


## Higher Tier GCSE: Unit 1

Topic	Skill	Corbett Maths worksheet and video number
<b>N3 Decimals and Estimation</b>	I can convert between fractions and decimals	127 - 128
	I can carry out arithmetic using decimals and whole numbers including any number between 0 and 1	90 - 94
	I can use the product rule for counting	383
	I can round to decimal places	278
	I can round to significant figures	279
	I can estimate calculations by rounding	215
	I can estimate calculations involving decimals	215
	I can use related calculations to calculate with decimals	222
	I can convert recurring decimals to fractions	96
	I can find the upper and lower bounds of rounded values	183
	I can calculate using upper and lower bounds	184
	I can identify error intervals	377
	I can truncate a number	377
<b>A2 Manipulating Expressions</b>	I can collect like terms	9
	I can expand single brackets	13
	I can factorise expressions into single brackets	117
	I can expand the product of two brackets	14
	I can expand the product of triple brackets	15
	I can factorise quadratic expressions	118
	I can factorise quadratic expressions by splitting the middle term	119a
	I can factorise expressions involving the difference of two squares	120
	I can complete the square on quadratic expressions	10

<b>A3 Linear Equations</b>	I can solve simple equations	110
	I can solve linear equations containing brackets	110
	I can solve linear equations with unknowns on both sides	113
	I can solve linear equations containing fractions	111
	I can set up and solve linear equations	115
	I can distinguish between an equation, formula, identity and an expression	
<b>G1 Angles</b>	I know the angle properties of parallel lines	25
	I can use the angle properties of triangles, quadrilaterals, straight lines and angles around a point.	30, 33, 34, 35, 37, 39
	I can draw bearings using a protractor.	26 – 27
	I can calculate bearings using angle facts. 27a	27a
	I can use angle properties to solve problems	25, 30, 32, 33, 34, 35, 37, 39
	I understand polygons and angles in polygons	32
	I can calculate interior and exterior angles in regular and irregular polygons	32
	I can use angle facts to form structured arguments	25, 30, 32, 33, 34, 35, 37, 39



**Guidance:**

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## Higher Tier GCSE: Unit 2

Topic	Skill	Corbett Maths worksheet and video number
<b>N2 Fractions</b>	I can identify the reciprocal of a fraction, decimal and integer.	145
	I can order rational numbers including using the symbols $>$ $<$	131, 144
	I can add and subtract fractions and mixed numbers	133
	I can multiply fractions and mixed numbers	142
	I can divide fractions and mixed numbers	134
<b>G7 Pythagoras and Trigonometry</b>	I can use Pythagoras' theorem	257
	I can apply Pythagoras' theorem	257, 260, 261 Textbook Exercise Apply Section
	I can find the length of a line segment	263
	I can use trigonometry in right angled triangles	330, 331
	I can work out angles of elevation and depression	 <a href="#">Fuse School YouTube Elevation and Depression</a>
	I can use Pythagoras' theorem and Trigonometry in three dimensions	259, 332
	I can work out the angle between a line and a plane	332
<b>S2 Averages and Range</b>	I can find the mode and the median	50, 56
	I can calculate the mean	53
	I can use frequency tables to find averages (ungrouped)	51, 54
	I can use frequency tables to find averages (grouped)	52, 55
	I can calculate the range, quartiles and interquartile range	57 
	I can draw and use cumulative frequency graphs	153, 154
	I can find quartiles from a cumulative frequency graph	154
	I can draw and interpret box plots	149, 150

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## Higher Tier GCSE: Unit 3

Topic	Skill	Corbett Maths worksheet and video number
<b>N1 Number System</b>	I can identify prime factors, LCM and HCF	223 - 224
	I can identify squares and cubes	226-228 and 212-214
	I can apply the order of operations	211
	I can use a calculator effectively	352
	I can apply the index laws for multiplying, dividing and a power to a power	17, 172 and 174
	I can use zero and negative powers	175
	I can use standard form	300-303
	I can work with fractional indices	173
	I can simply surds	305
	I can add and subtract surds	306
	I can multiply and divide surds (including expanding brackets)	308
	I can rationalise the denominator	307
	I can solve contextual problems involving surds	308 Textbook Exercise Apply Section
<b>A1 Sequences</b>	I can find a term-to-term rule and a position-to-term rule	287 and 288
	I can find the nth term of an arithmetic sequence	288 and 289
	I can identify which terms cannot be in a sequence by finding the nth term	288
	I can use the nth term to generate terms in a sequence	288
	I can find the nth term of a quadratic sequence	388a, 388b and 388c
	I can solve problems involving sequences from real life situations	290
	I can recognise special sequences	287a
<b>R1 Percentages</b>	I can find the new amount after a percentage increase or decrease	238
	I can calculate a percentage increase or decrease with multipliers	239
	I can calculate compound interest	236
	I can calculate reverse percentages	240
	I can calculate percentage change	233
	I can calculate repeated percentage change	E163 – Dr Frost
	I can calculate simple interest	236a

