



At Thomas Mills, our Key Stage 4 Mathematics curriculum is designed to equip pupils with the knowledge, skills, and confidence required to succeed in their GCSE examinations and beyond. We aim to develop mathematically fluent, logical, and independent learners who can apply their understanding to solve problems in both familiar and unfamiliar contexts.

Our intent is for all KS4 pupils to:

- **Master key mathematical concepts and techniques** with accuracy and efficiency, ensuring strong fluency across all areas of the GCSE syllabus.
- **Develop sophisticated mathematical reasoning** by constructing clear, logical arguments and critically evaluating mathematical information.
- **Apply their mathematics confidently to solve complex problems**, demonstrating creativity, perseverance, and the ability to interpret and model real-world situations.

The KS4 curriculum is structured to build on prior knowledge from KS3, consolidating and extending skills with increasing challenge. It provides a balanced approach between procedural fluency, conceptual understanding and problem solving, ensuring pupils are well-prepared for both foundation and higher-tier GCSE examinations.

We strive to foster a positive and resilient mindset by:

- Emphasizing the relevance of mathematics in everyday life, higher education, and careers.
- Encouraging independent learning, self-reflection, and continuous improvement.
- Providing targeted support and stretch opportunities to meet the needs of all learners.

By the end of Key Stage 4, pupils will be confident, competent mathematicians ready to progress to further study or employment, equipped with the mathematical skills essential for success in the modern world.

Year 11			
Term	Topic	Knowledge and Skills	Useful Links
1		Knowledge and Skills: Pupils will learn:	



	Unit 22 – Geometry and measure: Right-angled triangles	• how to use Pythagoras' theorem in right-angled triangles • how to solve problems using Pythagoras' theorem • how to use trigonometric ratios in right-angled triangles • how to use trigonometry to solve problems	Right-angled trigonometry KS4 Y10 Maths Lesson Resources Oak National Academy Checking and further securing understanding of Pythagoras' theorem Foundation KS4 Y10 Maths Lesson Resources Oak National Academy Theorem of Pythagoras (converse) - Applying Pythagoras Theorem - National 5 Maths Revision - BBC Bitesize
	Unit 23 – Geometry and measure: Congruency and similarity	• how to show that two triangles are congruent • how to work out the scale factor for two similar shapes • how to work out lengths of sides in similar shapes	Checking and securing understanding of congruence and similarity Foundation KS4 Y10 Maths Lesson Resources Oak National Academy Similarity KS4 Y10 Maths Lesson Resources Oak National Academy Similar shapes - Transformations - Edexcel - GCSE Maths Revision - Edexcel - BBC Bitesize
	Unit 24 – Probability: Combined events	• how to work out the probabilities for two or more events • how to use two-way tables to solve probability problems • how to use Venn diagrams to solve probability problems • how to draw and use frequency tree diagrams	Conditional probability KS4 Y11 Maths Lesson Resources Oak National Academy Find probabilities from Venn diagrams including basic set notation Foundation KS4 Y11 Maths Lesson Resources Oak National Academy



		how to draw and use probability tree diagrams to solve probability problems	
Assessments		At the end of each unit, pupils will complete a written assessment designed to evaluate their understanding of the key concepts, methods and problem-solving skills covered throughout the unit. These assessments provide an opportunity for pupils to demonstrate their mathematical thinking, fluency and application of knowledge in a range of contexts.	
2	Unit 25 – Number: Powers and standard form Unit 26 – Algebra: Simultaneous equations and linear inequalities Unit 27 – Algebra: Non-linear graphs	Knowledge and Skills: Pupils will learn: - how to calculate with powers (indices) - how to write numbers in standard form - how to calculate with standard form - how to solve linear simultaneous equations algebraically - how to solve a linear inequality and represent the solution on a number line - how to interpret a distance–time graph - how to draw and interpret graphs of the depths of a liquid as a container is filled - how to draw quadratic graphs	Standard form calculations KS4 Y10 Maths Lesson Resources Oak National Academy Standard form - Standard form - Edexcel - GCSE Maths Revision - Edexcel - BBC Bitesize Forming simultaneous equations Foundation KS4 Y10 Maths Lesson Resources Oak National Academy Simultaneous equations: 2 variables KS4 Y10 Maths Lesson Resources Oak National Academy Non-linear graphs KS4 Y10 Maths Lesson Resources Oak National Academy



		• how to solve problems involving quadratic equations • how to solve quadratic equations by factorisation • how to solve quadratic equations graphically • how to recognise and find the significant points of a quadratic graph • how to recognise and draw cubic and reciprocal graphs	
Assessments		At the end of each unit, pupils will complete a written assessment designed to evaluate their understanding of the key concepts, methods and problem-solving skills covered throughout the unit. These assessments provide an opportunity for pupils to demonstrate their mathematical thinking, fluency and application of knowledge in a range of contexts.	
3		This term is dedicated to revision and consolidation activities for Year 11 pupils in preparation for the GCSE Maths examination.	
Assessment			