**MATHEMATICS**

Overview:

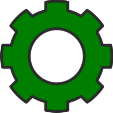
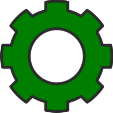
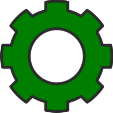
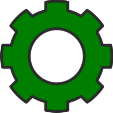
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| --- | --- | --- | --- | --- | --- |
| **Subject:** | Mathematics and Quantitative Reasoning | **Exam board:** | Edexcel | **Lessons per week:** | 5 per week at KS4 and KS5 |

KS4 Components:

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| --- | --- | --- | --- |
| **Unit 1** | **Unit 2** | **Unit 3** | **Unit 4** |
| Number | Algebra | Geometry | Handling Data |

KS4 Curriculum overview:

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| --- | --- | --- | --- | --- |
| **Term`** | **Year 10 Foundation** | **Year 10 Higher** | **Year 11 Foundation** | **Year 11 Higher** |
| 1 | Factors, multiples and primes | Indices and roots Algebra setting up and solving equations | Trigonometry – Sine, Cosine and Tangent ratios | Trigonometry – Sine and Cosine Rule  Area of a triangle |
| 2 | Ratio and proportion – writing ratios and the links with percentages | Ratio and proportion – scale models and currencies | Transformations of functions | Combinations of transformations. Similarity and  congruence |
| 3 | Equations and inequalities | Solving quadratic and simultaneous equations | Compound measures Vectors | Upper and Lower Bounds Vectors and geometric  Proof |
| 4 | Straight-Line graphs Probability | Linear graphs and  coordinate geometry Conditional Probability | Pie charts | Constructions, loci and bearings |
| 5 | Properties of shapes,  interior and exterior angles | Changing the subject of a formula | Examination Revision | Examination Revision |
| 6 | Pythagoras’ Theorem | Circle theorems Cumulative Frequency |  |  |



A level Components:

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| --- | --- |
| **Unit 1** | **Unit 2** |
| Pure Mathematics Application of number | Combined Mechanics and Statistics |

Quantitative Reasoning Components:

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| --- | --- |
| **Unit 1** | **Unit 2** |
| Introduction to Quantitative Reasoning | Critical Mathematics |

Curriculum overview:

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| --- | --- | --- | --- |
| **Term`** | **Year 12 Quantitative Reasoning** | **Year 12 A level** | **Year 13 A level** |
| 1 | Approximations and estimates  Statistics | Pure: Algebra and functions – cubic and reciprocals  Mechanics: force, velocity, speed, acceleration and weight and displacement; | Arithmetic and Geometric series |
| 2 | Financial Problem solving Using and interpreting  Exponentials and logarithms | Coordinate geometry in the (x, y) plane - circles Further Algebra – factor theorem  Mechanic: Motion in a straight line under constant acceleration | Trigonometry – small angle formulae Trigonometric identities |
| 3 | Measures and scaling | Pure: Trigonometry – identities and equations Statistics: Understand and use sampling techniques | Exponential functions and logarithms |
| 4 | Probability and Risk | Pure: Differentiation  Statistics: Calculation and interpretation of measures of location | Numerical methods |
| 5 | Representing the real world mathematically | Pure: Integration  Statistics: Probability and Hypothesis testing | Examination preparation |
| 6 |  | Sequences and series |  |