 7 term 1				
1-2	7	Chapter 1 Factors and multiples	1.1 Factors and highest common factors	<ul style="list-style-type: none"> understand and use highest common factors.
			1.2 Multiples and common multiples	<ul style="list-style-type: none"> understand and use lowest common multiples.
			1.3 Prime factors	<ul style="list-style-type: none"> understand what prime numbers are find the prime factors of an integer.
3-4	7	Chapter 2 Sequences	2.1 Sequences and rules	<ul style="list-style-type: none"> recognise, describe and generate sequences that use a simple rule.
			2.2 Working out missing terms	<ul style="list-style-type: none"> work out missing terms in a sequence.
			2.3 Other sequences	<ul style="list-style-type: none"> know and understand the sequences of numbers known as the square numbers and the triangular numbers.
			2.4 The nth term of a sequence	<ul style="list-style-type: none"> use the nth term of a sequence.
			2.5 Finding the nth term	<ul style="list-style-type: none"> work out the nth term of a sequence.
5-6	5	Chapter 3 Perimeter and area	3.1 Perimeter and area of a rectangle	<ul style="list-style-type: none"> use a simple formula to calculate the perimeter of a rectangle use a simple formula to calculate the area of a rectangle.
			3.2 Compound shapes	<ul style="list-style-type: none"> work out the perimeter and area of a compound shape.
			3.3 Area of a triangle	<ul style="list-style-type: none"> work out the area of a triangle.
			3.4 Area of a parallelogram	<ul style="list-style-type: none"> work out the area of a parallelogram.
			3.5 Area of a trapezium	<ul style="list-style-type: none"> work out the area of a trapezium.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
	2	Assessment and review		
7	Half-term holiday			
8-9	7	Chapter 4 Negative numbers	4.1 The number line	<ul style="list-style-type: none"> use a number line to order positive and negative numbers, including decimals understand and use the symbols $<$ (less than) and $>$ (greater than).
			4.2 Arithmetic with negative numbers	<ul style="list-style-type: none"> carry out additions and subtractions involving negative numbers use a number line to calculate with negative numbers.
			4.3 Subtraction with negative numbers	<ul style="list-style-type: none"> carry out subtractions involving negative numbers.
			4.4 Multiplication with negative numbers	<ul style="list-style-type: none"> carry out multiplications involving negative numbers.
			4.5 Division with negative numbers	<ul style="list-style-type: none"> carry out divisions involving negative numbers.
10-11	7	Chapter 5 Averages	5.1 Mode, median and range	<ul style="list-style-type: none"> understand and calculate the mode, median and range of data.
			5.2 The mean	<ul style="list-style-type: none"> understand and calculate the mean average of data.
			5.3 Statistical diagrams	<ul style="list-style-type: none"> read and interpret different statistical diagrams.
		Chapter 6 Equivalent fractions	6.1 Equivalent fractions	<ul style="list-style-type: none"> find equivalent fractions write fractions in their simplest form.
			6.2 Adding and subtracting fractions	<ul style="list-style-type: none"> add and subtract fractions with different denominators.
			6.3 Mixed numbers and improper fractions	<ul style="list-style-type: none"> convert mixed numbers to improper fractions convert improper fractions to mixed numbers.
			6.4 Adding and subtracting mixed numbers	<ul style="list-style-type: none"> add two mixed numbers subtract one mixed number from another.
12-13	5	Chapter 7 Algebraic expressions	7.1 Order of operations	<ul style="list-style-type: none"> use the conventions of BIDMAS to carry out calculations.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			7.2 Expressions and substitution	<ul style="list-style-type: none"> use algebra to write simple expressions substitute numbers into expressions to work out their value.
			7.3 Simplifying expressions	<ul style="list-style-type: none"> simplify expressions.
			7.4 Using formulae	<ul style="list-style-type: none"> use formulae.
			7.5 Writing formulae	<ul style="list-style-type: none"> write formulae.
	2	Assessment and review		
14-15	Christmas holiday			
Year 7 term 2				
16-17	7	Chapter 8 Angles	8.1 Calculating angles	<ul style="list-style-type: none"> calculate angles at a point calculate angles on a straight line calculate opposite angles.
			8.2 Angles in a triangle	<ul style="list-style-type: none"> use the fact that the sum of the angles in a triangle is 180°.
