January 2026

Maths Department – Curriculum Intent

Overview of KS3 Curriculum - Maths			
Head of Department: Mrs G Kelly			
	Year 7	**Year 8**	**Year 9**
Autumn Term	**1. Analysing and Displaying Data** Finding the mean, median and mode. Displaying data using graphs and tables. **2. Number skills** Order of operations. All four operations. Money and time. Negative numbers. Factors, multiples and primes. Product of prime factors. **3. Expressions, functions and formulae** Functions. Simplifying expressions. Writing expressions. Substituting into formulae. Writing formulae. Solve one and two step equations. Function notation. Factorising single brackets. Expanding double brackets. **4. Decimals and measures** Decimals and rounding. Length, mass and capacity. Scales and measures. Working with decimals mentally. Perimeter. Area. Units of measure. **Career Links:** Data Analyst, Statistician, Sports Performance Analyst, Engineering, Architect.	**1. Number** Calculations. Divisibility and division. Calculating with negative numbers. Powers and roots. Brackets. Multiples and factors. Surds **2. Area and Volume** Area of a triangle. Area of a parallelogram and trapezium. Volume of cubes and cuboids. 2D representations of 3D solids. Surface area of cubes and cuboids. Measures. Area and circumference of circles. **3. Statistics, graphs and charts** Pie charts. Using tables. Stem and Leaf diagrams. Comparing data. Scatter graphs. Misleading graphs. Cumulative frequency and box plots. **4. Expressions and equations** Algebraic powers. Expressions and brackets. Factorising expressions including quadratics. Writing expressions. Substituting into formulae. Writing formulae. One and two step equations. Inequalities. **Career Links:** Data Analyst, Statistician, Sports Performance Analyst, Accounting and Finance, Engineering.	**2. Expressions and formulae** Factorising expressions. Solving equations. Substituting into expressions. Writing and using formulae. Using and rearranging formulae. Index laws and brackets. Expanding double brackets. Factorise quadratics with first coefficient 1. **4. Multiplicative reasoning** Enlargement. Negative and fractional scale factors. Percentage change. Compound measures. Direct and inverse proportion. **5. Constructions** Using scales. Basic constructions Constructing triangles. Using accurate scale diagrams. **6. Sequences, inequalities, equations and proportion** The nth term of arithmetic sequences. Non-linear sequences. Inequalities. Solving equations. Proportion. Simultaneous equations. **Career Links:** Data Analyst, Statistician, Meteorologist, Accounting and Finance, Engineering.

January 2026

Maths Department – Curriculum Intent

Spring Term	**5. Fractions and percentages** Comparing fractions. Simplifying fractions. Working with fractions. Fractions and decimals. Understanding percentages. Percentages of amounts. **6. Probability** The language of probability. Calculating probability. Experimental probability. Expected outcomes.	**9. Straight-line graphs** Gradients. Equations of straight lines. Parallel lines. **6. Decimals and ratio** Ordering decimals. Rounding. Calculations with decimals. Ratio and proportion with decimals. **7. Lines and angles** Quadrilateral. Angles in parallel lines. Exterior and Interior Angles. Solving geometric problems **8. Calculating with fractions** Ordering fractions. Adding, subtracting, multiplying, dividing fractions. Mixed numbers.	**7. Circles, Pythagoras and prisms** 2D representations of 3D solids. Circumference of a circle. Area of a circle. Pythagoras' theorem. Prisms and cylinders. Errors and bounds. Arcs and Sectors. **8. Graphs** Curved graphs. Equations of straight lines. Using y = mx+c. Simultaneous equations. Graphs of quadratic functions. Non-linear graphs. **9. Probability** Mutually exclusive events. Experimental and theoretical. Sample space diagrams. Two-way tables. Venn diagrams. 10 Comparing Shapes Congruent and similar shapes. Ratios in triangles. Sine, cosine and tangent ratios. Trigonometry including graphs.
Spring Term	**7. Ratio and proportion** Direct proportion. Writing ratios. Using ratios. Ratios, proportion and fractions. Proportion and percentage. **8. Lines and angles** Measuring and drawing angles. Lines, angles and triangles. Drawing triangles accurately. Calculating angles. Angles in Triangles. Quadrilaterals. Angles in parallel lines. Bearings. **Career Links:** Travel agent, Tax inspector, Investment banker, Solicitor, Mortgage broker.	**5. Real life graphs** Conversion Graphs. Distance-Time Graphs. Line Graphs. More Line Graphs. Reali-life Graphs. Curved Graphs. **10. Percentages, decimals and fractions** Fractions and decimals. Writing percentages. Percentages of amounts. Compound Interest. **1. Indices and standard form** Indices. Calculations and estimates. Standard form. Surds. **Career Links:** Research scientist, Engineer, Architect, Tradesperson.	**1. Number** Number problems. Place value and estimating. HCF and LCM. Indes including negative and fractional. Standard form. Surds. **3. Interpreting and representing data.** Time series. Scatter graphs. Line of best fit. Averages and range. **4. Fractions, ratio and percentages.** Fractions. Ratio. Ratio and proportion. Fractions, decimals and percentages. **Career Links:** Architect, Structural engineer, Tradesperson, Computer programmer.