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## Higher Tier GCSE: Unit 4

Topic	Skill	Corbett Maths worksheet and video number
<b>G2 Area and Volume 1</b>	I can find the area of triangles, parallelograms and trapeziums	49, 44, 48
	I can solve problems involving perimeter and area	41, 59, 60
	I can find the circumference and area of a circle	40
	I can recognise and draw the net of a 3D shape	4
	I can draw the plan and elevation of a 3D shape	354
	I can work out the volume of cuboids and shapes made from cuboids	355, 358
	I can work out the volume of a prism	356
	I can work out the volume of a cylinder	357
	I can find the area and perimeter of a sector of a circle	46, 47, 58, 61, 62, 63
	I can solve problems involving circles in terms of $\pi$	40, 46, 47
<b>A5 Linear Graphs</b>	I can draw straight line graphs by plotting points	186, 192, 193
	I can find the midpoint of a line segment	198
	I can calculate the length of a line segment	185
	I can work out the gradient and the y-intercept of a straight line	189 - 191
	I can use $y=mx+c$	187, 194
	I can find the equation of the line through two given points	195
	I can find the equation of parallel and perpendicular lines	196 -197

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## Higher Tier GCSE: Unit 5

Topic	Skill	Corbett Maths worksheet and video number
<b>R2 Ratio and Proportion</b>	I can simplify and identify equivalent ratios	269
	I can write ratios in the form 1:n or n:1	271c
	I can share a quantity including fractions in a given ratio	270
	I can combine ratios	271a and 271b
	I can find quantities using ratio	271
	I can write ratios as a fraction or linear function	<a href="#">Video</a> <a href="#">Questions 1</a> <a href="#">Answers 1</a> <a href="#">Questions 2</a> <a href="#">Answers 2</a>
	I can use direct and inverse proportion	254 and 255
	I can use the unitary method to identify a product that is considered a 'Best Buy'	255a
	I can calculate ingredients with an integer and non-integer scale factor	255a and 256
	I can solve problems involving recipes	256
	I can apply ratio to real life problems and context, involving conversion, comparison, scaling, mixing and concentrations	271e
	I can solve problems with currencies/exchange rates	214a
	I can use scale factors, scale diagrams and maps	283
<b>A4 Simultaneous Equations</b>	I can solve simultaneous equations by elimination	295
	I can solve simultaneous equations by substitution	296
	I can set up and solve equations in two unknowns	295 Textbook Exercise Apply Section
	I can use graphs to solve simultaneous equations	297
<b>A8 Quadratic Equations</b>	I can solve quadratic equations by factorising	266
	I can solve quadratic equations by completing the square	267a
	I can solve quadratic equations using the quadratic formula	267
	I can set up and solve quadratic equations	266, 267 and 267a Textbook Exercise Apply Section
	I can identify roots and turning points from a quadratic graph and sketch quadratic graphs	265
	I can solve simultaneous equations where one is linear and the other is non-linear (quadratic/circle etc)	298

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## Higher Mathematics GCSE: Unit 6

Topic	Skill	Corbett Maths worksheet and video number
<b>P1 Probability</b>	I can write probabilities as numbers	245, 251
	I can work out the probabilities of mutually exclusive outcomes	244, 250
	I can estimate probability from relative frequency	248
	I can find the expected number of outcomes	248
	I can work out the probabilities of independent events	249
	I can apply the AND rule and the OR rule to find probabilities	244, 249
	I can draw probability tree diagrams	252
	I can calculate conditional probability	247
	I can solve problems involving algebraic probability trees	<a href="#">Video Questions Answers</a>
	I can draw and interpret two-way tables and frequency trees	319, 376
	I can use sample space diagrams to calculate probabilities	246
	I can form and calculate different combinations and list systematically	253, 383
	I can use the terminology associated with probability	<a href="#">Probability - Maths is Fun</a>
<b>G3 Units of Measure</b>	I can convert between units of measure (metric to metric only)	349a, 349b, 349c
	I can calculate with compound measures (speed, rates of pay, prices, density, pressure)	299, 384, 385
	I can solve problems multi-stage problems with compound measures (speed, rates of pay, prices, density, pressure)	<b>Maths Genie Grade 5 Compound Measures from Q10</b>
	I can convert units of area and volume	350, 351
<b>G8 Area and Volume 2</b>	I can calculate the volume of pyramids and cones	359, 360, 360a
	I can calculate the volume of a sphere	361
	I can find the volume of compound shapes	<b>On Maths</b> <a href="#">Volume of L-Shape</a>
	I can calculate the surface area of a prism	310, 311, 312, 315 <b>MathsGenie Grade 4 Surface Area Exam Qs</b>
	I can calculate the surface area of spheres, cones and frustums	313, 314
	I can solve problems involving volume, surface area and density	384