			8.3 Angles in a quadrilateral	<ul style="list-style-type: none"> use the fact that the sum of the angles in a quadrilateral is 360°.
			8.4 Angles within parallel lines	<ul style="list-style-type: none"> calculate angles in parallel lines.
			8.5 Constructions	<ul style="list-style-type: none"> construct the mid-point and the perpendicular bisector of a line construct an angle bisector construct a perpendicular to a line from or at a given point construct a right-angled triangle.
18-19	7	Chapter 9 Decimals	9.1 Rounding numbers	<ul style="list-style-type: none"> round numbers to a given degree of accuracy.
			9.2 Multiplying and dividing by powers of 10	<ul style="list-style-type: none"> multiply and divide decimal numbers by 10, 100 and 1000.
			9.3 Putting decimals in order	<ul style="list-style-type: none"> order decimal numbers according to size.
			9.4 Estimates	<ul style="list-style-type: none"> estimate calculations in order to recognise possible errors.
			9.5 Adding and subtracting decimals	<ul style="list-style-type: none"> add and subtract decimal numbers.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			9.6 Multiplying and dividing decimals	<ul style="list-style-type: none"> multiply and divide decimal numbers by any whole number.
20-21	5	Chapter 10 Linear graphs	10.1 Coordinates	<ul style="list-style-type: none"> understand and use coordinates to locate points in all four quadrants.
			10.2 Graphs from formulae	<ul style="list-style-type: none"> draw a graph for a simple relationship.
			10.3 Graphs of $x = a$, $y = b$, $y = x$ and $y = -x$	<ul style="list-style-type: none"> recognise and draw line graphs with fixed values of x and y recognise and draw graphs of $y = x$ and $y = -x$.
			10.4 Graphs of the form $x + y = a$	<ul style="list-style-type: none"> recognise and draw graphs of the form $x + y = a$.
			10.5 Conversion graphs	<ul style="list-style-type: none"> understand how graphs are used to represent real-life situations draw and use real-life graphs.
	2	Assessment and review		
22	Half-term holiday			
23-24	7	Chapter 11 Percentages	11.1 Fractions, decimals and percentages	<ul style="list-style-type: none"> understand the equivalence between a fraction, a decimal and a percentage.
			11.2 Fractions of a quantity	<ul style="list-style-type: none"> find a fraction of a quantity.
			11.3 Percentages of quantities	<ul style="list-style-type: none"> find a percentage of a quantity.
			11.4 Percentages with a calculator	<ul style="list-style-type: none"> use a calculator to find a percentage of a quantity know when it is appropriate to use a calculator.
25-26	7	Chapter 12 3D shapes	12.1 Naming and drawing 3D shapes	<ul style="list-style-type: none"> be familiar with the names of 3D shapes and their properties use isometric paper to draw 3D shapes made from cubes.
			12.2 Using nets to construct 3D shapes	<ul style="list-style-type: none"> draw nets of 3D shapes construct 3D shapes from nets.
			12.3 Volume of a cuboid	<ul style="list-style-type: none"> use a simple formula to work out the volume of a cuboid work out the capacity of a cuboid.
			12.4 Surface area of a cuboid	<ul style="list-style-type: none"> find the surface areas of cuboids.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
27-28	5	Chapter 13 Introduction to probability	13.1 Probability words	<ul style="list-style-type: none"> know and use the correct words about probability.
			13.2 Probability scales	<ul style="list-style-type: none"> know about and use probability scales from 0 to 1 work out probabilities based on equally likely outcomes.
			13.3 Experimental probability	<ul style="list-style-type: none"> understand experimental probability understand the difference between theoretical probability and experimental probability.
	2	Assessment and review		
29-30	Easter holiday			
Year 7 term 3				
31-32	7	Chapter 14 Ratio, proportion and rates of change	14.1 Introduction to ratio	<ul style="list-style-type: none"> use ratio notation use ratios to compare quantities.
			14.2 Simplifying ratios	<ul style="list-style-type: none"> write a ratio as simply as possible.
			14.3 Ratios and sharing	<ul style="list-style-type: none"> use ratios to find totals or missing quantities.
			14.4 Ratios in everyday life	<ul style="list-style-type: none"> understand the connections between fractions and ratios understand how ratios can be useful in everyday life.
33-34	7	Chapter 15 Symmetry	15.1 Reflection symmetry	<ul style="list-style-type: none"> recognise shapes with reflective symmetry draw lines of symmetry on a shape.
