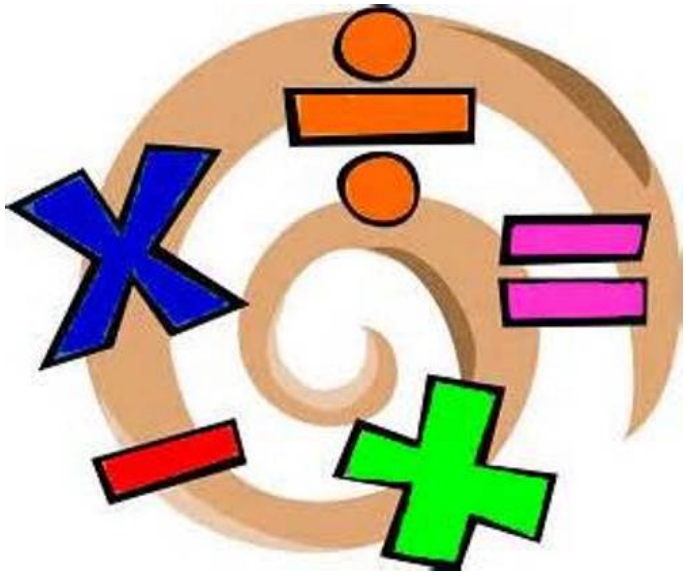
THE BECKET SCHOOL
A CATHOLIC VOLUNTARY ACADEMY

LABORARE ORARE

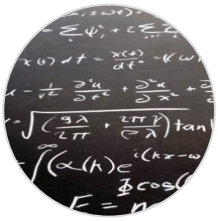
PERSONAL LEARNER CHECKLIST KS4

GCSE Higher Maths



Parent Curriculum Information:

Higher Maths



Subject: Mathematics Higher

Year Group: 11

Subject Leader: Mr Pickup

Email address: t.pickup@becketonline.co.uk

What Specification (syllabus) is being taught?	OCR Mathematics (9-1) J560
What are the key topics and themes? When will they be taught?	5 key areas of Number, Algebra, Geometry & measure, Probability & Statistics and Ratio & proportion have been taught over the last three years. Students have also been supported in presenting a reasoned answer for all questions as there is a much bigger focus on problem solving and interpretation in this new exam.
How will my son or daughter be assessed? When do these assessments take place?	Paper 4 –Calculator (1 hour 30 minutes, 33.3% of GCSE grade) – Paper 5 – Non Calc (1 hour 30 minutes, 33.3% of GCSE grade) – Paper 6 –Calculator (1 hour 30 minutes, 33.3% of GCSE grade) – All students will need a scientific calculator, protractor, compass and ruler.
What can my son or daughter do for revision at home? What materials are provided or available online?	Students will be receiving past papers from the maths department at regular intervals • www.ocr.co.uk specification and some sample papers. • www.justmaths.co.uk Google in 9-1 Foundation to get ALL of the questions from ALL of the specimen papers to practise the new types of question. • www.getrevising.co.uk/ 1,000s of searchable revision materials including quizzes and exam questions. • www.corbettmaths.com/ 5 a day useful for daily maths revision. Provides 5 questions at your chosen level with answers to support revision. Website also has lots of supportive video clips. • https://diagnosticquestions.com/ Student will have to sign up (it's free and you do not have to supply an email). Extensive range of online mini-tests which will mark the tests for students and show mistakes. Students can then access other student's answers to help them understand why they were wrong. **Year 11 Higher Code**: SC-8ZQ743PW0F7G **Year 11 Foundation Code**: SC-R5GEJ5SCNLLQ • www.**mathsgenie**.co.uk lots of revision resources • www.mathswebsite.com Worksheets and videos with free sign up

Unit 1: Number (Higher)					
Excellence [E]	1	Manipulate fractional indices			
	2	Understand the difference between rational and irrational numbers.			
	3	Simplify a surd.			
	4	Simplify a surd calculations			
	5	Rationalise a simple denominator.			
	6	Identify the most efficient methods to solve a multi-stage problem			
	7	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Use powers and roots in calculations.			
	2	Work out a power raised to a power.			
	3	Use negative indices.			
	4	Write a number in standard form.			
	5	Calculate with numbers in standard form without a calculator.			
	6	Calculate with numbers in standard form with a calculator.			
	7	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	8	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	divide BY a decimal number			
	2	round to a given number of significant figures			
	3	estimate the answer to a problem by rounding given numbers to 1 sig fig			
	4	Write error intervals to a given number of decimal places and sig figs			
	5	use the product of prime factors in a Venn diagram to find HCF and LCM			
	6	use HCF and LCM to solve problems			
	7	use the laws of indices:			
	8	Able to use and combine different areas of maths to solve problems			
	9	Solutions are complete and justified with step-by-step working			