January 2026

Maths Department – Curriculum Intent

Summer Term	**9. Sequences and graphs** Sequences. Pattern sequences. Coordinates and midpoints. Extending sequences. Straight-line graphs. Position-to-term rules. Gradients. **10. Transformations** Congruency and enlargements. Symmetry. Reflection. Rotation. Translations and combined transformations. **Career Links:** Architect, Structural engineer, Tradesperson, Health analyst.	**5. Real-life graphs** Conversion graphs. Distance-time graphs. Line graphs. Real-life graphs. Curved graphs. **10. Percentages, decimals and fractions** Understanding percentages. Percentages of amounts. Fractions and decimals. Equivalent proportions. Writing percentages. Percentage increases and decreases. Repeated percentage change. **Career Links:** Computer programmer, Sports analyst, Accountant, investment banker.	**10. Comparing shapes** Exterior and interior angles. Solving geometric problems. Congruent and similar shapes. Ratios in triangles. The Tan, Sine and Cosine ratios. Using trigonometry to find angles. **Y10** **1. Number** Number problems. Estimating. HCF and LCM. Calculating with powers. Zero, negative and fractional indices. Standard form. Intro to surds. **3. Interpreting and representing data** Statistical diagrams 1. Time series. Scatter graphs. Line of best fit. Averages and range. Statistical diagrams 2. **4. Fractions, ratio and percentages** Fractions. Ratio and proportion. Percentages. Fractions, decimals and percentages. **Career Links:** Astronomy, Engineering, Stockbroker, Investment banker, financial analyst, bookmaker, Pilot.

January 2026

Maths Department – Curriculum Intent

Overview of KS4 Curriculum		
	Exam Board: Edexcel **Subject:** GCSE Maths	
	Year 10	**Year 11**
Autumn Term	**GCSE** **2. Algebra** Algebraic indices. Expanding and factorising. Equations. Formulae. Linear sequences. Non-linear sequences. Further expanding and factorising. **5. Angles and trigonometry** Angle properties of triangles and quadrilaterals. Interior angles of a polygon. Exterior angles of a polygon. Pythagoras' theorem. Trigonometry. **6. Graphs** Linear graphs. Graphing rates of change. Real-life graphs. Line segments. Quadratic graphs. Cubic and reciprocal graphs. Interpreting graphs. **7. Area and volume** Perimeter and area. Units of accuracy. Prisms. Circles. Sectors. Cylinders and spheres. Pyramids and cones. **Career Links:** Data Analyst, Sports Performance Analyst, Accounting and Finance.	**14. Further Statistics** Sampling. Cumulative frequency. Box plots. Drawing histograms. Interpreting histograms. Comparing and describing populations. **15. Equations and graphs** Solving simultaneous equations graphically. Representing inequalities graphically. Graphs of quadratic functions. Solving quadratic equations graphically. Iteration. Graphs of cubic functions. **17. Further algebra** Rearranging formulae. Simplifying algebraic fractions. Algebraic fraction calculations. Further surds. Functions. Proof. **Career Links:** Data Analyst, Sports Performance Analyst, Architect, Engineer.
Spring Term	**8. Transformations and constructions** 3D solids. Reflections and rotations. Enlargement. Translations and combined transformations. Bearings and scale drawings. Constructions. Loci. **9. Equations and inequalities** Solving quadratic equations. Completing the square. Simultaneous equations. Linear inequalities. **10. Probability** Combined events. Mutually exclusive events. Experimental probability. Independent events and tree diagrams. Conditional probability. Venn diagrams and set notation. **11. Multiplicative reasoning** Growth and decay. Compound measures. Ratio and proportion. **Career Links:**	**16. Circle Theorems** Radii and chords. Tangents. Angles in circles. Applying circle theorems. **18. Vectors and geometric proof** Vector notation. Vector arithmetic. Parallel and collinear points. Solving geometric problems. **19. Proportion and graphs** Direct proportion. Inverse proportion. Exponential functions. Non-linear graphs. Translating graphs of functions. Reflecting and stretching graphs of functions. **Career Links:** Aerospace industry