			15.2 Rotation symmetry	<ul style="list-style-type: none"> recognise shapes that have rotational symmetry find the order of rotational symmetry of a shape.
			15.3 Properties of triangles and quadrilaterals	<ul style="list-style-type: none"> understand the properties of parallel, intersecting and perpendicular lines understand and use the properties of triangles understand and use the properties of quadrilaterals.
35-36	5	Chapter 16 Solving equations	16.1 Finding unknown numbers	<ul style="list-style-type: none"> find missing numbers in simple calculations.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			16.2 Solving equations	<ul style="list-style-type: none"> understand what an equation is solve equations involving one operation.
			16.3 Solving more complex equations	<ul style="list-style-type: none"> solve equations involving two operations.
			16.4 Setting up and solving equations	<ul style="list-style-type: none"> use algebra to set up and solve equations.
	2	Assessment and review		
37	Half-term holiday			
38-39	7	Chapter 17 Using data	17.1 Interpreting pie charts	<ul style="list-style-type: none"> work out the size of sectors in pie charts by their angles at the centre.
			17.2 Drawing pie charts	<ul style="list-style-type: none"> use a scaling method to draw pie charts.
			17.3 Grouped frequencies	<ul style="list-style-type: none"> understand and use grouped frequencies.
			17.4 Continuous data	<ul style="list-style-type: none"> understand and work with continuous data.
40-41	7	Chapter 18 Pencil and paper calculations	18.1 Short and long multiplication	<ul style="list-style-type: none"> choose a written method for multiplying two numbers together use written methods to carry out multiplications accurately.
			18.2 Short and long division	<ul style="list-style-type: none"> choose a written method for dividing one number by another use written methods to carry out divisions accurately.
			18.3 Calculations with measurements	<ul style="list-style-type: none"> convert between common metric units use measurements in calculations recognise and use appropriate metric units.
			18.4 Multiplication with large and small numbers	<ul style="list-style-type: none"> multiply with combinations of large and small numbers mentally.
			18.5 Division with large and small numbers	<ul style="list-style-type: none"> divide combinations of large and small numbers mentally.
42-43	7	Chapter 19 Transformations	19.1 Reflections	<ul style="list-style-type: none"> reflect a shape in a mirror line use coordinates to reflect shapes in all four quadrants.
			19.2 Rotations	<ul style="list-style-type: none"> rotate a shape about a point.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			19.3 Translations	• translate a shape.
			19.4 Tessellations	• tessellate shapes.
44-45	7	Chapter 20 Working with numbers	20.1 Powers and roots	• use powers and roots.
			20.2 Powers of 10	• multiply and divide by powers of 10.
			20.3 Rounding large numbers	• round large numbers.
			20.4 Significant figures	• round to one or more significant figures.
			20.5 Large numbers in standard form	• write a large number in standard form.
46	3.5	Assessment and review		
Year 8 term 1				
1-2	7	Chapter 21 Percentage changes	21.1 Percentage increases and decreases	• work out the result of a simple percentage change.
			21.2 Using a multiplier	• use a multiplier to calculate a percentage change.
			21.3 Calculating a percentage change	• work out a change in value as a percentage increase or decrease.
		Chapter 22 Graphs	22.1 Graphs from linear equations	• recognise and draw the graph of a linear equation.
			22.2 Gradient of a straight line	• work out the gradient of a graph from a linear equation • work out an equation of the form $y = mx + c$ from a linear graph.
3-4	7		22.3 Graphs from quadratic equations	• recognise and draw the graph from a simple quadratic equation.
		Chapter 23 Correlation	23.1 Scatter graphs and correlation	• read scatter graphs • understand correlation.
			23.2 Creating scatter graphs	• create scatter graphs.
5-6	5	Chapter 24 Congruence and scaling	24.1 Congruent shapes	• recognise congruent shapes.
			24.2 Enlargements	• enlarge a 2D shape by a scale factor.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			24.3 Shape and ratio	<ul style="list-style-type: none"> use ratio to compare lengths, areas and volumes of 2D and 3D shapes.
			24.4 Scales	<ul style="list-style-type: none"> understand and use scale drawings use map ratios.
	2	Assessment and review		
7	Half-term holiday			
8-9	7	Chapter 25 Manipulating algebraic expressions	25.1 Algebraic notation	<ul style="list-style-type: none"> simplify algebraic expressions involving the four basic operations.
