

Year 10	
Trigonometry (for any triangle)	Sine rule. Cosine rule. Area of a triangle using $\frac{1}{2}ab\sin C$. Using the sine and cosine rules (bearings, angle of elevation, problem solving). 3-D calculations including finding the angle between a line and a plane.
Unit 1 Test	
Quadratics equations	Solving by quadratic equations by factorising. Problems leading to quadratic equations. Completing the square to solve quadratic equations and finding turning points. Quadratic equations – solving with the formula. More problems leading to quadratic equations (formulate then solve by choosing appropriate method).
Arcs, sectors, segments	Arcs of circles. Areas of a sectors and segments (using $\frac{1}{2}r^2\sin\theta$).
Unit 2 Test	
Simultaneous equations	Solving linear simultaneous equations using substitution. Linear and quadratic simultaneous equations (incl. $x^2+y^2=r^2$). Distance between 2 points.
Inequalities	Linear inequalities. Set notation for inequalities. Shading regions given by inequalities. Quadratic inequalities.
Proportion	Recognising direct proportion. Equations for direct proportion. Recognising inverse proportion. Equations for inverse proportion.
Ratio	Ratio using two-way tables.
Unit 3 Test	
Surds and recurring decimals	Convert recurring decimals into fractions. Surds recap (rules, simplifying, expanding brackets). Rationalising denominators.
Indices	Rules of indices. Finding indices from equations. Estimating powers and roots. Mixed problems involving indices. Compound and simple interest.
Algebraic fractions	Cancelling. Multiplying and dividing. Adding and subtracting algebraic fractions. Equations containing algebraic fractions.
Unit 4 Test	
Changing the subject of a formula	Changing the subject of formulae involving fractions, powers, roots, and collecting on both sides.
Functions	Function notation. Inverse functions. Composite functions.
Probability	Product rule for counting. Venn diagrams including set notation. Recap: Probability trees. Conditional probability.
Unit 5 Test	
Graphs	Areas under graphs (trapezium rule). Instantaneous and average rates of change. Distance/time, velocity/time graphs.
Iteration	Trial and improvement. Fixed point iteration. Interval bisection.
Vectors	Basic concepts. Magnitude. Equal vectors. Multiplying by a scalar. Adding/subtracting vectors. Vector geometry (proving that 3 points lie on a straight line).
Revision	
Summer Exam	
Trigonometry (advanced)	$\sin$, $\cos$, $\tan$ for 30, 45, 60. Mixed problems involving trigonometry. Trigonometry for angles of any size. Solving equations involving $\sin$, $\cos$ or $\tan$.
Financial literacy (time permitting)	Calculating take home pay (gross pay, income tax, National Insurance, pensions). Buying a house (mortgages, deposit, stamp duty). Calculating monthly mortgage payments using mathematical formula.
Summer Holiday	

Assessment Procedure

- Autumn grade will be based on the results of Year 9 exam and Unit Tests 1 and 2
- Spring grade will be based on the results of Year 9 exam and Unit Tests 1,2, 3 and 4
- Summer grade will be based on the summer exam (Paper 1 = non-calc Paper 2 = calc)