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## Higher Tier GCSE: Unit 7

Topic	Skill	Corbett Maths worksheet and video number
<b>A6 Inequalities and Formulae</b>	I can use the correct notation to show inclusive and exclusive inequalities	176
	I can show inequalities on number lines	177
	I can write down integer solutions that satisfy an inequality	176
	I can solve simple linear inequalities in one variable	178
	I can solve two linear inequalities in $x$ , find the solution sets and compare them to see which value of $x$ satisfies both solve linear inequalities in two variables algebraically	179
	I can solve equations involving inequalities	179
	I can solve graphically several linear inequalities in two variables	180 - 182
	I can solve quadratic inequalities in one variable, by factorising and sketching the graph to find critical values	378
	I can use formulae	<a href="#">Substitution</a>
	I can derive an algebraic formula	<a href="#">Derive Formulae</a>
	I can change the subject of a formula	7
	I can change the subject in complex formulae	8
	<b>A7 Non-Linear Graphs</b>	I can recognise and graph quadratic functions
I can recognise and graph cubic functions		344
I can recognise and graph reciprocal functions		346
I can recognise and graph exponential functions		345
I can recognise and use the equation of a circle		12
I can find approximate solutions to an equation from a graph		267c – 267d
I can find the equation of a tangent to a circle at a given point		372
I can solve problems involving growth and decay		
<b>R3 Ratio and Proportion 2</b>	I can write statements of proportionality and formulae	254
	I can solve problems involving square and cubic proportionality	254
	I can solve problems involving direct and inverse proportion with numerical representations	<a href="#">MathsGenie Grade 5 Direct and Inverse Proportion</a>
	I can solve problems involving direct and inverse proportion with algebraic representations	255
	I can solve problems involving direct and inverse proportion with graphical representations	<a href="#">BBC Bitesize</a>
	I can recognise when values are in direct proportion by reference to the graph form, and use a graph to find the value of $k$ in $y = kx$	<a href="#">BBC Bitesize</a>
	I can recognise when values are in inverse proportion by reference to the graph form	<a href="#">BBC Bitesize</a>



<b>G9 Pythagoras and Trigonometry 2</b>	I can recognise and use the trigonometric ratios for any angle and its corresponding graphs	329 338 - 340
	I can find the area of any triangle using $\frac{1}{2}ab\sin c$	337
	I can use the sine rule	333
	I can use the sine rule to calculate an angle	334
	I can use the cosine rule	335
	I can use the cosine rule to calculate an angle	336
	I can use trigonometry to solve problems	<b>Exam Solutions</b> <a href="#">Bearings and Trigonometry</a>

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## Higher Tier GCSE: Unit 8

Topic	Skill	Corbett Maths worksheet and video number
<b>S1</b> <b>Collecting and Recording Data</b>	I understand the different types of data	342 – 343a
	I understand the different methods of sampling	282
	I can calculate stratified samples	281
	I can collect data by observation and experiment	89, 321
	I can use the capture-mark-recapture method for estimating population size	391
<b>S3</b> <b>Processing, Representing and Interpreting Data</b>	I can produce a pie chart	163
	I can interpret pie charts	164
	I can draw and use line graphs	160
	I can draw and use scatter graphs and recognise correlation	165 – 166 and 168
	I can draw lines of best fit	167
	I can use lines of best fit to make predictions	167
	I can interpret comparative and composite bar charts	147-148
	I can draw and interpret frequency diagrams and histograms	<a href="#">Frequency Diagram - Youtube</a>
	I can draw and use frequency polygons	155 - 156
	I can draw and use histograms with unequal class intervals	157 - 159
<b>A11</b> <b>Algebraic Fractions</b>	I can simplify algebraic fractions	24
	I can add and subtract algebraic fractions	21
	I can multiply and divide algebraic fractions	22 – 23
	I can solve equations involving algebraic fractions	111
	I can solve algebraic fraction equations leading to quadratic equations	111a
<b>G6</b> <b>Transformations</b>	I can use translations	325 - 326
	I can transform shapes using reflections	272 - 274
	I can transform shapes using rotations	275
	I can use enlargements and scale factors	104 - 108
	I can perform combinations of transformations	<b>Maths Genie Grade 3</b> <a href="#">Mixed Transformations</a>
	I can identify points of invariance	392

