



Thomas Mills
High School & Sixth Form

CURRICULUM OVERVIEW: Mathematics

At Thomas Mills, our Key Stage 3 Mathematics curriculum is designed to build strong foundations in mathematical knowledge, understanding, and skills, ensuring that every student is well-prepared for the challenges of Key Stage 4 and beyond. We aim to nurture confident, curious and resilient learners who see mathematics as an essential tool for understanding and interpreting the world around them.

Our intent is for all KS3 pupils to:

- **Secure fluency** in core mathematical concepts through regular practice and varied application, enabling them to recall and use knowledge accurately and efficiently.
- **Develop mathematical reasoning** by exploring patterns, making conjectures and using precise language to explain and justify their thinking.
- **Apply their skills to problem-solving** in a range of contexts, encouraging resilience, creativity and the ability to break down complex problems into manageable steps.

The KS3 curriculum is carefully sequenced to progressively deepen understanding, close knowledge gaps, and build connections across different areas of mathematics. It provides opportunities for all learners to experience success, regardless of their starting point, through appropriately challenging and engaging activities.

We are committed to promoting a positive attitude towards mathematics by:

- Demonstrating its relevance in everyday life and future careers.
- Providing enrichment opportunities and encouraging mathematical curiosity.
- Supporting pupils to develop the confidence to tackle unfamiliar problems with perseverance.

By the end of Key Stage 3, our pupils will have the secure knowledge, skills and self-belief needed to approach GCSE Mathematics with confidence, ambition and a genuine appreciation for the subject.

Year 7

Term	Topic	Knowledge and Skills	Useful Links
1	Positive Integers	Knowledge and Skills: Pupils will learn to: • Recognise the place value of an integer • Round a number to the nearest 10, 100 and 1000.	MyMaths DrFrost Maths



	Negative Integers	• Add, subtract, multiply and divide two positive integers. • Relate addition and subtraction. • Relate multiplication and division. • Understand the meaning of square, cube, square root and cube root. • Apply the order of operations in calculations • Identify multiples and factors of a number. • Recognise the use of negative numbers in the real world. • Represent numbers on a number line. • Identify integers and perform the four operations on them.	Place Value, Integers, Ordering and Rounding STEM Place Value, Maths Games for 7-11 Years - Topmarks mathsframe.co.uk/en/resources/category/5/partitioning-and-place-value
	Introduction to Algebra	• Use letters to represent numbers. • Interpret simple algebraic notations. • Substitute integers into simple expressions and formulae. • Write simple expressions and formulae. • Simplify expressions by collecting like terms. • Add and subtract linear expressions.	MyMaths Dr Frost Maths Positive and negative numbers - KS3 Maths - BBC Bitesize
	Simple Equations	• Understand the concept of equations and balancing. • Solve simple equations in one variable.	MyMaths Dr Frost Maths Algebra - GCSE Maths - BBC Bitesize



		Write simple equations in one variable to solve 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	Fractions	Knowledge and Skills: Pupils will learn to: - Use fraction notation and express one quantity as a fraction of another. - Convert between improper fractions and mixed numbers. - Identify equivalent fractions, simplify fractions and compare fractions. - Find the reciprocal of a number. - Perform the four operations on fractions and on mixed numbers. - Calculate fractions of quantities. - Apply fractions in practical situations. - Identify fractions as rational numbers.	MyMaths Dr Frost Maths Fractions - KS3 Maths - BBC Bitesize Comparing and Ordering Fractions Math Fun Worksheets
	Decimals	- Interpret decimals and write decimals in order of size - Round decimals to the nearest integer - Use the four operations with decimals - Convert between units of measure	MyMaths Dr Frost Maths Decimals - KS3 Maths - BBC Bitesize Arithmetic procedures with integers and decimals KS3 Y7 Maths Lesson Resources Oak National Academy



	Percentages	• Convert between decimals and fractions • Identify recurring decimals and real numbers • Define percentage as 'number of parts per hundred' • Interpret a percentage as a fraction or a decimal • Convert a fraction or a decimal to a percentage • Compare two quantities using percentages • Express one quantity as a percentage of another • Find a percentage of a quantity using multiplication • Reduce or increase a quantity by a percentage	MyMaths Dr Frost Maths Understanding multiplicative relationships: percentages and proportionality KS3 Y8 Maths Lesson Resources Oak National Academy Percentages - KS3 Maths - BBC Bitesize
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	Angles, Parallel Lines and Triangles	Knowledge and Skills: Pupils will learn to: • Identify different types of angles	MyMaths Dr Frost Maths Angles - KS3 Maths - BBC Bitesize Intersecting and parallel lines - KS3 Maths - BBC Bitesize





	Volume and Surface Area of Cuboids, including Cubes Collecting, Organising and Displaying Data	• Solve problems involving perimeters and areas of composite plane figures formed by rectangles, squares, triangles and circles • Draw nets of cuboids, including cubes • Calculate the surface area of cuboids, including cubes • Calculate the volume of cuboids, including cubes • Solve problems involving volume and surface area of cuboids, including cubes • Recognise different methods of collecting data • Organise data • Create frequency tables • Construct, analyse and interpret pictograms, vertical line charts, bar charts and compound bar charts	Volume of cubes and cuboids - KS3 Maths - BBC Bitesize Surface area of cubes and cuboids - KS3 Maths - BBC Bitesize Perimeter, Area, Volume - KS3 Maths - BBC Bitesize Finding the Surface Area of Cubes and Cuboids Oak National Academy
Assessment	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.		