Unit 2: Algebra (Higher)					
Excellence [E]	1	Manipulate algebraic expressions by factorising a quadratic expression of the form $ax^2 + bx + c$			
	2	Solve quadratic equations by factorising			
	3	Manipulate algebraic expressions by expanding the product of two binomials			
	4	Manipulate algebraic expressions by factorising a quadratic expression of the form $x^2 + bx + c$			
	5	Solve problems using geometric sequences.			
	6	Find the nth term of a quadratic sequence.			
	7	Identify the most efficient methods to solve a multi-stage problem			
	8	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Change the subject of a formula when two steps are required			
	2	Find and use the nth term for a linear sequence			
	3	Solve linear equations with unknowns on both sides			
	4	Determine whether a particular number is a term of a given arithmetic sequence.			
	5	Work out terms in Fibonacci-like sequences.			
	6	Expand the product of two brackets.			
	7	Use the difference of two squares.			
	8	Factorise quadratics of the form $x^2 + bx + c$.			
	9	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	10	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	use index laws for algebra			
	2	divide expressions			
	3	substitute positive and negative numbers into expressions			
	4	substitute positive and negative numbers into a formula and draw conclusion			
	5	substitute numbers into expressions with brackets and powers			
	6	factorise by taking out a common factor			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 3: Interpreting and Representing Data (Higher)					
Excellence [E]	1	Understand the danger of extrapolation of data			
	2	Consider whether a relationship between two sets of data is casual or causal			
	3	Interpret data from a range of different sources, comparing data sets using mathematical reasoning			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Plot and interpret time series graphs			
	2	Determine, using a scatter graph, whether there is a linear relationship between two variables			
	3	Decide which average is best for a set of data			
	4	Recognise misleading graphs			
	5	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	6	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Construct, use and interpret back-to-back stem and leaf diagrams			
	2	Draw a line of best fit on a scatter graph and use it to predict values			
	3	Construct pie charts			
	4	Plot and interpret scatter graphs			
	5	Finding averages from a grouped frequency table			
	6	Construct and use two-way tables			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 4: Fractions, Ratio and Percentages (Higher)					
Excellence [E]	1	Add, subtract, multiply and divide fractions and mixed numbers to solve word problems.			
	2	Solve problems involving ratios and proportion.			
	3	Solve real-life problems involving percentages			
	4	Convert a recurring decimal to a fraction e.g. 0.12222...			
	5	Solve problem involving percentage change			
	6	Identify the most efficient methods to solve a multi-stage problem			
	7	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Work out percentage increases and decreases of amounts with a calculator using percentage multipliers			
	2	Add, subtract, multiply and divide mixed numbers			
	3	Find the reciprocal of a decimal			
	4	Convert a recurring decimal to a fraction e.g. 0.44444...			
	5	Recognise and use direct proportion.			
	7	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	8	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Work out a percentage of an amount with and without a calculator			
	2	Add, subtract, multiply and divide fractions			
	3	Find the reciprocal of an integer or a fraction			
	4	Sharing an amount in a given ratio			
	5	Convert between currencies and measures using direct proportion			
	6	Write a ratio in the form 1:n			
	7	Work out percentage increases and decreases of amounts without a calculator			
	8	Able to use and combine different areas of maths to solve problems			
	9	Solutions are complete and justified with step-by-step working			

