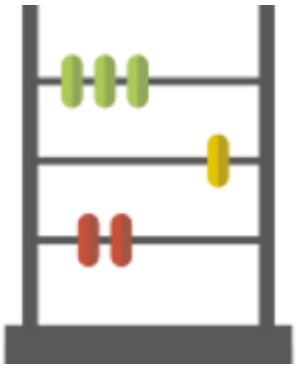
AIM AND PURPOSE

At TTA we believe our students' learning journey through Maths is vital for four main reasons:

1) Introducing the fundamental concepts on which modern life, and further Maths education, are built.
2) Giving pupils deep conceptual understanding.
3) Training pupils to think strategically.
4) Training pupils to be resilient.

HOW DOES THE CURRICULUM INDUCT STUDENTS INTO THE DISCIPLINE OF THE SUBJECT?

Thinking like a Mathematician involves using knowledge you know to solve problems you don't know. We train our pupils to be able to do this, first, by ensuring they have deep conceptual understanding so that they are more able to apply their knowledge to new situations. Secondly, we explicitly teach pupils to put their pens down and think, before answering questions; we model what strategic thinking looks like – 'Can I answer the question straight away? If not, what other information do I need? Where can I get that information? What else do I need?' etc. Finally, we constantly give pupils challenging questions in order to put them in the 'struggle zone', in order to build their resilience. Combining these three components facilitates real mathematical thinking.



The Totteridge Academy
The best in everyone™
Part of United Learning

Subject: Mathematics
Year: 7

OVERVIEW

In Mathematics we strive to develop our students into skilled strategic problem solvers who are Maths literate and fluent in mathematical procedures. We believe in setting a high level of challenge, while sequencing the curriculum so that students keep practising topics they have learnt before. In Year 7 students first develop a firm foundation in Number and then apply this to learning core concepts in Algebra, Geometry and Statistics.

Term	Focus	Assessment
Aut 1	• Place value and number sense • Addition and Subtraction • Perimeter • Rounding & Estimation (in real life situations)	Topic tests throughout the term.
Aut 2	• Multiplication and Division • Factors and Multiples • Area of rectangles and triangles and parallelograms	Topic tests throughout the term.
Spr 1	• Fractions as part of a whole • Fractions as a value • Fractions as an operation	A 1 hour assessment on all topics learnt this year.
Spr 2	• Order of operations • Basic rules of algebra • Expand and factorise • Substitution	Topic tests throughout the term.
Sum 1	• Angles • Polygons • Coordinates • Symmetry and reflection	Topic tests throughout the term.
Sum 2	• Mean • Two way tables & Venn diagrams	Two papers, 1 hour each, on all topics learnt this year.

Home Learning:
- Weekly Sparx homework. This should take approximately 1 hour to complete.

Useful resources:
- www.sparxmaths.com
- www.ttrockstars.com

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Subject: Mathematics
Year: 8

OVERVIEW

In Mathematics we strive to develop our students into skilled strategic problem solvers who are Maths literate and fluent in mathematical procedures. We believe in setting a high level of challenge, while sequencing the curriculum so that students keep practising topics they have learnt before. In Year 8 students will deepen their understanding of Algebra by learning to solve linear equations for the first time. They will also develop their understanding of Ratio and Proportional reasoning by learning TTA's 'Box Method'.

Term	Focus	Assessment
Aut 1	• Powers and Roots • Prime Factorisation • Rounding • Fractions • Negative numbers revision	Topic tests throughout the term.
Aut 2	• Linear equations • Coordinates and basic graphs	Topic tests throughout the term.
Spr 1	• Units of measurement • Angles • Circumference	A 1 hour assessment on all topics learnt this year.
Spr 2	• Proportional reasoning • Fractions, decimals and percentages • Ratio	Topic tests throughout the term.
Sum 1	• Area of composite shapes • Volume • Presenting and interpreting data	Topic tests throughout the term.
Sum 2	• Averages • 3-D visualisation	Two papers, 1 hour each, on all topics learnt this year.

Home Learning:

- Weekly Sparx homework. This should take approximately 1 hour to complete.

Useful resources:

- www.sparxmaths.com
- www.ttrockstars.com

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Subject: Mathematics
Year: 9

OVERVIEW

In Mathematics we strive to develop our students into skilled strategic problem solvers who are Maths literate and fluent in mathematical procedures. We believe in setting a high level of challenge, while sequencing the curriculum so that students keep practising topics they have learnt before. In Year 9 students consolidate their fluency in Number and Algebra so that they can access higher level Proportional reasoning, Geometry, Probability and Statistics.