Maths Department – Curriculum Intent

	Motor sports technician, Automotive engineer, Aerospace technician.	
Summer Term	**12. Similarity and congruence** Congruence. Geometric proof. Similarity in 2D and 3D shapes. **13. Further trigonometry** Accuracy. Graphs of the sine and cosine functions. The tangent function. Calculating areas and the sine rule. The cosine rule and bearings. 3D Pythagoras and trigonometry. Transformation of trigonometric graphs. Careers: Accounting and Finance, Economist, Bookmaker.	Delivery of course content will be dependent on students' areas of strengths and misconceptions. This will be determined by individual teacher assessment.

January 2026

Maths Department – Curriculum Intent

Overview of KS5 Curriculum				
Exam Board: Edexcel **Subject:** A Level Maths				
	Year 12		**Year 13**	
	Teacher A	**Teacher B**	**Teacher A**	**Teacher B**
Autumn Term	**Transition Task – Over the summer** Algebraic Expressions Quadratics Equations and Inequalities **In Lessons** Straight Line Graphs Graphs and Transformations Circles Algebraic Methods Binomial Expansion Y2 Binomial Expansion **Career Links:** Bookmaker, Stockbroker, Engineer, Analyst	Differentiation Integration Trigonometric Ratios Trigonometric Identities and Equations Vectors **Career Links:** Astronaut, Engineer, Software developer, Video game developer.	Trigonometry and Modelling Differentiation Integration **Career Links:** Aeronautical engineer, Architect, Data Analyst, Pilot.	Algebraic Methods Sequences and Series Functions and Graphs Parametric Equations **Career Links:** Astronaut, Engineer, Software developer, Physicist.
Spring Term	Exponentials and Logarithms Probability Y2 Conditional Probability Large Data Set Statistical Distributions **Career Links:** Medicine, Archaeology, Software developer.	Y2 Vectors Modelling Mechanics Constant Acceleration Forces and Motion Variable Acceleration **Career Links:** Engineer, Mechanic, Architect.	Regression, Correlation and Hypothesis Testing The Normal Distribution **Career Links:** Data analyst, Bookmaker, Performance analyst, Video game developer.	Numerical Methods Moments Applications of forces Further Kinematics **Career Links:** Robotics researcher, engineer.
Summer Term	Hypothesis Testing Data Collection Measures of Location and Spread Representing Data Correlation **Career Links:** Sports performance analyst, Meteorologist, Marketing.	Y2 Forces and Friction Y2 Projectiles Y2 Radians Y2 Trigonometric Functions **Career Links:** Engineer, Mechanic, Forecasting and data scientist.	Delivery of course content will be dependent on students' areas of strengths and misconceptions. This will be determined by individual teacher assessment.	Delivery of course content will be dependent on students' areas of strengths and misconceptions. This will be determined by individual teacher assessment.

