Curriculum Map Year 10: Mathematics AQA

Final GCSE Assessment	Marks
Written examination (Paper 1) Non-calculator	80
Written examination (Paper 2)	80
Written examination (Paper 3)	80

	Topic	Key Knowledge *What will students know by the end of this topic?*	Key Skills *What skills will students have developed by the end of this topic?*	Assessment Opportunities *How will student progress be measured?* *What are the key assessment pieces?*
Half Term 1	Indices Surds Recap of Straight-line graphs	Students will learn: • Calculations with indices • Surds, how to manipulate, simplify and calculate with surds • Straight line graphs, the equation of a line	Students will be able to: • Calculate with roots, integer indices, and factional indices • Understand surds, simplify and calculate with surds and rationalise the denominator • Use y = mx +c to draw lines and identify parallel and perpendicular lines • Find the equation of a line given two points or one point and the gradient	Topic Reviews Assessment each half term Weekly Sparx maths homework
Half Term 2	Linear Inequalities Solving Quadratics	• How to solve linear inequalities in one variable • Solve quadratic equations using different methods	• Simplify and solve inequalities • Represent inequalities graphically including shading relevant regions • Solve quadratics using factorisation, completing the square, quadratic formula and graphically	Topic Reviews Assessment each half term Weekly Sparx maths homework
Half Term 3	Simultaneous equations Quadratic sequences Algebraic Identities	• How to solve two simultaneous equations algebraically including one linear/quadratic • How to approximate solutions from a graph • Linear and quadratic sequences – solving and representation	• Set up and solve simultaneous equations by elimination or substitution including when one is quadratic. • Generate sequences from the term-to-term rule and nth term • Recognise and use different types of sequences • Find nth term of linear and quadratic sequences	Topic Reviews Assessment each half term Weekly Sparx maths homework

	Topic	**Key Knowledge** *What will students know by the end of this topic?*	**Key Skills** *What skills will students have developed by the end of this topic?*	**Assessment Opportunities** *How will student progress be measured?* *What are the key assessment pieces?*
Half Term 4	Trigonometry – exact values Further Trigonometry	• Trigonometry using exact values • Further trigonometrical rules and how to apply them to non-right-angled triangles	• Know and use the trigonometric ratios with right angled triangles and recall exact trig values • Further trigonometrical rules and how to apply them to non-right-angled triangles • Use the sine and cosine rules to solve 2D and 3 D problems. • Calculate the area of a triangle using trigonometry	Topic Reviews Assessment each half term Weekly Sparx maths homework
Half Term 5	Functions Probability Further Probability	• Functions and understand composite and inverse functions • Probability calculations, relative frequency • Probability including tree diagrams	• Understand functions, substitute into functions, work out inverse and composite functions • Calculate basic probabilities and relative frequencies including AND and OR rules • Draw tree diagrams and use them to solve probability problems	Topic Reviews Assessment each half term Weekly Sparx maths homework
Half Term 6	Statistics Circles Volume and SA	• How to represent data using histograms, cumulative frequency graphs, scatter graphs and box plots • How to interpret and analyse data from these diagrams • How to calculate the upper quartile, lower quartile, interquartile range • How to calculate arc length, angles and areas of sectors of circles • How to calculate volumes of 3 D shapes	• Draw and interpret histograms, scatter graphs, cumulative frequency graphs and box plots • Compare data using median, upper quartile, lower quartile and interquartile range • Calculate arc length and sector area of sectors of circles • Calculate and solve problems involving the volume of cylinders, prisms, cones and pyramids	Topic Reviews Assessment each half term Weekly Sparx maths homework

Curriculum Map Year 11: Mathematics AQA

Final GCSE Assessment	Marks
Written examination (Paper 1) Non-calculator	80
Written examination (Paper 2)	80
Written examination (Paper 3)	80

	Topic	Key Knowledge *What will students know by the end of this topic?*	Key Skills *What skills will students have developed by the end of this topic?*	Assessment Opportunities *How will student progress be measured?* *What are the key assessment pieces?*
Half Term 1	Circle Theorems Algebraic fractions Other graphs, Quadratic, cubic, exponential, reciprocal, trig Quadratic inequalities	• Apply and use circle theorems • How to simplify and manipulate algebraic expressions involving algebraic fractions • How to recognise, sketch and interpret non-linear graphs • How to solve quadratic inequalities in one variable	• Apply and prove the standard circle theorems concerning angles, radii, tangents and chords • Simply by factorising or cancelling algebraic fractions • Interpret and sketch quadratic graphs by looking at turning points and roots and completing the square • Sketch and recognise trigonometrical, cubic, exponential and reciprocal graphs • Set up and solve quadratic inequalities	Topic Reviews Assessment each half term Weekly Sparx maths homework
Half Term 2	Equation of circle Proportion Vectors Similarity and Congruency	• The equation of a circle with centre at the origin • The equation of a circle with centre at the origin • Direct and Indirect proportion relationships • Vector notation and geometric proof • How to apply the concepts of congruence and similarity, including the relationships between lengths, areas and volumes of similar shapes	• Recognise and use the equation of a circle, centre (0, 0) and radius, r. • Work out coordinates of points of intersection of a circle and straight line Understand and use direct and indirect proportion both in unitary form and in the form y = kx or y = k/x. • Relate proportion to graphical interpretation	Mock examinations

	Topic	**Key Knowledge** *What will students know by the end of this topic?*	**Key Skills** *What skills will students have developed by the end of this topic?*	**Assessment Opportunities** *How will student progress be measured?* *What are the key assessment pieces?*
	Graph work Gradients and rates of change Area under a curve, line graph	• Interpret the gradients of graphs • Interpret the area under a graph	• Understand and use vector notation to find the sum, difference, or multiples of vectors • Recognise when vectors are parallel or colinear • Recognise congruent shapes and use the conditions for congruency • Recognise similar shapes and solve problems involving area and volume of similar shapes • Interpret the gradient of a graph as the rate of change of the variable on the vertical axis compared to the horizontal axis • Understand that the rate of change at a particular instant is the gradient of the tangent	
Half Term 3	Proof Compound units and measures Growth and decay Transforming Graphs Loci and construction	• Use algebra to construct and support arguments • Use compound units, such as speed, density and pressure • Set up, solve and interpret growth and decay problems • Recognise different transformations and combinations of them • Translations and reflections of a given function	• Show that two expressions are equivalent • Construct rigorous proofs to validate a given result • Understand and use compound measures. • Calculate problems involving speed, distance, time. • Recognise and use translations, rotations, reflections and enlargements and any combination of them • Transform a graph f(x), including f(x) +a, f(x + b), -f(x) and f(-x) • Recognise transformations of functions • Find approximate solutions to equations using iteration	Weekly past papers Topic Reviews Assessment each half term Weekly Sparx maths homework

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Half Term 4	Loci and construction Numerical Methods	• Use iterations • Standard ruler and compass constructions • Solve problems involving growth and decay, including compound interest, using multipliers and the iterative process	• Use the standard ruler and compass constructions to construct perpendicular bisectors, triangles, bisect angles and lines • Construct and solve loci problems	Weekly past papers Topic Reviews Assessment each half term Weekly Sparx maths homework Final Mock Examinations in Class
Half Term 5	Revision			Weekly past papers
Half Term 6				