Unit 5: Angles, Pythagoras and Trigonometry H					
Excellence [E]	1	Use trigonometric ratios to solve problems			
	2	Solve problems involving angles of elevation/depression			
	3	Solve problems involving bearings			
	4	Know and use the exact values of sine, cosine and tangent of some angles			
	5	Identify the most efficient methods to solve a multi-stage problem			
	6	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Derive and use sum of interior angles in polygons			
	2	Derive and use sum of exterior angles in polygons			
	3	Solve problems using Pythagoras' Theorem			
	4	Use Trigonometric ratios to find lengths and angles in right-angled triangles			
	5	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	6	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Derive and use angle sum in triangles			
	2	Derive and use angle sum in quadrilaterals			
	3	Find long and short sides in RA triangles using Pythagoras' Theorem			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 6: GRAPHS Higher					
Excellence [E]	1	Find the equation of a straight line given two points			
	2	Interpret quadratic graphs relating to real-world situations			
	3	Interpret linear and non-linear real life graphs			
	4	Draw the graph of a circle			
	5	Identify the most efficient methods to solve a multi-stage problem			
	6	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Sketch straight line graphs, using the gradient and intercepts			
	2	Find the length of a line segment using Pythagoras			
	3	Find the equation of a straight line given the gradient and one point			
	4	Find the midpoint of a straight line segment			
	5	Calculate the average speed from a distance-time graph			
	6	Recognise when lines are parallel or perpendicular to each other			
	7	Solve quadratic and cubic equations using a graph (including ax^2+bx=c)			
	8	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	9	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Find the gradient and y-intercept from a linear equation.			
	2	Re-arrange equations into the form y=mx+c			
	3	Draw and interpret distance-time graphs and velocity-time graphs			
	4	Draw linear, quadratic and cubic graphs from a table			
	5	Recognise direct proportion graphs			
	6	Recognise reciprocal functions from their shape			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 7: Area and Volume (Higher)					
Excellence [E]	1	Calculate arc lengths, angles and areas of sectors of circles.			
	2	Calculate volume and surface area of a cylinder and a sphere.			
	3	Calculate volume and surface area of pyramids and cones.			
	4	Solve problems involving pyramids and cones.			
	5	Solve problems involving volumes and surface areas.			
	6	Identify the most efficient methods to solve a multi-stage problem			
	7	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Calculate the maximum and minimum possible values of a measurement.			
	2	Calculate the area and circumference of a circle.			
	3	Calculate area and circumference in terms of π.			
	4	Calculate the perimeter and area of semicircles and quarter circles.			
	5	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	6	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Find the height of a trapezium given its area.			
	2	Convert between area measures.			
	3	Solve problems involving surface area and volume.			
	4	Convert between measures of volume and area			
	5	Calculate the surface area of a prism.			
	6	Find the perimeter and area of compound shapes.			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 8: Transformations and Constructions (Higher)					
Excellence [E]	1	Understand and use vectors			
	2	Use loci to solve problems.			
	3	Construct the shortest distance from a point to a line using a ruler and compasses.			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Use ruler and compass methods to construct the perpendicular bisector of a line segment and to bisect an angle			
	2	Enlarge shapes by fractional and negative scale factors about a centre of enlargement.			
	3	Find centre of enlargement and scale factor of given shapes			
	4	Carry out and describe combinations of transformations.			
	5	Draw and use scales on maps and scale drawings.			
	6	Solve problems involving bearings.			
	7	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	8	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Draw plans and elevations of 3D solids.			
	2	Reflect a 2D shape in a mirror line.			
	3	Rotate a 2D shape about a centre of rotation.			
	4	Construct triangles using a ruler and compasses.			
	5	Describe reflections and rotations.			
	6	Enlarge shapes by positive integer scale factors about a centre of enlargement.			
	7	Translate a shape using a vector.			
	8	Able to use and combine different areas of maths to solve problems			
	9	Solutions are complete and justified with step-by-step working			

Unit 9: Equations and Inequalities (Higher)					
Excellence [E]	1	Solve simultaneous equations with one quadratic and one linear equation			
	2	Derive the quadratic formula			
	3	Interpret real-life problems with two unknowns and solve them			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Solve a quadratic by completing the square			
	2	Rearrange and solve a quadratic e.g. $3x^2 + 4 = 100$			
	3	Factorise a quadratic where $a \neq 1$			
	4	Factorise and solve a quadratic			
	5	Show the solutions to inequalities in set notation			
	6	Find the roots of a quadratic			
	7	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	8	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Solve simultaneous equations algebraically			
	2	Create equations from a worded problem			
	3	Solve linear inequalities			
	4	Show an inequality on a number line			
	5	Complete the square for a quadratic			
	6	Know that a square has two possible roots			
	7	Factorise a quadratic where $a = 1$			
	8	Use the quadratic equation to solve a quadratic			
	9	Able to use and combine different areas of maths to solve problems			
	10	Solutions are complete and justified with step-by-step working			

Unit 10: Probability (Higher)					
Excellence [E]	1	Draw and use tree diagrams to calculate conditional probability			
	2	Use two-way tables to calculate conditional probability			
	3	Use Venn diagrams to calculate conditional probability			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Calculate probabilities of repeated events			
	2	Draw and use probability tree diagrams			
	3	Draw and use frequency trees			
	4	Draw and use tree diagrams with and without replacement			
	5	Understand set notation			
	6	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	7	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	List all outcomes for two events systematically			
	2	List all the possible outcomes of two events in a sample space diagram.			
	3	Calculate probabilities from a sample space diagram			
	4	Find the probabilities of mutually exclusive outcomes and events.			
	5	Find the probability of an event not happening			
	6	Draw and interpret Venn diagrams			
	7	Use Venn diagrams for simple probability			
	8	Understand the term ‘independent’			
	9	Understand the product rule and when it can be used			
	10	Compare real results with theoretical expected values to see if a game is fair.			
	11	Understand and use relative frequency			
	12	Able to use and combine different areas of maths to solve problems			
	13	Solutions are complete and justified with step-by-step working			

