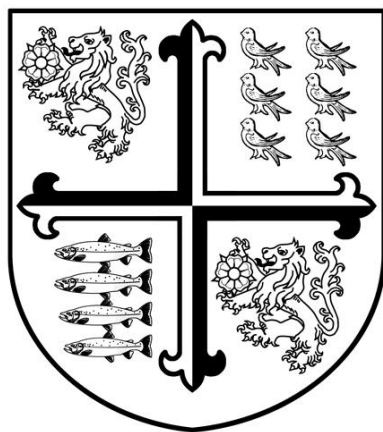




GCSE Mathematics Exam Preparation

Exam Board: Pearson Edexcel

Specification: 1MA1

Specification: Level 1/2 GCSE (9-1) in Mathematics

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Year 10 Mathematics: Units and Assessment Criteria

Unit and Duration	Criteria for Success	Assessment Information
Unit 9 – Equations and Inequalities 5 weeks <i>Solving more inequalities, quadratic graphs both analytically and graphically, and simultaneous equations</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to solve linear inequalities. - You will be able to show solutions to inequalities on a number line and in set notation. - You will know what the roots of an equation are. - You will be able to solve quadratic equations by factorising. - You will be able to solve quadratic equations using the quadratic formula. - You will be able to complete the square with a quadratic expression. - You will be able to solve quadratic equations by completing the square. - You will be able to solve a pair of linear simultaneous equations using elimination and substitution. - You will be able to solve a pair of simultaneous equations where one is non-linear using substitution. - You will be able to solve a pair of simultaneous equations graphically.	In-class test (~70% skills, ~30% problem solving): w/c 5th October - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Christmas
Unit 10 – Probability 4 weeks <i>Combined events, mutually exclusive events, independent and conditional probability, tree and Venn diagrams</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to represent combined events using two-way tables and sample spaces. - You will be able to use the product rule to find probabilities for combined events. - You will be able to identify and use mutually exclusive events and $P(A \cup B) = P(A) + P(B)$. - You will be able to use exhaustive outcomes. - You will be able to use $P(A') = 1 - P(A)$. - You will be able to use expected results for experimental and theoretical probabilities. - You will be able to draw a frequency or probability tree diagram for successive events. - You will be able to find the probability of independent events using $P(A \cap B) = P(A) \times P(B)$. - You will be able to use conditional probability. - You will be able to use set notation in Venn diagrams. - You will be able to find probabilities from Venn diagrams, including $P(A B)$.	In-class test (~70% skills, ~30% problem solving): w/c 9th November - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Christmas
Unit 11 – Multiplicative Reasoning 4 weeks <i>Percentages, ratio, proportion and compound measures</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to find an amount after a repeated percentage change. - You will be able to solve growth and decay problems. - You will be able to use iterative processes. - You will be able to work with compound measures, such as rates, speed, acceleration and pressure. - You will be able to convert between metric units. - You will be able to identify and use direct and inverse proportion. - You will be able to create formulae for quantities that are in direct and inverse proportion. - You will be able to recognise and draw graphs of quantities that are in proportion to each other.	In-class test (~70% skills, ~30% problem solving): w/c 7th December - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Easter