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## Higher Tier GCSE: Unit 9

Topic	Skill	Corbett Maths worksheet and video number
<b>G10</b> <b>Circle Geometry</b>	I can identify parts of a circle	61
	I can use the properties of an isosceles triangle in a circle	64
	I can use the properties of tangents to a circle	64
	I know and can prove the circle theorems	65a – 65f
	I can apply the circle theorems	65 <b>Maths Genie</b> <b>Grade 6</b> <a href="#">Circle Theorems</a>
<b>G4</b> <b>Congruence, Symmetry &amp; Similarity</b>	I can prove congruence	66 – 67 <b>Maths Genie</b> <b>Grade 7</b> <a href="#">Congruence</a>
	I understand symmetry in 2D shapes	316 - 317
	I understand symmetry of special shapes	316 - 317
	I can recognise similar shapes and work out missing lengths	291 - 292
	I can find lengths in similar triangles	<b>On Maths</b> <a href="#">Triangle in Triangle (Grade 5)</a>
	I can calculate using areas of similar shapes	293a
	I can calculate using volumes of similar shapes	293b
	I can solve problems involving lengths, areas, and volumes of similar shapes	<b>Maths Genie</b> <b>Grade 6</b> <a href="#">Similar Shapes (Area and Volume)</a>
	I can solve problems involving frustums	360a
<b>A10</b> <b>Functions and Transformations</b>	I can use function notation	<b>On Maths</b> <a href="#">Function Notation - YouTube</a>
	I can form composite and inverse functions	369 - 370
	I can understand what causes a translation of a function parallel to the x axis	323-324
	I can understand what causes a reflection in the coordinate axes	323-324
<b>P2</b> <b>Sets and Venn Diagrams</b>	I can use set notation including union, intersection and complement	379
	I can shade regions in a Venn diagram	380
	I can use Venn diagrams to represent sets	380

	I can find the intersection and union of sets	380
	I can interpret Venn Diagrams	380
	I can use a Venn diagram to solve a problem	380
	I can use Venn diagrams to calculate probabilities	<b>Maths Genie</b> <b>Grade 5</b> <a href="#">Venn Diagrams</a>
	I can use set notation to describe events and compound events	<b>Maths Genie</b> <b>Grade 5</b> <a href="#">Venn Diagrams</a>
	I can combine sets of probability data using Venn diagrams	<b>Maths Genie</b> <b>Grade 5</b> <a href="#">Venn Diagrams</a>
	I can use a Venn diagram to calculate conditional probability	<b>Maths Genie</b> <b>Grade 7</b> <a href="#">"Given That" Questions</a>

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## Higher Tier GCSE: Unit 10

Topic	Skill	Corbett Maths worksheet and video number
<b>R4 Rates of Change</b>	I can recall and convert standard units for time, length, area, volume, mass, speed, rates of pay, prices, density and pressure	349 a – c, 350, 351, 299, 384, 385
	I can draw and interpret straight-line graphs for real-life situations	151 - 152
	I can determine distance from a distance time graph	171
	I can determine speed from a distance time graph	171
	I can determine distance from a velocity time graph	<b>Maths Genie Grade 8/9</b> <a href="#">Velocity Time Graphs</a>
	I can determine speed from a velocity time graph	<b>Maths Genie Grade 8/9</b> <a href="#">Velocity Time Graphs</a>
	I can draw a tangent to find the gradient at a point on a line	390a
	I can calculate and estimate the gradients of graphs (determine rate of change from a gradient)	390a – 390b
	I can calculate and estimate the area under a graph	389
	I can calculate the average rate of change from a graph	<a href="#">Average Rate of Change</a>
	I can interpret the area under a linear or non-linear graph in real-life contexts	<a href="#">Area Under a Graph</a>
<b>G5 Constructions and Loci</b>	I can construct triangles	73 and 81 - 83
	I can construct perpendicular lines	71 and 78 - 80
	I can construct and bisect angles	68 - 72
	I can construct loci	75 - 77
	I can construct regions (solve problems)	77
	I can read and construct scale drawings and maps	283 - 284
<b>A12 Algebraic Proof &amp; Iteration</b>	I understand identity notations, can identify identities and can use identities to find unknown values	<a href="#">Algebraic Identities</a>
	I can complete basic algebraic proofs. e.g prove a number is even, a multiple of 4, square etc.	365
	I can form and solve algebraic proofs from worded problems involving consecutive numbers, even and odd numbers etc.	<b>Maths Genie Grade 8/9</b> <a href="#">Proof</a>
	I can find approximate solutions to an equation using iteration	373
<b>G11 Vectors</b>	I can understand and use vector notation	353
	I can calculate the magnitude of a vector	<a href="#">Magnitude</a>
	I can add vectors	353
	I can work with parallel vectors	353

	I can solve geometric problems in two dimensions	<b>Maths Genie</b> <b>Grade 8/9</b> <a href="#">Vector Proof</a>
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