



ASPIRE • BELIEVE • ACHIEVE



Curriculum Overview: Mathematics Year 12 AS Further Maths

Summer Term 1			
What are we learning?	What knowledge, understanding and skills will we gain?	What does excellence look like?	What additional resources are available?
<p><b>GROUPS</b></p> <p><b>FURTHER MATRIX ALGEBRA</b></p> <p><b>RECURRECE RELATIONS</b></p>	<p><b>Knowledge</b></p> <ul style="list-style-type: none"> <li>- know and be able to use the axioms for a group.</li> <li>-know how to use derived quantities and units: velocity, acceleration, force, weight</li> <li>- know how to diagonalise a <math>2 \times 2</math> matrix.</li> </ul> <p><b>Understanding</b></p> <ul style="list-style-type: none"> <li>- using the Cayley-Hamilton theorem to show that every <math>2 \times 2</math> matrix satisfies its own characteristic equation -Understanding the concept of a force</li> <li>-using a recurrence relation to find the terms of a sequence;</li> </ul> <p><b>Skills</b></p> <ul style="list-style-type: none"> <li>- be able to use Cayley tables and describe the properties of cyclic groups.</li> <li>- be able to find the eigenvectors and eigenvalues of <math>2 \times 2</math> matrices</li> </ul>	<p>Applying knowledge to exam style questions</p> <p>Ability to interpret results in the context of the given problem</p> <p>Translate a situation in context into a mathematical model, making simplifying assumptions</p>	<p><a href="http://www.mathsgenie.co.uk">www.mathsgenie.co.uk</a></p> <p><a href="http://www.physicsandmathstutor.com">www.physicsandmathstutor.com</a></p> <p><a href="http://www.drfrostmaths.com">www.drfrostmaths.com</a></p>

	- be able to prove by induction the closed forms		
<b>Summer Term 2</b>			
What are we learning?	What knowledge, understanding and skills will we gain?	What does excellence look like?	What additional resources are available?
<b>Past papers questions</b>	<p><b>Knowledge</b> -know of all essential mathematical concepts required for the exam</p> <p><b>Understanding</b> -Understanding of how to tackle an exam style question that test problem solving skills</p> <p><b>Skills</b> - Comprehend and critique mathematical arguments, proofs and justifications of methods and formulae, including those relating to applications of mathematics  - Construct and present mathematical arguments through appropriate use of diagrams; sketching graphs; logical deduction; precise statements involving correct use of symbols and connecting</p>	<p>Understand and use language and symbols associated with set theory, as set out in the glossary</p> <p>Understand, interpret and extract information from diagrams and construct mathematical diagrams to solve problems</p> <p>Recognise the underlying mathematical structure in a situation and simplify and abstract appropriately to enable problems to be solved</p> <p>Interpret the outputs of a mathematical model in the context of the original situation (for a given model or a model constructed or selected by the student)</p>	

	language, including: constant, coefficient, expression, equation, function, identity, index, term, variable	Use a mathematical model with suitable inputs to engage with and explore situations (for a given model or a model constructed or selected by the student)	
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