			25.2 Like terms	<ul style="list-style-type: none"> simplify algebraic expressions by combining like terms.
			25.3 Expanding brackets	<ul style="list-style-type: none"> remove brackets from an expression.
			25.4 Using algebraic expressions	<ul style="list-style-type: none"> manipulate algebraic expressions identify equivalent expressions.
			25.5 Using index notation	<ul style="list-style-type: none"> write algebraic expressions involving powers.
10-11	7	Chapter 26 Working with fractions	26.1 Adding and subtracting fractions	<ul style="list-style-type: none"> add or subtract any two mixed numbers.
			26.2 Multiplying fractions	<ul style="list-style-type: none"> multiply two fractions.
			26.3 Multiplying mixed numbers	<ul style="list-style-type: none"> multiply one mixed number by another.
10-11	7	Chapter 27 Circles	26.4 Dividing fractions	<ul style="list-style-type: none"> divide one fraction or mixed number by another.
			27.1 Parts of a circle	<ul style="list-style-type: none"> define a circle and name its parts.
		27.2 Formula for the circumference of a circle	<ul style="list-style-type: none"> calculate the circumference of a circle. 	
		27.3 Formula for area of a circle	<ul style="list-style-type: none"> calculate the area of a circle. 	
		Chapter 28 Finding probabilities	28.1 Using probability scales	<ul style="list-style-type: none"> use a probability scale to represent a chance.
28.2 Mutually exclusive outcomes	<ul style="list-style-type: none"> recognise mutually exclusive outcomes. 			

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			28.3 Using sample spaces to calculate probabilities	<ul style="list-style-type: none"> use sample spaces to calculate probabilities.
12	3.5	Assessment and review		
13-14	Christmas holiday			
Year 8 term 2				
15-16	7	Chapter 29 Equations and formulae	29.1 Equations with and without brackets	<ul style="list-style-type: none"> solve equations involving brackets.
			29.2 Equations with the variable on both sides	<ul style="list-style-type: none"> solve equations with the variable on both sides.
			29.3 More complex equations	<ul style="list-style-type: none"> solve equations with fractional coefficients solve equations with brackets and fractions.
			29.4 Rearranging formulae	<ul style="list-style-type: none"> change the subject of a formula.
17-18	7	Chapter 30 Proportion	30.1 Direct proportion	<ul style="list-style-type: none"> understand the meaning of direct proportion find missing values in problems involving proportion.
			30.2 Graphs and direct proportion	<ul style="list-style-type: none"> represent direct proportion graphically and algebraically.
			30.3 Inverse proportion	<ul style="list-style-type: none"> understand what inverse proportion is use graphical and algebraic representations of inverse proportion.
			30.4 Comparing direct and inverse proportion	<ul style="list-style-type: none"> recognise direct and inverse proportion and work out missing values.
19-20	7	Chapter 31 Applications of graphs	31.1 Step graphs	<ul style="list-style-type: none"> interpret step graphs.
			31.2 Distance–time graphs	<ul style="list-style-type: none"> draw graphs from real-life situations to illustrate the relationship between two variables.
			31.3 More time graphs	<ul style="list-style-type: none"> interpret and draw time graphs.
			31.4 Graphs showing growth	<ul style="list-style-type: none"> interpret and draw exponential growth graphs.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
21-22	5	Chapter 32 Comparing sets of data	32.1 Grouped frequency tables	<ul style="list-style-type: none"> create a grouped frequency table from raw data.
			32.2 Drawing frequency diagrams	<ul style="list-style-type: none"> interpret frequency diagrams draw a frequency diagram from a grouped frequency table.
			32.3 Comparing data	<ul style="list-style-type: none"> use mean and range to compare data from two sources.
			32.4 Which average to use	<ul style="list-style-type: none"> decide when each different type of average is most useful.
2		Assessment and review		
23		Half-term holiday		
24-25	7	Chapter 33 Percentage changes	33.1 Simple interest	<ul style="list-style-type: none"> understand what simple interest is solve problems involving simple interest.
			33.2 Percentage increases and decreases	<ul style="list-style-type: none"> calculate the result of a percentage increase or decrease choose the most appropriate method to calculate a percentage change.
			33.3 Calculating the original value	<ul style="list-style-type: none"> calculate the original value given the result of a percentage change.
