Year	Term	Week	Chapter	Ref	Lesson
Year 3	Autumn Term	1-2	18 Graphs 2 (Algebra)	18.1	Cubic and reciprocal functions
				18.2	Exponential and trigonometric functions
		3-4		18.3	Real-life graphs
				18.4	Gradients and areas under graphs
		5-6		18.5	Equation of a circle
					Review
					Assessment
				19.1	Pythagoras' theorem

Year 3

Year 2

Autumn Term

7-8	19 Pythagoras and trigonometry (Geometry)	19.2	Trigonometry 1
9-10		19.3	Trigonometry 2
		19.4	Pythagoras and trigonometry problems
11-12		19.5	Vectors
			Review
			Assessment
		20.1	Sets

Year 3	Autumn Term	13-14	20 Combined events (Probability)	20.2 Possibility spaces
				20.3 Tree diagrams
Year 3	Spring Term	15-16		20.4 Conditional probability
				Review
				Assessment
			Lifeskills 4	The launch party
		17-18	21 Sequences (Algebra)	21.1 Linear sequences
				21.2 Quadratic sequences
		19-20		21.3 Special sequences
				Review
				Assessment
				22.1 Compound units

Year 3	Spring Term	Spri	21-22	22 Units and proportionality (Ratio and proportion)	22.2	Converting between units
			23-24		22.3	Direct and inverse proportion
					22.4	Rates of change
			25-26		22.5	Growth and decay
						Review
						Assessment
	Summer Term					

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GCSE Ref	GCSE Objective statement	MyMaths
A12 [a,b,**e,f**]	Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions, the reciprocal function $y = 1/x$ with $x \neq 0$, exponential functions $y=k^x$ for positive values of k, and the trigonometric functions (with arguments in degrees) $y = \sin x$, $y = \cos x$ and $y = \tan x$ for angles of any size.	1071 1172
A12 [a-d] A13	Recognise, sketch and interpret graphs of linear functions, quadratic functions, simple cubic functions, the reciprocal function $y = 1/x$ with $x \neq 0$, exponential functions $y = k^x$ for positive values of k, and the trigonometric functions (with arguments in degrees) $y = \sin x$, $y = \cos x$ and $y = \tan x$ for angles of any size. Sketch translations and reflections of a given function.	1070 1188 1126
A14 R14	Plot and interpret graphs (including reciprocal graphs and exponential graphs) in real contexts and graphs of non-standard functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration. Interpret the gradient of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion.	1322 1184
A15	Calculate or estimate gradients of graphs and areas under graphs (including quadratic and other non-linear graphs), and interpret results in cases such as distance-time graphs, velocity-time graphs and graphs in financial contexts (this does not include calculus).	1312 1128
A16 G9	Recognise and use the equation of a circle with centre at the origin; find the equation of a tangent to a circle at a given point. Identify and apply circle definitions and properties, including: centre, radius, chord, diameter, circumference, tangent, arc, sector and segment.	1152
G6 [b-d,f] G20 [b,c,**f,g**]	Apply angle facts, triangle congruence, similarity and properties of quadrilaterals to conjecture and derive results about angles and sides, including Pythagoras' Theorem and the fact that the base angles of an isosceles triangle are equal, and use known results to obtain simple proofs. Know the formulae for: Pythagoras' theorem, $a^2 + b^2 = c^2$, and the trigonometric ratios, sin θ = opposite/hypotenuse, cos θ = adjacent/hypotenuse and tan θ = opposite/adjacent; apply Pythagoras' theorem to find angles and lengths in right-angled triangles in two dimensional figures. Apply the trigonometric ratios to find angles and lengths in right-angled triangles and, where possible, general triangles in two and three dimensional figures.	1112 1064

R12 [c] G19 [**b**] G20 [**g**] G21	Compare lengths, areas and volumes using ratio notation; make links to similarity (including trigonometric ratios) and scale factors. Apply the concepts of congruence and similarity, including the relationships between lengths, areas and volumes in similar figures. Know the formulae for: Pythagoras' theorem, $a^2 + b^2 = c^2$, and the trigonometric ratios, sin θ = opposite/hypotenuse, cos θ = adjacent/hypotenuse and tan θ = opposite/adjacent; apply Pythagoras' theorem to find angles and lengths in right-angled triangles in two dimensional figures. Apply the trigonometric ratios to find angles and lengths in right-angled triangles and, where possible, general triangles in two and three dimensional figures. Know the exact values of sinθ and cosθ for θ = 0°, 30°, 45° , 60° and 90°; know the exact value of tanθ for θ = 0°, 30°, 45° and 60°.	1131 1133
G1 [a-c,e] G22	Use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons and polygons with reflection and/or rotation symmetries; use the standard conventions for labelling and referring to the sides and angles of triangles; draw diagrams from written description. Know and apply the sine rule, $a/\sin A = b/\sin B = c/\sin C$ and cosine rule, $a^2 = b^2 + c^2 - 2bc \cos A$, to find unknown lengths and angles.	1095 1120
G1 [b,c,e] G20 G22 G23	Use conventional terms and notations: points, lines, vertices, edges, planes, parallel lines, perpendicular lines, right angles, polygons, regular polygons and polygons with reflection and/or rotation symmetries; use the standard conventions for labelling and referring to the sides and angles of triangles; draw diagrams from written description. Know the formulae for: Pythagoras' theorem, $a^2 + b^2 = c^2$, and the trigonometric ratios, sin θ = opposite/hypotenuse, cos θ = adjacent/hypotenuse and tan θ = opposite/adjacent; apply Pythagoras' theorem to find angles and lengths in right-angled triangles in two dimensional figures. Apply the trigonometric ratios to find angles and lengths in right-angled triangles and, where possible, general triangles in two and three dimensional figures. Know and apply the sine rule, $a/\sin A = b/\sin B = c/\sin C$ and cosine rule, $a^2 = b^2 + c^2 - 2bc \cos A$, to find unknown lengths and angles. Know and apply Area = 1/2 $ab \sin C$ to calculate the area, sides or angles of any triangle.	1112 1095 1120
G25	Apply addition and subtraction of vectors, multiplication of vectors by a scalar, and diagrammatic and column representations of vectors. Use vectors to construct geometric arguments and proofs.	1134 1135
P4 P6 [a,c] P8 [c]	Apply the property that the probabilities of an exhaustive set of outcomes sum to one; apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one. Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams. Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions.	1262 1921 1922