January 2026

Maths Department – Curriculum Intent

Overview of KS5 Curriculum						
Exam Board: Edexcel **Subject:** Further Maths						
	Year 12			**Year 13**		
	Teacher A	**Teacher B**	**Teacher C**	**Teacher A**	**Teacher B**	**Teacher C**
Autumn Term	Radians Argand Diagrams Proof Discrete Random Variables Poisson Distribution **Career Links:** Computer programmer, Graphics artist.	Complex Numbers Roots of Polynomials Series Momentum and Impulse **Career Links:** Engineer, Physicist.	Matrices Linear Transformations **Career Links:** Signal processor, DNA scientists, Stock market trader.	Probability Generating Functions Central Limit Theorem Quality of Tests **Career Links:** Actuary, Risk manager, Architect.	Complex Numbers 1.5 - Elastic strings and springs Elastic Collisions in 2D **Career Links:** Bungee jump mechanic.	Series Hyperbolic Functions 6A-D Methods in Calculus **Career Links:** Engineer, Risk manager, Architect.
Spring Term	Geometric and Neg Binomial Distributions Hypothesis Testing Chi Squared **Career Links:** Woodworker, Computer graphics artist	Further Collisions Work Energy Power Year 2 Differentiation **Career Links:** Meteorologist, Data analyst, Rock climber.	Vectors **Career Links:** Scientist, Data analyst, Research geneticist.	Polar Co-ordinates Volumes of Revolution **Career Links:** Pilot, Sailor, Woodworker, Architect.	Differential Equations Modelling with Differential Equations **Career Links:** Vehicle safety tester, Sports performance analyst, engineer.	Hyperbolic Functions 6E - **Career Links:** Engineer, Mathematician.
Summer Term	Year 2 Normal Distribution **Career Links:** Engineer, Mathematician.	Y2 Series Methods of Difference Year 2 FM Complex Numbers **Career Links:** Electrical engineer.	Volumes of Revolution **Career Links:** Physicist, Rocket scientist.	Revision	Revision	

January 2026

Maths Department – Curriculum Intent

Curriculum Rationale:

Our Maths curriculum is designed with the needs of our highly able students in mind. From Years 7 to 11 our 5-year curriculum is built on a spiral model, which looks to build on prior knowledge of topics as students' progress through the school. Setting up the learning this way allows us regularly to assess students' prior knowledge before we extend them through the next phase of a particular topic. It also allows us to gradually build their knowledge and understanding over time, allowing them to grow in confidence but also in their levels of expertise.

At Years 7 to 9 all follow a curriculum designed by Edexcel and resourced and adapted to suit the needs of our students. At GCSE we follow the Edexcel specification with content largely determined by the exam board. Edexcel was chosen as we feel it is well-resourced in terms of exam preparation materials as well as high quality textbooks. A Level Maths and Further Maths also follow the Edexcel specification with content largely determined by the exam board. Edexcel was chosen as we feel it is well-resourced in terms of exam preparation materials as well as high quality textbooks. We utilise the schemes of work produced by Edexcel in order to ensure the learning have a developmental and sequential arc. By designing and curriculum that spans the whole of KS3 and KS4 we have ensured a high level of cohesion for our students and their learning. Using the same exam board specification across KS3-5 we are confident students are gaining the knowledge and experience with topics to be successful.

We begin each unit with a 'diagnostic test' to ascertain an accurate starting point, identify misconceptions and find gaps in students understanding. Once the unit content has been taught, we then complete a 'Check Up' booklet (at KS3/4) or a 'Pre-Test' at KS5 to review the learning. This gives us an opportunity to review the learning and understanding that has happened during the lessons in a more summative form. At KS3 and 4, students then complete a 'Unit Assessment' in test conditions. At KS5, student will either complete a 'Chapter Assessment', a 'mini test' or be tested on the chapter content later. At KS3 and 4, students will then complete a 'review sheet' to identify any gaps in their knowledge as well as corrections using a video 'walkthrough' of the assessment. They will then go away and complete a series of 'fixes' via the DFM platform to address this. At KS5, teachers will go through the assessments as this face-to-face interaction is more effective when the content is more complex.

Through review sheet and revision, we actively encourage our pupils to use DFM, which allows pupils to complete questions on their areas most needed for improvement and get immediate feedback. We also have a DFM leader board that we update each half-term to keep our students motivated through some healthy competition.

The system of curriculum delivery we use provided multiple opportunities to assess and address gaps in learning and we are confident that we can address the impact of the pandemic in a 'real-time' fashion as we teach the curriculum.