Unit 11: Multiplicative Reasoning (Higher)					
Excellence [E]	1	Solve problems combining multiple compound interest/depreciations			
	2	Use a tangent to a curve to calculate rates			
	3	Solve complex ratio problems that require cross-multiplication			
	4	Solve problems using direct proportion			
	5	Solve problems using indirect proportion			
	6	Identify the most efficient methods to solve a multi-stage problem			
	7	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Use compound interest in context			
	2	Solve reverse percentage problems with a calculator			
	3	Solve reverse percentage problems without a calculator			
	4	Use a formula to calculate speed and acceleration			
	5	Understand the variables for SUVAT			
	6	Solve problems using compound measures			
	7	Identify the graphs of direct and inverse proportion			
	8	Create an equation from a proportion problem			
	9	Interpret speed-time graphs			
	10	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	11	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Work out the decimal multiplier for a percentage increase/decrease			
	2	Work out the amount after a percentage increase/decrease			
	3	Convert between metric speed measures			
	4	Interpret distance-time graphs			
	5	Understand compound units			
	6	Able to use and combine different areas of maths to solve problems			
	7	Solutions are complete and justified with step-by-step working			

Unit 12: Similarity and Congruence (Higher)					
Excellence [E]	1	Use conversion of length, area and volumes to solve extended problem			
	2	Prove shapes are congruent			
	3	Identify the most efficient methods to solve a multi-stage problem			
	4	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Prove triangles are congruent			
	2	Prove shapes are similar			
	3	Understand link between length, area and volume scale factors			
	4	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	5	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Identify congruent shapes			
	2	Identify similar shapes			
	3	Use scale factors to calculate lengths in similar shapes			
	4	Calculate the scale factor of an enlargement			
	5	Convert between metric units			
	6	Able to use and combine different areas of maths to solve problems			
	7	Solutions are complete and justified with step-by-step working			

Unit 13: More Trigonometry (Higher)					
Excellence [E]	1	Apply transformations to trigonometric graphs			
	2	Solve reverse problems using area of a triangle formula			
	3	Use sine and cosine rule in bearing based problems			
	4	Use sine and cosine rule to solve problems in 3D			
	5	Find the angle between a line and a plane			
	6	Identify the most efficient methods to solve a multi-stage problem			
	7	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Draw graphs when given a transformation			
	2	Justify given coordinates when a transformation is applied			
	3	Use trigonometric graphs to find subsequent values e.g. sinx=43			
	4	Apply area of a triangle formula to a problem			
	5	Use sine and cosine rule to find missing sides			
	6	Use sine and cosine rule to find missing angles			
	7	Solve geometric problems on a coordinate grid			
	8	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	9	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Learn the exact values for trig ratios of 30, 45, 60			
	2	Sketch graph of sin, cos and tan			
	3	Describe the transformation of f(x±a), f(x)±a			
	4	Know the formula for area of a triangle			
	5	Remember and use Pythagoras Theorem in 2D			
	6	Remember and use trigonometry in 3D			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 14: Further Statistics (Higher)					
Excellence [E]	1	Use a cumulative frequency graph to estimate frequency > or < a specified value			
	2	Interpret box plots and use to compare sets of data and draw conclusions			
	3	Use histogram to find how many people scored > specified value			
	4	Estimate number of people in a given interval from Histogram			
	5	Identify the most efficient methods to solve a multi-stage problem			
	6	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Construct a cumulative frequency graph			
	2	Calculate the median and IQR from a cumulative frequency graph			
	3	Understand that each section of a box plot contains 25% of the data			
	4	Construct a box plot from key information			
	5	Understand the impact outliers has on the range and IQR			
	6	Construct a histogram			
	7	Interpret a histogram			
	8	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	9	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Understand and define: primary, secondary, discrete, continuous			
	2	Consider bias when planning data collection			
	3	Understand the difference between sample and population			
	4	Understand how different sample sizes will affect the reliability of conclusions drawn			
	5	Construct a box plot from raw data			
	6	Find the frequency density from a grouped frequency table			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 15: Equations and Graphs (Higher)					
Excellence [E]	1	Solve quadratic inequalities in one variable			
	2	Rearrange an equation to make an iterative process			
	3	Use an iterative process to find a solution to a cubic			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Represent linear inequalities on a graph			
	2	Identify the possible region on a graph given multiple linear inequalities			
	4	Find the roots of a cubic			
	5	Sketch cubic graphs			
	6	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	7	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Solve simultaneous equations graphically			
	2	Solve single variable inequalities and show solution on a number line			
	3	Draw straight line graphs			
	4	Use trial and improvement to find a solution			
	5	Factorise and solve a quadratic			
	6	Sketch quadratic graphs			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 16: Circle Theorems (Higher)					
Excellence [E]	1	Use a combination of circle theorems solve problems			
	2	Find the equation of the tangent to a circle at a given point.			
	3	Identify the most efficient methods to solve a multi-stage problem			
	4	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Understand, prove and use facts about angles subtended at the centre of circles			
	2	Understand, prove and use facts about the angle in a semicircle being a right angle			
	3	Understand and use facts about tangents at a point and from a point			
	4	Understand and use facts about chords and their distance from the centre of a circle			
	5	Understand, prove and use facts about angles subtended at the circumference of a circle			
	6	Understand, prove and use facts about cyclic quadrilaterals			
	7	Prove the alternate segment theorem			
	8	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	9	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Use angle rules for line, point, quadrilateral and triangles to solve geometric problems			
	2	Use angles in parallel lines to solve geometric problems			
	3	Names parts of a circle			
	4	Able to use and combine different areas of maths to solve problems			
	5	Solutions are complete and justified with step-by-step working			