Term	Focus	Assessment
Aut 1	• Decimal manipulation • Estimation & Limits of Accuracy • Related Calculations • HCF and LCM of large numbers • Fraction Calculations	Topic tests throughout the term.
Aut 2	• Algebraic Manipulation • Index Laws • Expanding and Factorising • *Further expanding and Factorising (higher attaining classes only)* • Expressions and Substitution	Topic tests throughout the term.
Spr 1	• Percentages with calculators • Ratio (basic) • Proportion • Probability	A 1 hour assessment on all topics learnt this year.
Spr 2	• Linear Equations • *Linear Simultaneous Equations (higher attaining classes only)* • Linear Inequalities • Sequences • Pythagoras *+ Right angled Trigonometry (higher attaining classes only)*	Topic tests throughout the term.
Sum 1	• Interior and Exterior Angles • Parallel lines • Basic Vectors • Basic Transformations	Topic tests throughout the term.
Sum 2	• Plans and Elevations • Circles • *Circle Theorems (higher attaining classes only)* • Surface Area	Two papers, 1 hour each, on all topics learnt this year.

Home Learning:
- Weekly Sparx homework. This should take approximately 1 hour to complete.

Useful resources:
- www.sparxmaths.com
- www.ttrockstars.com

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Subject: Mathematics
Year: 10

OVERVIEW

In Mathematics we strive to develop our students into skilled strategic problem solvers who are Maths literate and fluent in mathematical procedures. We believe in setting a high level of challenge, while sequencing the curriculum so that students keep practising topics they have learnt before. From the first half term of Year 10, students follow the curriculum for either Higher or Foundation for the AQA Specification. Students are introduced to visual representations of Algebra (graphs), and study more advanced topics within Number, Algebra and Statistics.

Term	Focus	Assessment
Aut 1	• Rearrange formulae • Linear Graphs • y = mx + c • Further Expanding and Factorising	Topic tests throughout the term.
Aut 2	• Quadratic graphs, turning points and roots • *Solving Quadratics & Further Simultaneous equations (Higher only)* • *Quadratic inequalities (Higher only)* • *Further graphs (Higher only)* • Compound Measures	Topic tests throughout the term.
Spr 1	• Linear Simultaneous Equations • Ratio (further) • Probability	A 90 minute assessment on all topics learnt this year.

Spr 2	• Foundation: Standard Form, Growth & Decay, Simple Interest
	• Higher only:
	  ◦ *Surds*
	  ◦ *Bounds*
	  ◦ *Recurring Decimals*
		Topic tests throughout the term.

Sum 1	• Statistics including ◦ Types of Data, Representing Data, Analysing Data • *Higher only: Standard Form, Algebraic proportionality, Growth & Decay*	Topic tests throughout the term.

Sum 2	• Foundation: Revision
	• Higher:
	  ◦ Similar shapes
	  ◦ Quadratic Sequences
		Two papers, 90 minutes each, on all topics learnt this year.

Home Learning:
- Weekly Sparx homework. This should take approximately 1 hour to complete.

Useful resources:
- www.sparxmaths.com
- www.corbettmaths.com

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Subject: Mathematics
Year: 11

OVERVIEW

In Mathematics we strive to develop our students into skilled strategic problems solvers who are Maths literate and fluent in mathematical procedures. In Year 11 each class follows a tailored curriculum, prioritising the topics that will be most beneficial for developing their mathematical knowledge and allowing them to approach a range of different problems with confidence. The aim is to cover all topics by the end of Spring Term to leave plenty of time for revision and preparation for exams.

Term	Focus	Assessment

Aut 1	• Foundation: Pythagoras, Right angled Trigonometry, Bearings & Scale Drawings
	• Higher: Algebraic proof
	  • Functions
	  • Iteration
		Full Non Calculator exam, 90 minutes.

Aut 2	• Foundation: Transformations, Congruence
	• Higher:
	  • Bearings
	  • Circle theorems
	  • Further Trigonometry & Trigonometric graphs
		Three exams, 90 minutes each.
		1 Non calculator
		2 Calculator
		3 Calculator

Spr 1	• Foundation: Vectors, Similar Shapes, Constructions & Loci • Higher: Statistics (Further), Transformations of graphs, Congruence, Vectors	Full Calculator exam, 90 minutes.
Spr 2	• Foundation: Revision • Higher: Constructions & Loci, Gradients (Further) and area under a graph, Regions	Three exams, 90 minutes each. 1 Non calculator 2 Calculator 3 Calculator

Sum 1	• Revision and GCSE Examinations
	  • Topic master classes
	  • Exam practice
	  • Maths Booster days	

Sum 2	• Revision and GCSE Examinations
	  • Topic master classes
	  • Exam practice
	  • Maths Booster days	

Home Learning:
- Weekly Sparx homework. This should take approximately 1 hour to complete.

Useful resources:
- www.sparxmaths.com
- www.corbettmaths.com