Curriculum Sequencing Overview – Maths Year 8

Week	1	2	3	4	5	6	7
Big ideas (key concepts)	1a. Accuracy and Estimation			1b. Ratio and Proportion			
Lesson topics sequence	Round numbers to the nearest 10, integer, decimal place and significant figure.	Estimate answers to calculations by rounding to one significant figure. Show inequalities on a number line. Write integer values that satisfy an inequality. Write error intervals for a rounded or truncated number.	Calculate the upper and lower bounds of an expression involving the four operations. Find the upper and lower bounds of calculations involving perimeters, areas and volumes of 2D and 3D shapes.	Find equivalent ratios. Simplify a ratio. State a unit ratio, 1:n or n:1 Divide a total in a given ratio. Share a ratio when given one part.	Share a ratio when the difference is given. Convert between ratios and fractions. Find parts when two linked ratios are given. Use ratios in maps and scale drawings.	Apply ratio to solve recipe problems. Understand and apply direct and inverse proportion to word problems. Calculate best buys. Solve problems using the unitary method. Recognise graphs of proportion.	Set up and solve algebraic problems of direct and inverse proportion.
Key assessments	Accuracy and estimation KA		Accuracy and estimation topic assessment		Ratio and proportion KA		Ratio and proportion topic assessment
Revision	Sparx Maths Task Self-Quizzing Accuracy and Estimation 1-5	Sparx Maths Task Self-Quizzing Accuracy and Estimation 3-8	Sparx Maths Task Self-Quizzing Accuracy and Estimation 7-11	Sparx Maths Task Self-Quizzing Ratio and Proportion 1-5	Sparx Maths Task Ratio and Proportion 6-10	Sparx Maths Task Self-Quizzing Ratio and Proportion 9-13	Sparx Maths Task Self-Quizzing Perimeter and Area 1-5

Week	8	9	10	11	12	13	14
Big ideas (key concepts)	2a. Perimeter and Area			2b. Graphs			
Lesson topics sequence	Calculate the perimeter of rectilinear shapes. Problem solve with perimeter. Calculate the area of the following shpaes; parallelogram, triangle, trapezium and kite.	Problem solve with area. Calculate the circumference of a circle. Solve problems involving circles and perimeter. Calculate the area of a circle.	Solve problems involving the area of circles. Calculate the diameter or radius given the circumference or area. Calculate the area of compound shapes involving circles. Calculate arc length and sector area.	Link horizontal and vertical lines to their equations. Plot a diagonal line by completing a table a values. Identify the y-intercept and gradient of a graph. Identify parallel lines from their equations.	Solve equations by plotting graphs. Find the equation of a line when given; the gradient and a point on the line, two points on the line. Find the co-ordinates of the midpoint of a line segment. Identify perpendicular lines from their equations.	Find the equation of a line perpendicular to another through a given point. Use and interpret a conversion graph. Generate and plot points of quadratic functions. Identify the line pf symmetry from a quadratic graph. Find approximate solutions to a quadratic graph.	Identify and interpret roots, intercepts and turning points of quadratic graphs. Recognise sketch and interpret graphs of cubic functions. Recognise sketch and interpret graphs of the reciprocal function y =1/x
Key assessments	Perimeter and area KA		Perimeter and area topic assessment	Linear and Quadratic graphs KA			Linear and Quadratic graphs topic assessment
Revision	Sparx Maths Task Self-Quizzing Perimeter and Area 3-7	Sparx Maths Task Self-Quizzing Perimeter and Area 5-9	Sparx Maths Task Self-Quizzing Perimeter and Area 7-11	Sparx Maths Task Self-Quizzing Linear & Quadratic Graphs 1-3	Sparx Maths Task Self-Quizzing Linear & Quadratic Graphs 2-4	Sparx Maths Task Self-Quizzing Linear & Quadratic Graphs 3-5	Sparx Maths Task Self-Quizzing Comparing Data 1-4

Week	15	16	17	18	19	20
Big ideas (key concepts)	3a. Comparing Data, Averages and Range			3b. Properties of 3D Shapes, Surface Area and Volume		
Lesson topics sequence	Recognise types of data Calculate averages of discrete data Calculate with combined averages questions. Calculate reverse mean. Calculate the range from a set of data.	Calculate the averages and range from a list, stem and leaf diagram and frequency table. Find the modal class, estimate the mean and calculate the median from a grouped frequency table.	Recognise the advantages and disadvantages between measures of average. Construct and interpret cumulative frequency tables. Compare the mean and range of two distributions.	Know and convert between measurements for volume and capacity Identify faces, vertices and edges of a 3D shape Calculate the surface area of prisms Find the surface area of a cylinder	Calculate the volume of any prism, composite solids and cylinders. Find the volume of the following; pyramid, cone, sphere.	Find the surface area of the following shapes; pyramid, cone, sphere.
Key assessments	Data KA	Mid-year assessment		3D shapes KA		3D shapes topic assessment
Revision	Sparx Maths Task Self-Quizzing Comparing Data 3-6	Sparx Maths Task Self-Quizzing Comparing Data 7-10	Sparx Maths Task Self-Quizzing 3D Shapes 1-4	Sparx Maths Task Self-Quizzing 3D Shapes 5-8	Sparx Maths Task Self-Quizzing 3D Shapes 9-12	Sparx Maths Task Self-Quizzing 3D Shapes 12-15

