

	Term	Topic	Learning Outcomes	Assessment
GCSE Higher	Y10 Autumn 1	Unit 1: Arithmetic	• Arithmetic ○ Solve problems using the order of operations to add, subtract, multiply and divide with positive and negative integers, fractions and decimals. ○ Use one calculation to find the answer to another. • Equivalent FDP ○ Change recurring decimals to fractions.	Topic review at the end of each unit. Units 1-8 assessed in the Autumn Term. Content from Y7-9 could also be assessed.
		Unit 2: Algebra 1	• Algebraic Manipulation ○ Substitute into expressions, formulae and function notation. ○ Simplify expressions by adding, subtracting, multiplying and dividing terms whilst applying indices rules. ○ Expand single brackets and simplify the expression ○ Factorise an expression into a single bracket. ○ Expand double brackets. ○ Factorise expressions into double brackets. ○ Factorise quadratics with an x^2 term $\neq 1$	
		Unit 3: Ratio	• Multiplicative Relationships ○ Solve problems in context involving ratio and proportion. ○ Combine two ratios in context. ○ Use direct and inverse proportion to calculate missing values. ○ Understand and sketch the features of graphs in direct and inverse proportion.	
		Unit 4: Number Properties & Approximation	• Prime Factors ○ Write a number as the product of its prime factors in index form. ○ Use prime factor decomposition and Venn diagrams to find the LCM and HCF of two numbers. • Rounding & Estimation ○ Round numbers to an appropriate degree of accuracy. ○ Estimate answers by rounding to 1 s.f. ○ Calculate maximum and minimum possible values. ○ Use inequality notation to show error intervals.	

Y10 Autumn 2

Unit 5: Area

• Applying the Formulae

- Know and apply the formulae to calculate the perimeter and area of triangles, parallelograms, trapezia and circles including compound shapes.
- Know and apply the formulae to calculate the circumference and area of a parts of a circle.
- Calculate the arc length of any sector.
- Calculate the angle or radius of any sector given the arc length.
- Calculate the area of any sector.
- Calculate the angle or radius of any sector given the area.

Unit 6: Graphs 1

• Linear Graphs

- Draw linear graphs from their equation using an xy table.
- Sketch linear graphs using their gradient and y-intercept.
- Find the equation of a linear graph by calculating the gradient and y-intercept.
- Re-arrange an equation into the form $y = mx + c$.
- Compare two linear graphs from their equations.
- Plot graphs with equations $ax + by = c$.
- Find the equation of a line given its gradient and one point on the line.
- Find the equation of a line through two points.
- Use the form $y = mx + c$ to identify parallel or perpendicular lines.
- Find the equation of a parallel line through a given point.
- Find the equation of a perpendicular line through a given point.

• Quadratic Graphs

- Draw quadratic graphs from an xy table.
- Identify roots, intercepts and turning points of quadratic functions graphically.

• Solving Equations Graphically

- Find approximate solutions to a linear equation using a graph.
- Find approximate solutions to a quadratic equation using a graph.
- Find approximate solutions to two linear simultaneous equations using a graph.
- Find approximate solutions to one linear and one quadratic simultaneous equation using a graph.

	Term	Topic	Learning Outcomes	Assessment
Y10 Autumn 2		Unit 7: Percentages	• Applying Multipliers ○ Solve problems involving decimal multipliers for calculating a percentage of an amount, a percentage increase/decrease, a percentage profit/loss, a reverse percentage, a repeated percentage change and by using a decimal multiplier. ○ Solve simple and compound interest problems. ○ Solve and interpret growth and decay problems including from their graphs.	
		Unit 8: Shape	• Shape Properties ○ Identify line and rotational symmetry of 2D and 3D shapes. ○ Identify and sketch nets of 3D shapes. ○ Understand and draw plans and elevations. ○ Sketch 3D shape based on their plans and elevations. • Congruency ○ Know the conditions for congruency. ○ Prove shapes are congruent. • Constructions ○ Construct triangles accurately. ○ Construct the perpendicular bisector of a line. ○ Construct the shortest distance from a point to a line. ○ Bisect an angle. ○ Construct 90-, 45-, 60- and 30-degree angles. ○ Use loci to solve problems.	
Autumn Term Assessment				

