Fairfield High School Curriculum Overview – Year 11

Subject	Maths	**Why do we study these units in Year 11?**
Lessons per fortnight	8	These units continue to challenge the higher tier students and prepare them for studying maths at Post 16 while also consolidating and supporting all students to achieve their best. The topics and units become completely tailored to classes or individual students' needs.
Setting	Sets 1, 2 Study Higher SoW. Some Set 3 students change tiers dependent on their need for challenge or support. Set 4 study the Foundation SoW	

Students are encouraged to be Responsible Global Citizens through activities/content on…
Every unit has a sustainable development goal assigned. This is used as inspiration for teachers to incorporate global learning elements. Every assessment has one global learning question based on the respective sustainable development goal.
We ensure all students experience high challenge in the subject by including…

Highly differentiated lessons tailored to the need of every class with problem solving and reasoning elements that will sufficiently challenge high attaining students whilst being accessible to students who need a little more scaffolding
Literacy work this year includes… All lessons will have mathematical reasoning attained through questioning and oracy. All lessons and assessments will have problem solving components that require students to interrogate mathematical language and find solutions to problems that are presented to them in words thereby translating language into abstract ideas.
Employability opportunities/skills covered this year are… Throughout the year all students will be invited to workshops, trips and activities that will focus on employability, creativity, global learning and sustainability in mathematics.

Underlined content is for Higher Tier only

Term	Unit title	Knowledge and Understanding/content	Skills	Assessment
1	1. Limits of Accuracy 2. Advanced Graphs	• <u>Rational and Irrational Numbers</u> • <u>Understand and use surds</u> • Estimating answers to calculations • Understand and use limits of accuracy • <u>Upper and lower bounds</u> • Find the equation of a straight line from a graph	Fluency in Algebra Problem Solving Reasoning	End of Unit Test incorporating elements of fluency, reasoning and problem solving.

		• Find equations of parallel lines • Find equations of perpendicular lines • Plot and read from quadratic graphs (significant points) • Plot and read from cubic graphs • Plot and read from reciprocal graphs • Understand and use exponential graphs		
2	1. Advanced Algebra	• Construct and interpret speed/time graphs • Construct and interpret piece-wise graphs • Estimate area under a curve • Factorise quadratic expressions • Solve quadratic equations by factorisation • Complete the square • Solve quadratic equations using the quadratic formulae	Fluency in Algebra Problem Solving Reasoning	November PPEs

	2. Functions	• Form and solve equations and inequalities in the context of shape • Change the subject of a formula • Change the subject where the subject appears more than once • Solve equations by iteration • Substitution into expressions and formulae • Use function notation • Work with composite functions • Work with inverse functions • Solve quadratic inequalities		
3	1. Compound Measures 2. Advanced Geometry	• Construct complex direct proportion equations • Calculate with pressure and density • Understand inverse proportion • Construct inverse proportion equations • Sine and cosine rules • Area of a triangle with sine	Fluency in Geometry and Algebra Problem Solving Reasoning	

		• Proving geometric facts • Explore quadrilaterals using vectors • Understand parallel vectors • Explore co-linear points using vectors • Circle Theorems • Understand and use trigonometrical graphs • Sketch and identify translations of the graph of a given function • Sketch and identify reflections of the graph of a given function		
4	1. Reviewing FDP	• Add and subtract complex algebraic fractions • Multiply and divide complex algebraic fractions • Form and solve equations and inequalities with fractions • Solve equations with algebraic fractions • Use the product rule for counting	Fluency in Algebra and Geometry Problem Solving Reasoning	Feb PPEs

	2. Proof	• Find and use the equation of a circle centre O • Find the equation of the tangent to any curve • Simultaneous equations with circles and lines • Odds and evens proofs • Algebraic proofs • Geometric proofs		