Week	21	22	23	24	25	26
Big ideas (key concepts)	4a. Plans Elevations, Scale Drawings and Bearings			4b. Transformations and Congruence		
Lesson topics sequence	Draw the front and side elevations and plan of 3D shapes. Given the elevation and plan of a shape, draw the 3D solid Construct the following; perpendicular bisectors, angle bisectors,	Draw and construct diagrams from given instructions including, a given distance from a point, a given distance from a line, equal distances from two points or two line segments. Find and describe regions satisfying a combination of loci Use and interpret maps and scale drawings	Make an accurate scale drawing from a diagram Measure and draw bearings Use properties of parallel lines to solve bearing problems Use accurate drawing to solve bearings problems Solve locus problems including bearings	Rotate, reflect and translate a 2D shape. Describe a reflection, rotation and translation. Describe the changes and invariance achieved by combinations of rotations, reflections and translations	Use the basic congruence criteria for triangles Solve problems involving congruence Construct congruent triangles using a pair of compass and protractor using SSS, SAS, ASA and RHS	Use vector notation, interpret vectors as displacement in the plane with an associated direction Represent vectors, combinations of vectors and scalar multiples in the plane pictorially Calculate the sum of two vectors, the difference of two vectors and a scalar multiple of a vector using column vectors (including algebraic terms) Calculate the resultant of two vectors
Key assessments	Elevations and bearings KA		Elevations and bearing topic assessment	Transformations and congruence KA		Transformations and congruence topic assessment
Revision	Sparx Maths Task Self-Quizzing Plans, Elevations, Scale Drawings & Bearings 1-3	Sparx Maths Task Self-Quizzing Plans, Elevations, Scale Drawings & Bearings 4-6	Sparx Maths Task Self-Quizzing Plans, Elevations, Scale Drawings and Bearings 7-9	Sparx Maths Task Self-Quizzing Transformations and Congruency 1-3	Sparx Maths Task Self-Quizzing Transformations and Congruency 3-5	Sparx Maths Task Self-Quizzing Applied Graphs 1-3

Week	27	28	29	30	31	32
Big ideas (key concepts)	5a. Applied Graphs			5b. Transformations and Similarity		
Lesson topics sequence	Draw and interpret straight-line graphs for real-life situations Draw distance–time and velocity–time graphs Use graphs to calculate various measures including: unit price, average speed, distance, time, acceleration; including using enclosed areas by counting squares or using areas of trapezia, rectangles and triangles			Scale a shape on a grid without a centre. Enlarge a shape given a centre with a positive, negative or fractional scale factor. Describe an enlargement.	Understand enlargements produce similar shapes and angles are preserved under enlargements. Given the areas of two shapes, one an enlargement of the other, find the scale factor of the enlargement.	Use similar shapes to find missing lengths. Use similar shapes to find missing areas and volumes. Use the links between scale factors to find missing lengths, areas and volumes from each other.
Key assessments	Applied graphs KA		Applied graphs topic assessment	Transformations and similarity KA		Transformations and similarity topic assessment
Revision	Sparx Maths Task Self-Quizzing Applied Graphs 4-6	Sparx Maths Task Self-Quizzing Applied Graphs 1-3	Sparx Maths Task Self-Quizzing Applied Graphs 4-6	Sparx Maths Task Self-Quizzing Transformations and Similarity 1-3	Sparx Maths Task Self-Quizzing Transformations and Similarity 3-5	Sparx Maths Task Self-Quizzing Pythagoras and Trigonometry 1-4

Week	33	34	35	36	37	38	39
Big ideas (key concepts)	6a. Pythagoras and Trigonometry			6b. Compound Measures			
Lesson topics sequence	Calculate missing sides in right angled triangles using Pythagoras. Solve Pythagoras word problems. Apply Pythagoras to triangles on a co-ordinate grid. Calculate the length of a line segment given pairs of points.	Solve Pythagoras problems in 3D. Recall trigonometric ratios. Find missing sides and angles of right angled triangles using trigonometry. Solve multi-step problems using trigonometry.	Find angles of elevation and depression. Know exact trigonometric values. Solve trigonometric problems in 3D. Use the sine and cosine rule to find missing sides and angles.	Convert between units of time. Convert between metric measures of speed. Understand and use compound measures of speed.	Understand and use compound measures of density.	Understand and use compound measures of pressure. Change d/t in m/s to a formula in km/h.	
Key assessments	Pythagoras and Trigonometry KA		Pythagoras and trigonometry topic assessment	End of year assessment			
Revision	Sparx Maths Task Self-Quizzing Pythagoras and Trigonometry 5-8	Sparx Maths Task Self-Quizzing Pythagoras and Trigonometry 8-12	Sparx Maths Task Self-Quizzing Pythagoras and Trigonometry 13-16	Sparx Maths Task Self-Quizzing Compound Measures 1-3	Sparx Maths Task Self-Quizzing Compound Measures 2-4	Sparx Maths Task Self-Quizzing Compound Measures 1-4	