ARETÉ LEARNING TRUST
Being the best we can be

Stokesley School & Sixth Form College
Being the best we can be

Year 10 Mathematics

In Years 10 and 11, students will further develop their problem solving and deeper reasoning skills in order to build confidence in exam and revision techniques following the two-year GCSE scheme of learning. Teachers will use AFL thoroughly with students in order to foster confident individual learners and to target bespoke support. Students will complete 32 sequenced learning blocks which are thoughtfully sequenced to ensure the students can build upon prior knowledge and link concepts. Year 10 covers Blocks 1 -21 of the GCSE content.
Retrieval practice is embedded into lessons. This is usually seen in Brain in Gears at the start of all lessons and may include recall questions from previous lessons or a recap of prior learning. Retrieval practice includes interleaved questions from previous topics, making connections between topics where possible.

Year 10 Curriculum	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Topic(s)	**Block 1: Basic Number** - Types of numbers - Ordering Numbers - Four operations with number - BIDMAS - HCF and LCM - Prime factor decomposition - Simplifying surds - Expanding brackets with surds - Rationalising denominators **Block 2: Indices** - Squares, cubes and roots. - Estimating roots - Index notation - Simplifying algebraic products and quotients - Rules of indices - Negative and fractional indices - Solving problems with index laws	**Block 5: Angles** - Name, measure and estimate angles - Know and use basic angle facts - Recognise parallel and perpendicular lines and use their properties - Find the interior and exterior angles in polygons **Block 6: Factorising** - Factorise into single brackets - Difference of two squares - Solve quadratic equations by factorising - Know the quadratic formula and use it - Completing the square	**Block 10: Expressions and Substitution** - Substitute numbers into expressions - Formulate algebraic expressions **Block 11: Sequences** - Continue a linear sequence and find its rule - Linear nth term - Fibonacci sequences - Quadratic nth term - Recognise a geometric progression **Block 12: Decimals and Fractions** - Convert between fractions and decimals	**Block 15: Transformations** - Describe and perform: rotations, reflections, enlargements and translations. - Perform enlargements with fractional and negative scale factors **Block 16: Circles** - Circle nomenclature - Find the area and circumference of a circle - Find the surface area and volume of spheres and cones - Find the area and arc length of sectors - Find the area of a segment - Know and use the circle theorems	**Block 18: Ratio** - Share an amount in a two- or three-part ratio - Solve ratio problems - Algebraic ratio problems **Block 19: Bounds** - Error interval notation - Upper and lower bounds **Block 20: Probability 1** - Probability scale - Relative frequency - Frequency trees - Sample space diagrams **Block 21: Standard Form** - Write a number in standard form	**Revision and Review of Year 10 content**

	Block 3: Basic Algebra - Know the definitions of expression, equation, formulae, inequality, term and factor. - Collecting 'like' terms - Expanding single and double brackets - Simplifying algebraic expressions using index laws - Completing the Square - Algebraic proof **Block 4: Perimeter, Area and Volume** - Calculate the area and perimeter of rectilinear shapes. - Find the area of a triangle - Name and know the properties of 2D and 3D shapes - Find the area of compound shapes - Use and convert standard units of measurement for length, area, volume/capacity, mass, time and money - Calculate the area of a trapezium	- Factorise quadratics where a>1 into double brackets **Block 7: Fractions** - Equivalent fractions - Four operations with fractions including mixed numbers - Fractions of amounts - Simplify and manipulate algebraic fractions - Four operations with algebraic fractions **Block 8: Pythagoras** - Know and use Pythagoras' Theorem in 2D - Apply Pythagoras' Theorem in 3D problems **Block 9: Equations and Inequalities** - Use function machines - Solve linear equations - Solve linear inequalities - Solve equations with algebraic fractions	- Four operations with decimals - Rounding to decimal places and significant figures - Estimating calculations - Recurring decimals - Prove algebraically that a recurring decimal is a given fraction **Block 13: Percentages** - Convert between fractions, decimals and percentages - Percentages of amounts - Order fractions, decimals and percentages - Find percentage change - Simple and compound interest - Know and use percentage multipliers - Depreciation and exponential growth problems **Block 14: Graphs** - Work with coordinates in all four quadrants - Plot linear functions using a table of values	- Prove the circle theorems - Equation of a circle **Block 17: Tables, Charts and Graphs** - Frequency tables - Bar charts - Pictograms - Two-way tables - Pie charts - Frequency polygons - Cumulative frequency graphs - Histograms	- Four operations with standard form - Order numbers in standard form - Problem solving with standard form - Use a calculator with standard form	

	- Calculate the surface area and volume of cuboids and other right prisms - Calculate the surface area and volume of a pyramid - Know and apply the formula for area of any triangle: area =½ absinC	- Solve quadratic inequalities	- y=mx+c - Horizontal and vertical lines - Parallel and perpendicular lines - Reciprocal and cubic graphs - Recognise the turning point of a quadratic - Plot an exponential graph from a table of values - Linear inequalities on a number line and on graph - Sketch quadratic graphs by completing the square			
Assessment	**Assessment 1** covers all the content listed above. The assessment will be completed in the lesson and lasts 1 hour. Students and parents will receive information from the class teacher to confirm the exact date of the assessment. Students are expected to revise for the assessment to showcase their	**Assessment 2** covers all the content listed above. The assessment now contains a "Review and Recall" section which places emphasis on retrieval practice from work covered since the beginning of the year. Questions may also link mathematical concepts that have been taught previously.	**Assessment 3** covers all the content listed above. The assessment still contains a "Review and Recall" section which places emphasis on retrieval practice from work covered since the beginning of the year. Questions may also link mathematical concepts that have been taught previously.	**Assessment 4** covers all the content listed above. The assessment still contains a "Review and Recall" section which places emphasis on retrieval practice from work covered since the beginning of the year. Questions may also link mathematical concepts that have been taught previously.	**Assessment 5** covers all the content listed above. The assessment still contains a "Review and Recall" section which places emphasis on retrieval practice from work covered since the beginning of the year. Questions may also link mathematical concepts that have been taught previously.	**End of Year Examinations** cover all topics across the year. The examinations are sat in the Main Hall. There is a non-calculator and a calculator paper. Students are expected to revise thoroughly for these examinations to highlight their progress across the year. Their results also inform any set movements as we progress into the

	abilities such that intervention work can take place afterwards if needed.	Students are expected to revise for the assessment to showcase their abilities such that intervention or challenge work can take place afterwards.	Students are expected to revise for the assessment to showcase their abilities such that intervention or challenge work can take place afterwards.	Students are expected to revise for the assessment to showcase their abilities such that intervention or challenge work can take place afterwards.	Students are expected to revise for the assessment to showcase their abilities such that intervention or challenge work can take place afterwards.	next academic year.

Independent Work
At the end of each block of work, students will receive an “Independent Block Review Sheet” which must be completed fully and handed in to the teacher. The sheet contains key questions and work from key concepts from the block of learning they have just completed. Each question has attached a HegartyMaths video clip number to support full completion of the sheet. These sheets make excellent starting points for revision when an assessment is approaching. These can be found in students’ books to aid sequential learning. Students are also encouraged to complete the HegartyMaths quizzes. Additionally, students should be spending an hour a week minimum practicing questions, making revision notes/cards and reviewing their notes.