Y10 Spring 1	Unit 9: Indices & Standard Form	• Indices Rules ○ Estimate powers and roots of any positive number. ○ Calculate with roots with integer, negative or fractional indices. ○ Apply the laws of indices to simplify calculations. • Standard Form ○ Interpret and calculate with numbers in standard form.	Topic review at the end of each unit. Units 1-14 assessed in the Spring Term. Content from Y7-9 could also be assessed.
	Unit 10: Algebra 2	• Sequences ○ Recognise and continue sequences of triangular, square and cube numbers. ○ Recognise and continue sequences of arithmetic progressions, Fibonacci type, quadratic and simple geometric progressions. ○ Generate terms of a linear or quadratic sequence from the nth term rule. ○ Calculate the nth term rule of a linear or quadratic sequence. ○ Generate terms of a quadratic sequence from the nth term rule. ○ Calculate the nth term rule of a quadratic sequence. • Function Notation ○ Substitute simple expressions as the input of a function and simplify. ○ Interpret a composite function. • Algebraic Manipulation ○ Expand triple brackets.	
	Unit 11: Angle	• Applying Angle Rules ○ Apply angle facts to solve geometrical problems. ○ Form and solve linear equations using angle facts. ○ Calculate interior and exterior angles of regular and irregular polygons. • Bearings ○ Interpret and use bearings to draw and measure journeys. ○ Fix a position using bearings. ○ Use parallel lines facts to calculate forward and back bearings.	

	Term	Topic	Learning Outcomes	Assessment
Y10 Spring 2		Unit 12: Equations 1	• Solving Linear Equations ○ Form and solve linear equations with positive and negative unknowns and brackets on both sides. ○ Solve linear equations involving fractions with a numerical denominator, fractions with an algebraic denominator. ○ Solve linear equations written in function notation. ○ Form and solve linear simultaneous equations algebraically. • Solving Linear Inequalities ○ Solve linear inequalities in one variable. • Solving Quadratic Equations ○ Solve quadratic equations by factorising including those that need re-arranging.	
		Unit 13: Surd	• Manipulating Surds ○ Simplify a single surd. ○ Add, subtract, multiply and divide with surds. ○ Expand single and double brackets with surds. ○ Rationalise a denominator.	
		Unit 14: Trigonometry 1	• Applying Pythagoras' Theorem & Trigonometry ○ Apply Pythagoras' Theorem to find lengths in 2D and 3D shapes. ○ Apply SOH CAH TOA to calculate missing lengths and angles in 2D and 3D shapes. ○ Deduce and apply the exact values for $\sin \theta$, $\cos \theta$ and $\tan \theta$ for 0, 30, 45, 60 and 90 degrees.	
	Spring Term Assessment			

Y10 Summer 1	Unit 15: Measures	• Applying Conversions ○ Convert between metric units of measure including area & volume. ○ Convert between standard metric and imperial units of measure. ○ Calculate with upper and lower bounds and error intervals for rounded values. ○ Convert between units of speed, density and pressure in numerical and algebraic contexts. ○ Convert between rates of pay and prices in numerical and algebraic contexts.	Topic review at the end of each unit. Units 1-20 assessed in the Y10 Mocks. Content from Y7-9 could also be assessed.
	Unit 16: Real Life Graphs	• Interpreting & Drawing ○ Calculate a speed from a distance-time graph. ○ Interpret and construct distance-time graph by: ▪ relating speeds to gradients of these graphs. ▪ relating accelerations to changes in these speeds. ○ Interpret linear speed-time graphs. ○ Calculate acceleration from a linear speed-time graph. ○ Construct a linear speed-time graph from acceleration. ○ Draw a distance-time and an acceleration-time graph from a speed-time graph. ○ Draw and interpret other real life graphs including reciprocal and exponential. • Gradient & Formulae ○ State what the gradient of each graph represents. ○ Write a formula to represent real-life graphs in context. • Non-Linear Graphs ○ Calculate an average rate of change (chord to curve) from a non-linear travel graph. ○ Calculate an instantaneous rate of change (tangent to curve) from a non-linear travel graph. ○ Calculate an estimate for the distance travelled from a linear and non-linear speed-time graph (area under curve).	
	Unit 17: Algebra 3	• Algebraic Manipulation ○ Re-arrange equations and formulae. ○ Factorise quadratics in the form $ax^2 + bx + c$ where $a > 1$ ○ Write quadratics in completed square form. ○ Simplify algebraic fractions. ○ Add, subtract, multiply and divide algebraic fractions. ○ Equate co-efficients in an identity. • Function Notation ○ Interpret an inverse function. • Proof ○ Construct an algebraic proof.	