Unit 17: More Algebra (Higher)					
Excellence [E]	1	Solve equations that involve algebraic fractions			
	2	Rationalise the denominator of an algebraic fraction			
	3	Prove a result using algebra			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Change the subject of a formula where the subject appears twice			
	2	Change the subject of a formula involving fractions where all the variables are in the denominators			
	3	Simplify an algebraic fraction			
	4	Complete fraction arithmetic with more complex algebraic fractions			
	5	Simplify expressions involving algebraic surds			
	6	Expand expressions involving algebraic surds			
	7	Rationalise the denominator of fraction			
	8	Find composite functions			
	9	Find inverse functions			
	10	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	11	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Change the subject of a formula including powers			
	2	Factorise a quadratic			
	3	Factorise by a difference of two squares			
	4	Add and subtract algebraic fractions			
	5	Multiply and divide algebraic fractions			
	6	Use function notation			
	7	Able to use and combine different areas of maths to solve problems			
	8	Solutions are complete and justified with step-by-step working			

Unit 18: Vectors and Geometric Proof (Higher)					
Excellence [E]	1	Solve geometric problems in two dimensions using vector methods			
	2	Apply vector methods for simple geometric proofs			
	3	Identify the most efficient methods to solve a multi-stage problem			
	4	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Calculate the resultant of two vectors			
	2	Express points as position vectors			
	3	Use combinations of vectors to solve problems			
	4	Prove lines are parallel			
	5	Prove lines are collinear			
	6	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	7	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Use vectors to describe translations			
	2	Represent vectors graphically			
	3	Find the resultant of a vector			
	4	Add and subtract column vectors			
	5	Able to use and combine different areas of maths to solve problems			
	6	Solutions are complete and justified with step-by-step working			

Unit 19: Proportion and Graphs (Higher)					
Excellence [E]	1	Solve problems including square and cubic proportionality			
	2	Use gradient of a tangent at a point on velocity-time and distance-time graphs and interpret result			
	3	Estimate the area under a non-linear graph			
	4	Identify the most efficient methods to solve a multi-stage problem			
	5	Solutions are imaginative and justified with step-by-step working that uses the correct notation, language and terminology			
Advancing [A]	1	Write and solve equations using direct proportion			
	2	Write and solve equations using inverse proportion			
	3	Sketch graphs of exponential functions			
	4	Calculate the gradient of a tangent at a point			
	5	Understand the relationship between translating a graph and the change in its function notation			
	6	Understand the effect reflecting a curve in one of the axes has on its function form			
	7	Able to use and combine different areas of maths to solve problems in unfamiliar situations			
	8	Solutions are complete and justified with step-by-step working that uses the correct notation, language and terminology			
Secure [S]	1	Recognise graphs of direct and inverse proportion			
	2	Understand the meaning of proportionality			
	3	Recognise graphs of exponential functions			
	4	Able to use and combine different areas of maths to solve problems			
	5	Solutions are complete and justified with step-by-step working			