N5 P6 [b, c] P7	Apply systematic listing strategies including use of the product rule for counting (i.e. if there are m ways of doing one task and for each of these, there are n ways of doing another task, then the total number of ways the two tasks can be done is $m \times n$ ways). Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams. Construct theoretical possibility spaces for single experiments with equally likely outcomes and use these to calculate theoretical probabilities. Construct theoretical possibility spaces for combined experiments with equally likely outcomes and use these to calculate theoretical probabilities.	1263 1199
P1 [a] P2 P4 P6 [a,b] P8	Record describe and analyse the frequency of outcomes of probability experiments using tables and frequency trees. Apply ideas of randomness, fairness and equally likely events to calculate expected outcomes of multiple future experiments. Apply the property that the probabilities of an exhaustive set of outcomes sum to one; apply the property that the probabilities of an exhaustive set of mutually exclusive events sum to one. Enumerate sets and combinations of sets systematically, using tables, grids, Venn diagrams and tree diagrams. Calculate the probability of independent and dependent combined events, including using tree diagrams and other representations, and know the underlying assumptions.	1208 1334 1935
P9	Calculate and interpret conditional probabilities through representation using expected frequencies with two-way tables, tree diagrams, and Venn diagrams.	1263 1334
A23 A25 [**b**]	Generate terms of a sequence from either a term-to-term or a position-to-term rule. Deduce expressions to calculate the nth term of linear and quadratic sequences.	1165 1173
A23 A24 [a-e,g,**h**] A25 [a]	Generate terms of a sequence from either a term-to-term or a position-to-term rule. Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions, Fibonacci type sequences, quadratic sequences, and simple geometric progressions (r^n where n is an integer, and r is a rational number > 0 or a surd) and other sequences. Deduce expressions to calculate the nth term of linear and quadratic sequences.	1166,
A23 A24	Generate terms of a sequence from either a term-to-term or a position-to-term rule. Recognise and use sequences of triangular, square and cube numbers, simple arithmetic progressions, Fibonacci type sequences, quadratic sequences, and simple geometric progressions (r^n where n is an integer, and r is a rational number > 0 or a surd) and other sequences.	1165, 1166 1920 1054
R1 [c,d] R11	Change freely between related standard units (e.g. time, length, area, volume/capacity, mass) and compound units (e.g. speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts. Use compound units such as speed, rates of pay, unit pricing, density and pressure.	 1121 1246

R1 [b,c,d] R12 [**b**] G19	Change freely between related standard units (e.g. time, length, area, volume/capacity, mass) and compound units (e.g. speed, rates of pay, prices, density, pressure) in numerical and algebraic contexts. Compare lengths, areas and volumes using ratio notation; make links to similarity (including trigonometric ratios) and scale factors. Apply the concepts of congruence and similarity, including the relationships between lengths, areas and volumes in similar figures	1061 1329
R6 [a] R7 R8 R10 R13 R14	Express a multiplicative relationship between two quantities as a ratio or a fraction Understand and use proportion as equality of ratios. Relate ratios to fractions and to linear functions. Solve problems involving direct and inverse proportion, including graphical and algebraic representations. Understand that X is inversely proportional to Y is equivalent to X is proportional to $1/Y$; construct and interpret equations that describe direct and inverse proportion. Interpret the gradient of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion.	1048 1059 1036
R15	Interpret the gradient at a point on a curve as the instantaneous rate of change; apply the concepts of average and instantaneous rate of change (gradients of chords and tangents) in numerical, algebraic and graphical contexts (this does not include calculus).	1312
R14 R16	Interpret the gradient of a straight line graph as a rate of change; recognise and interpret graphs that illustrate direct and inverse proportion. Set up, solve and interpret the answers in growth and decay problems, including compound interest and work with general iterative processes.	1238 1070

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