Y10 Summer 2

Unit 18: Probability

- **Probability & Expected Outcomes**

- Calculate a basic probability and expected outcomes from lists, two-way tables, sample space diagrams and frequency trees.
- Estimate probabilities using relative frequency.
- Identify the differences between theoretical probability and relative frequency.
- Apply the product rule for counting for combinations.
- Understand and use the AND and OR rules.
- Complete and use tree diagrams to calculate probabilities using conditional probability.
- Identify regions using set notation.
- Complete and use venn diagrams by calculating probability from set notation.

Unit 19: Graphs 2

- **Types of Graphs**

- Recognise the shape of different types of graphs and identify key features
- Plot quadratic, cubic, reciprocal and exponential graphs using a table of values
- Calculate roots (by solving the quadratics), intercepts and turning points (by completing the square) of quadratic functions
- Sketch a quadratic graph showing the roots, intercept and turning point
- Distinguish between growth and decay from the equation of the graph.
- Recognise and sketch the graphs of $y = \sin x$, $y = \cos x$ and $y = \tan x$ for values of x from -360° to 360° and identify key features.
- Identify regions when multiple linear inequalities are given
- Solve quadratic inequalities.

- **Circle Graphs**

- Recognise the equation of a circle with centre at the origin is $x^2 + y^2 = r^2$ and identify the radius and centre.
- Sketch circle graphs with a compass showing where they meet the axes.
- Form the equation of a tangent at a given point on a circle.

	Term	Topic	Learning Outcomes	Assessment
	Y10 Summer 2	Unit 20: Transformations	• Reflect, Rotate, Translate & Enlarge ○ Draw a shape after a combined transformation then describe it as a single transformation. ○ Recognise invariant points in different transformations. ○ Enlarge a shape with a fractional and negative scale factors. • Similarity ○ Define similar triangles as triangles with the same shape but different sizes. ○ Recognise and apply the conditions for similarity (equal angles and proportional sides). ○ Use similarity to find missing side lengths. ○ Distinguish between congruence and similarity. ○ Solve problems using congruent or similar triangles in geometry, proofs, and coordinate problems. ○ Calculate the lengths, surface areas and volumes of similar solids using ratios and scale factors.	
	Y10 Mock Exam			

	Term	Topic	Learning Outcomes	Assessment
GCSE Higher	Y11 Autumn 1	Unit 21: Circle Theorems	• Understand and Apply Circle Theorems ○ Justify solutions with correct mathematical reasoning. ○ Demonstrate a clear proof for each circle theorem. ▪ The angle at the centre of a circle is twice the angle at the circumference subtended by the same arc. ▪ Angles in the same segment are equal ▪ The angle in a semicircle is a right angle ▪ Opposite angles of a cyclic quadrilateral sum to 180° ▪ The tangent to a circle is perpendicular to the radius at the point of contact. ▪ Tangents drawn from the same external point are equal in length. ▪ Alternate segment theorem (angle between tangent and chord equals the angle in the alternate segment).	Topic review at the end of each unit. All units assessed in the Y11 Autumn Mocks.
		Unit 22: Statistics	• Sampling ○ Identify and use different sampling methods: simple random, stratified, capture-recapture. • Charts & Graphs ○ Draw and interpret charts and graphs: bar charts, pie charts, frequency polygons, time series. ○ Compare datasets and draw conclusions in context by calculating the mean, median, mode, range, quartiles and interquartile range from data sets. ○ Draw, compare and interpret scatter diagrams, box plots, cumulative frequency graphs and histograms.	
		Unit 23: Trigonometry 2	• Sine, Cosine and Area of a Triangle Rules ○ Apply the Sine and Cosine Rules to find missing side lengths and angles in non-right-angled triangles. ○ Calculate the area of triangles using $\frac{1}{2}ab\sin C$. • Interpreting Trigonometric Graphs ○ Use the sine, cosine and tangent graphs to solve equations. ○ Find all possible angles (x) in the specified range, including those greater than 90°, for a given trigonometric value.	

