Further Maths | Key Stage 5 Curriculum Plan | Year 12

Exam Board:	*Edexcel*
Qualification:	*8/9FMO*
Assessment Information:	*AS: 2 exams, each 1hr 40 mins or A-level: 4 exams, each 1hr 30 minutes*

Link to official specification

Department Information:

AS and A-Level Further *Mathematics are popular with our most able Mathematicians who are looking to continue studying maths related courses at university. The AS content is taught in Year 12 and assessed at the end of the year if students choose not to continue into Year 13. The A level is assessed at the end of Year 13. Students must also be studying A level Maths, which is run in parallel with Further Maths. Students have nine lessons each fortnight which are taught by two subject specialists. In addition to the compulsory Core Pure units, students will study two Applied units from Further Statistics, Further Mechanics and Discrete Mathematics.*

ACHIEVE in the curriculum:

*Students are encouraged to work **collaboratively** on problems, to show **ambition** through the resources they opt to work on, to show **endurance** to master concepts and to demonstrate **integrity** in their personalised home learning. We strive for students to share in our love of maths and ultimately be **happy** in their lessons.*

Curriculum Aims & Intent:

Our curriculum is designed to extend students' mathematical knowledge, skills, and understanding set out in the A level Maths qualification. Students will be able to make logical and reasoned decisions when solving problems in a variety of contexts and make connections between different aspects of maths and their application in other subjects and the real world. We aim to foster enjoyment and provide a strong foundation for progress to further study.

Resources:

https://www.pearsonactivelearn.com/app/home - online textbooks (login as a student with school email and password: FurzePlatt1).
https://integralmaths.org/ - username and password 178AL-firstinitalsurname
https://login.mymaths.co.uk/login (School username: furze password: reflect. Students are given their own portal login details in September)
https://ukmt.org.uk/senior-challenges/senior-mathematical-challenge-UKMT past papers.
https://www.mathsgenie.co.uk/newalevel.html - Revision resources and past papers
https://www.physicsandmathstutor.com/maths-revision/
https://www.revisely.com/alevel/maths/edexcel
https://www.savemyexams.com/a-level/maths/edexcel/

Students should bring to all Maths lessons: Scientific Calculator (we recommend the Casio fx-CG50) and laptops.

How we keep parents informed:

Progress reports are published 4 times per year, in October, January, March and July, with a face-to-face parents' evening in November.

How parents can help their child:

Please check that students are completing home learning which is set every lesson on ClassCharts. Encourage students to seek help when needed and attend Maths workshop every Tuesday in M7/8.

What we study and when:					
Term	**Unit, Topic Or Summary Of Work Covered**	**Knowledge, Understanding & Skills Developed**	**ACHIEVE / Personal Development Focus**	**How The Work Is Assessed**	**Careers Links**
1	Core Pure Maths	*Complex Numbers - Argand diagrams - Matrices - Linear transformations - Series*	All lessons offer opportunities for students to demonstrate our ACHIEVE values	Written assessments throughout the year Full AS exam in May or PPE in June	Engineer – Statistician – Data Analyst – Actuary – Air traffic controller- Architect – Forecaster – Computer programmer Maths in Action conference
2	Core Pure Maths	*Proof by induction*			
	Further Statistics	*Discrete random variables*			
	Further Mechanics	*Momentum and impulse*			
	Discrete Maths	Algorithms - Graphs - Networks			
3	Core Pure Maths	*Roots of polynomials*			
	Further Statistics	Poisson Distribution			
	Further Mechanics	Work - Energy - Power			
	Discrete Maths	*Route inspection*			
4	Core Pure Maths	*Vectors*			
	Further Statistics	Hypothesis testing - Chi-squared tests			
	Further Mechanics	*Elastic collisions*			
	Discrete Maths	*Linear programming - Critical path analysis*			
5	Core Pure Maths	*Volumes of revolution*			
	Revision	*All AS content for AS exam or PPE*			
6	Y2 Pure Maths	Pre-teaching topics that are pre-requisites for the Y2 Further Maths course.			