

Curriculum Plan

Department/subject: Mathematics - Year 13 Further Spring Term

Our Vision: **We take opportunities and aspire to excellence**

Our Intent:

- All students will experience a curriculum richness, breadth and depth
- The curriculum equips every student with the knowledge and skills for the future in our local area and beyond
- The curriculum builds on prior knowledge and creates a 'web of knowledge'
- Gaps in knowledge and skills are identified and addressed quickly

Year	Spring 1	Spring 2
Knowledge to be taught	<p>Pure: Modelling with differential equations – modelling, simple harmonic motion, damped and forced harmonic motion, coupled first-order simultaneous differential equations.</p> <p>Applied: Decision Analysis – Decision trees, utility.</p>	<p>Pure: Revision - Topics will be devised around individual groups need in light of their most recent mock assessment. Curriculum will include a mixture of topic focus lessons, revision session, past paper lessons, Walking talking Mocks, exam question practice.</p> <p>Applied: Revision - Topics will be devised around individual groups need in light of their most recent mock assessment. Curriculum will include a mixture of topic focus lessons, revision session, past paper lessons, Walking talking Mocks, exam question practice.</p>
Key Words	<p>Pure: Modelling with differential equations – simple harmonic motion, proportional, acceleration, fixed point, centre of oscillation, damping force, constant, critical, light, forced, coupled.</p> <p>Applied: Decision Analysis – decision nodes, end nodes, chance nodes, branches, expected monetary value, optimal, risk, utility function, relative value</p>	

<p>Links to prior knowledge</p>	<p>Pure: Modelling with differential equations – Methods in differential equations (Year 13 Autumn 2)</p> <p>Applied: Decision Analysis – GCSE Maths expected frequency.</p>	
<p>How knowledge is assessed</p>	<p>Knowledge is assessed through both a formative and a summative approach. Teachers will use some of the following:</p> <ul style="list-style-type: none"> <li>● Baseline assessments</li> <li>● Quizzes</li> <li>● Retrieval Starter questions</li> <li>● Teacher questioning throughout the lessons</li> <li>● Mini white boards</li> <li>● True or false activities</li> <li>● Student’s discussion and presentations</li> </ul> <p>At the end of teaching every topic students complete a fundamentals test that is either self, peer or teacher assesses. This highlights gaps in knowledge so that these can be recapped prior to their end of topic test.</p> <p>Teachers mark and feedback the challenge test which is recorded on SIMs.</p>	<p>Knowledge is assessed through both a formative and a summative approach. Teachers will use some of the following:</p> <ul style="list-style-type: none"> <li>● Baseline assessments</li> <li>● Quizzes</li> <li>● Retrieval Starter questions</li> <li>● Teacher questioning throughout the lessons</li> <li>● Mini white boards</li> <li>● True or false activities</li> <li>● Student’s discussion and presentations</li> </ul> <p>At the end of teaching every topic students complete a fundamentals test that is either self, peer or teacher assesses. This highlights gaps in knowledge so that these can be recapped prior to their end of topic test.</p> <p>Teachers mark and feedback the challenge test which is recorded on SIMs. Students sit a mock exam which the teacher marks and feeds back to students</p>
<p>How gaps will be addressed</p>	<p>Staff have students mock results which gives an indication of where students currently are and identifies students who will need more support and this support is provided in the form of intervention.</p>	<p>Staff have students mock results which gives an indication of where students currently are and identifies students who will need more support and this support is provided in the form of intervention.</p>

	<p>Staff analyse fundamentals test results and will provide in lesson intervention where necessary to develop students understanding of the key concepts.</p> <p>Staff highlight areas of concern and discuss focus points with students following their challenge tests.</p> <p>Staff provide re-tests for students that needed to do more work on a given topic.</p>	<p>Staff analyse fundamentals test results and will provide in lesson intervention where necessary to develop students understanding of the key concepts.</p> <p>Staff highlight areas of concern and discuss focus points with students following their challenge tests.</p> <p>Staff provide re-tests for students that needed to do more work on a given topic.</p>
<p>Cultural capital lessons</p>	<p>Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills.</p> <p>Links to 'real life' maths will be made to give concept to mathematical skills. This is particularly clear in the applied mathematics involving Decision Maths where we are primarily looking at improving profit and loss, and how to move around a network in the most efficient manner.</p>	<p>Problem solving will be embedded into lessons where students will learn to UNPACK problems pulling together different mathematical skills.</p> <p>Links to 'real life' maths will be made to give concept to mathematical skills. This is particularly clear in the applied mathematics involving Decision Maths where we are primarily looking at improving profit and loss, and how to move around a network in the most efficient manner.</p>