	Term	Topic	Learning Outcomes	Assessment
Y11 Autumn 2		Unit 24: 3D	• Applying Formulae for Surface Area & Volume ○ Calculate missing lengths in prisms and cylinders when the surface area is given ○ Apply the formulae for the surface area and volume of cones, pyramids and spheres including frustums ○ Calculate lengths in prisms and cylinders when the volume is given. ○ Calculate surface area of prisms and cylinders when the volume is given and vice versa. • Similar Solids ○ Solve proportional relationships between matching lengths (such as radii, heights or slant heights) to find the scale factor between the solids.	
		Unit 25: Transforming Graphs	• Transformations ○ Describe & sketch the following transformations of graphs including trigonometric graphs and those in the form $y = f(x)$: ▪ Translations in the x and y directions ▪ Reflections in the x-axis and y-axis ▪ Stretches parallel to the x-axis and y-axis ○ Recognise and describe how a quadratic graph has been transformed from its completed square form or turning point. ○ State the line of symmetry of a quadratic graph from its completed square form.	
		Unit 26: Equations 2	• Solving Quadratic Equations ○ Solve quadratic equations by completing the square. ○ Solve quadratics equations using the quadratic formula. • Iteration ○ Show that the equation has a solution that lies between two values. ○ Generate a sequence using an iterative formula, given a starting value. ○ Calculate approximate solutions using iteration to equations to a required degree of accuracy. ○ Rearrange a given equation into an iterative formula. • Simultaneous Equations ○ Solve a pair of simultaneous equations when one is quadratic using substitution and interpret solutions in context. • Solve Quadratic Inequalities ○ Solve quadratic inequalities by finding the roots of the quadratic, sketching the graph and writing the solution in inequality notation.	
Y11 Autumn Mock Exam				

	Term	Topic	Learning Outcomes	Assessment
Y11 Spring 1		Unit 27: Graphs & Proportion	• Direct and Inverse Proportion using k ○ Write the proportional relationship for direct and inverse proportion. ○ Calculate the constant of proportionality (k). ○ Form equations for direct and inverse proportion using (k). ○ Use the equation to solve problems involving direct and inverse proportion. ○ Form equations and solve problems using direct and inverse proportion involving x^2 x^3 $\sqrt{x}$ $\sqrt[3]{x}$ ○ Form a single equation connecting two equations that have been written using direct and/or inverse proportion. • Graphs of Proportional Relationships ○ Recognise and describe the graphical features of direct and inverse proportion. ○ Use these graphs to estimate values and solve problems in context.	Topic review at the end of each unit. All units assessed in the Y11 Spring Mocks.
		Unit 28: Vectors	• Vector Notation ○ Understand what a vector is and know the difference between vectors and scalars. ○ Represent vectors in diagrammatic and column form. ○ Represent parallel vectors. • Vector Arithmetic ○ Add, subtract, and multiply vectors by a scalar in diagrammatic and column form. ○ Represent parallel vectors. • Vector Geometry ○ Interpret problems involving vectors, including geometric situations (e.g. parallelograms and midpoints). ○ Prove geometric properties using vectors.	
Y11 Spring Mock Exam				

	Term	Topic	Learning Outcomes	Assessment
	Y11 Spring 2 & Summer 1	Revision	Revision tasks preparing for the GCSE Exams.	Weekly past papers and revision tasks.
	GCSE Exam Dates Edexcel GCSE Maths Paper 1 (Non-Calculator) - 14th May 2026 Edexcel GCSE Maths Paper 2 (Calculator) - 3rd June 2026 Edexcel GCSE Maths Paper 3 (Calculator) - 10th June 2026			