

Y11 ROADMAP - MATHEMATICS

Subject Aim: The aim of Maths for Year 11 is to allow students to become fluent in the fundamentals of mathematics, reason mathematically by conjecturing relationships and solve problems by applying their mathematics to a variety of routine and non-routine problems, encouraging independence and more resilience in their way of working. This year's topics build on previous units whilst preparing students for the more advanced GCSE topics.

TERM 1	<p>Why are they theorems and not theories?</p> <p>This first unit in Maths this year allows students to investigate circle theorems. They will apply the knowledge and skills learnt to solve multi-step problems in a variety of scenarios. The second unit allows students to answer, 'Why is trigonometry important in maritime navigation?' This unit retrieves previous knowledge of trigonometry whilst exploring the more advanced aspects.</p>
TERM 2	<p>Why is important to visualise data?</p> <p>For the first part of this term, opportunity will be given for revision before the PPEs. This topics covered will be decided by teachers and students will be expected to be proactive in revising independently. Students will also explore visualising data and data presentation before going on to answer the question, 'How can we prove ideas using algebra?' in the final unit for the term.</p>
TERM 3	<p>What is the magnitude of the wind?</p> <p>In this unit, students will explore vectors and use them to represent a variety of scenarios. They will apply their knowledge and skills to solve multi-step problems giving reasons for their solutions. The final unit to be covered allows students to answer the question, 'Why are suspension bridges an example of parabolas?'. They will apply the knowledge learnt to multi-step, real life problems.</p>
TERM 4	<p>Can you respond to feedback to make progress?</p> <p>This term will be used for revision and retrieval of previous knowledge. Students will be expected to work more independently to solve problems. They will be given regular feedback and will be given opportunity to practise exam questions and papers.</p>
TERM 5	<p>Can you respond to feedback to make progress?</p> <p>This term will be used for revision and retrieval of previous knowledge. Students will be expected to work more independently and be proactive at seeking advice. They will be given regular feedback and will be given opportunity to practise exam questions and papers before the exam at the end of this term.</p>
TERM 6	<p>Can you respond to feedback to make progress?</p> <p>This term leads up to the final exam papers, therefore exam preparation will continue.</p>



ASSESSMENT

- Most lessons will test student knowledge using a variety of activities including diagnostic questions, find and fix and GCSE style problems.
- Each and every lesson will be punctuated by various hinge questions, statements and discussion opportunities.
- For each unit, students will be given a short Mini-Assessment assessing their understanding of the key vocabulary, knowledge and concepts.
- Each term will also contain a longer assessment with a series of questions providing students with an opportunity to explain and justify answers.



INDEPENDENT LEARNING

- Knowledge Organisers are expected to be used weekly to support the learning and recap of key vocabulary as the course progresses.
- There will be various independent learning challenges set each half-term which will allow students to develop their subject specialist skills as well as knowledge and understanding.
- There will be opportunities to practice crucial retrieval and revision skills with various resources and templates provided.
- Sparx Maths will be used as an online resource to aid independent learning.



ENRICHMENT

- Maths challenge activities.
- Maths' relays allowing opportunity for problem solving.
- Maths trip Term 5 Well-being and revision trip Playzone Lincoln

What Next? You should work independently to fill gaps identified by your teacher alongside completing revision activities within the lesson. This can include use of practice papers, MyMaths and revision grids.