			33.4 Using percentages	<ul style="list-style-type: none"> choose the correct calculation to work out a percentage.
26-27	7	Chapter 34 Polygons	34.1 Angles in polygons	<ul style="list-style-type: none"> work out the sum of the interior angles of a polygon work out exterior angles of polygons.
			34.2 Constructions	<ul style="list-style-type: none"> make accurate geometric constructions.
			34.3 Angles in regular polygons	<ul style="list-style-type: none"> work out the exterior angles of a regular polygon work out the interior angles of a regular polygon.
			34.4 Regular polygons and tessellations	<ul style="list-style-type: none"> work out which regular polygons tessellate.
28-29	5	Chapter 35 Expressions and equations	35.1 Multiplying out brackets	<ul style="list-style-type: none"> multiply out brackets.
			35.2 Factorising algebraic expressions	<ul style="list-style-type: none"> factorise expressions.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			35.3 Equations with brackets	• solve equations with one or more sets of brackets.
			35.4 Equations with fractions	• solve equations involving fractions.
	2	Assessment and review		
30-31	Easter holiday			
Year 8 term 3				
32-33	7	Chapter 36 Prisms and cylinders	36.1 Metric units for area and volume	• convert from one metric unit to another.
			36.2 Volume of a prism	• calculate the volume of a prism.
			36.3 Surface area of a prism	• calculate the surface area of a prism.
			36.4 Volume of a cylinder	• calculate the volume of a cylinder.
			36.5 Surface area of a cylinder	• calculate the curved surface area of a cylinder • calculate the total surface area of a cylinder.
34-35	7	Chapter 37 Compound units	37.1 Speed	• understand and use measures of speed.
			37.2 More about proportion	• understand and use density and other compound units.
			37.3 Unit costs	• understand and use unit pricing.
		Chapter 38 Solving equations graphically	38.1 Graphs from equations of the form $ax \pm by = c$	• draw any linear graph from any linear equation • solve a linear equation from a graph.
			38.2 Graphs from quadratic equations	• draw graphs from quadratic equations.
			38.3 Solving quadratic equations by drawing graphs	• solve a quadratic equation by drawing a graph.
36-37	5	Chapter 39 Pythagoras' theorem	39.1 Calculating the length of the hypotenuse	• calculate the length of the hypotenuse in a right-angled triangle.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			39.2 Calculating the length of a shorter side	<ul style="list-style-type: none"> calculate the length of a shorter side in a right-angled triangle show that a triangle is right-angled.
			39.3 Using Pythagoras' theorem to solve problems	<ul style="list-style-type: none"> use Pythagoras' theorem to solve problems.
	2	Assessment and review		
38	Half-term holiday			
39-40	7	Chapter 40 Working with decimals	40.1 Negative powers of 10	<ul style="list-style-type: none"> understand and work with positive and negative powers of ten.
			40.2 Standard form	<ul style="list-style-type: none"> understand and work with standard form, using positive and negative powers of ten.
			40.3 Rounding appropriately	<ul style="list-style-type: none"> round numbers, where necessary, to an appropriate or suitable degree of accuracy.
			40.4 Mental calculations	<ul style="list-style-type: none"> use some routines that can help in mental arithmetic.
			40.5 Solving problems	<ul style="list-style-type: none"> solve real-life problems involving decimals.
41-42	7	Chapter 41 Manipulating brackets	41.1 More about brackets	<ul style="list-style-type: none"> expand a term with a variable or constant outside brackets.
			41.2 Factorising expressions containing powers	<ul style="list-style-type: none"> take out a variable as a factor.
			41.3 Expanding the product of two brackets	<ul style="list-style-type: none"> multiply out two brackets.
			41.4 Expanding expressions with more than two brackets	<ul style="list-style-type: none"> multiply out three brackets.
43-44	7	Chapter 42 Trigonometric ratios	42.1 Finding trigonometric ratios of angles	<ul style="list-style-type: none"> understand what the trigonometric ratios sine, cosine and tangent are.
			42.2 Using trigonometric ratios to find the sizes of angles	<ul style="list-style-type: none"> find the size of an angle identified from a trigonometric ratio.

Week	Hours	Chapter	Topic	Learning objectives Students will be able to:
			42.3 Using trigonometric ratios to find lengths	<ul style="list-style-type: none"> find an unknown length in a right-angled triangle, given one side and another angle.
45-46	7	Assessment and review		