Unit and Duration	Criteria for Success	Assessment Information
Unit 12 – Similarity and Congruence 3 weeks <i>Similar and congruent shapes, proof, 1D–2D–3D shapes</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to identify congruent shapes from diagrams and through the use of angle laws, such as angles in parallel lines. - You will be able to prove congruence of triangles using SSS, SAS, AAS or RHS. - You will be able to use congruence in wider problems. - You will be able to identify and prove similar shapes. - You will be able to use ratio and scale factor in similar-shape problems. - You will be able to use the link between length, area and volume scale factors to solve problems involving similar 3D shapes.	In-class test (~70% skills, ~30% problem solving): w/c 11th January - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Easter
Unit 13 – More Trigonometry 5 weeks <i>Trigonometric graphs, simple equations, non-right-angled triangle trigonometry and graph transformations</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to use bounds in trigonometry to find the error interval of lengths and angles. - You will be able to draw the graphs of $y = \sin x$, $y = \cos x$ and $y = \tan x$. - You will be able to find key points on trigonometric graphs and know exact values for 0°, 30°, 45°, 60° and 90°. - You will be able to solve simple trigonometric equations, using graphs and identities to find all solutions within a range. - You will be able to find areas of non-right-angled triangles and segments. - You will be able to use, and identify when to use, the Sine Rule and Cosine Rule. - You will be able to solve bearing problems. - You will be able to solve 3D problems using 3D Pythagoras and trigonometry. - You will be able to transform trigonometric graphs.	In-class test (~70% skills, ~30% problem solving): w/c 22nd February - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Easter
Unit 14 – Further Statistics 4 weeks <i>Sampling strategies, cumulative frequency, box plots, histograms and comparing data</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will be able to use a random sample and know its advantages and disadvantages. - You will be able to use the three types of average and two ranges, and know the advantages and disadvantages of each. - You will be able to use the capture–recapture method. - You will be able to draw and interpret cumulative frequency tables and graphs, finding the median, quartiles and other data. - You will be able to find the median and quartiles from a stem-and-leaf diagram. - You will be able to draw and interpret box plots. - You will be able to compare two sets of data using a measure of average and a measure of spread. - You will be able to draw histograms. - You will be able to interpret histograms and estimate medians and proportions.	In-class test (~70% skills, ~30% problem solving): w/c 22nd March - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Summer
Revision and Mock Exams 2 weeks <i>Revision of content covered so far using past papers and targeted exam-question resources</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. - You will prepare for Paper 1 (non-calculator) and Paper 2 (calculator). - You will revise content covered so far. - You will use past papers and exam-question resources to target specific areas for improvement.	Mock examinations: w/c 19th April - Do Now and in-class monitoring - Homework – Dr Frost tasks - Reported: Summer

Unit and Duration	Criteria for Success	Assessment Information
Unit 15 – Equations and Graphs 5 weeks <i>Using graphs to solve equations and inequalities, finding turning points, sketching/drawing quadratics and cubics, and solving equations by iteration</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. • You will be able to solve simultaneous equations graphically. • You will be able to represent inequalities graphically as regions on graphs. • You will be able to interpret graphs of inequalities. • You will be able to represent solutions to inequalities using set notation. • You will be able to find roots, y-intercepts and turning points of quadratic graphs. • You will be able to sketch quadratic graphs. • You will be able to determine the number of roots of a quadratic equation. • You will be able to solve quadratic inequalities. • You will be able to expand cubic expressions. • You will be able to draw cubic equations, linking the factorised form to the roots of the cubic graph. • You will be able to use iteration to solve quadratic and cubic equations.	• In-class test (~70% skills, ~30% problem solving): w/c 7th June • Do Now and in-class monitoring • Homework – Dr Frost tasks • Reported: Summer
Unit 16 – Circle Theorems 4 weeks <i>Circle theorems, proofs and problem solving</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. • You will be able to solve problems involving radii and triangles within a circle. • You will be able to solve problems involving a chord and a radius. • You will be able to solve problems involving tangents to circles. • You will be able to solve problems involving angles subtended at the centre and circumference of circles. • You will be able to solve problems involving semicircles. • You will be able to solve problems involving cyclic quadrilaterals and alternate segments. • You will be able to apply all known circle theorems to problems. • You will be able to prove circle theorems using angle laws and reasoning.	• In-class test (~70% skills, ~30% problem solving): w/c 5th July • Do Now and in-class monitoring • Homework – Dr Frost tasks • Reported: Summer
Year 11 Preparatory Work <i>Algebraic manipulation refresher on indices, formulae, quadratics and fractions</i>	To achieve highly in this unit, you must be able to apply all skills to problem solving and GCSE-style questions. • You will refresh and consolidate algebraic manipulation involving indices, formulae, quadratics and fractions. • You will apply these skills to problem solving and GCSE-style questions.	• Do Now and in-class monitoring • Homework – Dr Frost tasks