**HIGHER: Key Stage 4 Maths Curriculum**

**Long term plan Year 11 2024-2025**

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| **Autumn 1** |  |
| **Chapter 19: Pythagoras, Trigonometry and Vectors** | **Chapter 20 Combined Events** |
| **Assessment:** Chapter A Test | **Assessment**: Chapter A Test |
| **Builds Upon:**   * Apply Pythagoras' theorem to find long sides * Apply Pythagoras' theorem to find short sides | **Builds Upon:**   * Arrange sets into Venn diagrams * Describe sets using Venn diagrams (intersection, union and complement) * Construct possibility (sample) space diagrams  Calculate probabilities from sample space diagrams * Use tree diagrams to show the frequency or probabilities of two events * Use tree diagrams to calculate the probabilities of independent and dependent events |
| **Introduces:**   * Apply Pythagoras’ theorem to find distance between two points * Apply trigonometric ratios (sin/cos/tan) to find missing sides in right angle triangles * Apply trigonometric ratios (sin/cos/tan) to find missing angles in right angle triangles * Know the exact values of sinØ and cosØ for Ø= 0, 30,45,60,90 degrees * Know the exact value of tan Ø for Ø= 0,30,45,60 degrees * Apply the sine rule to find missing lengths and angles * Apply the cosine rule to find missing lengths and sides * Apply sine formula for the area of non right angle triangles * Solve 3D Pythagoras’ theorem and trigonometry problems * Write column vectors and draw vector diagrams * Add and subtract vectors * Calculate multiples of vectors using a scalar * Use vectors in geometric proofs | **Introduces:**   * Use Venn diagrams to record outcomes and calculate probabilities of events * Calculate estimated outcomes using probabilities |

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| **Autumn 2** |  |
| **PPES** | **Chapter 21: Sequences** |
| **Assessment** 2x 90 minute PPES | **Assessment** Chapter A Test |
|  | **Builds Upon:**   * Write sequence using term to term rule * Write sequences using position to term rule (nth rule) * Write the position to term rule (nth rule) for a linear sequence * Recognise special types of sequence (square, cube, triangular, arithmetic, geometric, Fibonacci and quadratic) * Find terms of quadratic sequence using term to term or position to term rule * Write the position to term rule (nth rule) for a quadratic sequence |
|  | **Introduces:**   * Applications to problem solving |

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| **Spring 1** |  |
| **Chapter 22: Units and Proportionality** | **Chapter 18: Graphs 2 (started)** |
| **Assessment:** Chapter A Test | **Assessment:** |
| **Builds Upon:**   * Calculations using standard and compound units (speed, density and pressure) * Compare lengths, areas, and volumes of similar shapes * Solve direct proportion problems * Interpret the gradient of a straight line graph as a rate of change * Solve inverse proportion problems | **Builds Upon:**   * Graphing linear and quadratics equations * Sketching translations (including reflections, transformations etc.) |
| **Introduces:**   * Interpret graphs that illustrate direct and inverse proportion * Set up, solve and interpret growth and decay problems | **Introduces:**   * Recognise and plot graphs of cubic functions * Recognise and plot graphs of reciprocal functions * Recognise and sketch graphs of exponential functions * Recognise and sketch trigonometric functions * To recognise and sketch translation and reflections of graphs * Draw and interpret non-standard graphs of real-life situations * Gradients and areas under graphs * Equation of a circle * Find the tangent to a circle at a point |

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| **Spring 2** | | |
| **PPES** | **Chapter 18: Graphs 2 (continued)** | **23: Algebraic Proofs** |
| **Assessment** 2x 90minute PPES | **Assessment:** Chapter Test A | **Assessment** Chapter Test A |
| **Builds Upon:**  Content in0formed by QLAs and teacher planned | **Builds Upon:**   * Graphing linear and quadratics equations * Sketching translations (including reflections, transformations etc.) | **Builds Upon**   * Algebraic identities * Constructing mathematical arguments |
|  | **Introduces:**   * Recognise and plot graphs of cubic functions * Recognise and plot graphs of reciprocal functions * Recognise and sketch graphs of exponential functions * Recognise and sketch trigonometric functions * To recognise and sketch translation and reflections of graphs * Draw and interpret non-standard graphs of real-life situations * Gradients and areas under graphs * Equation of a circle * Find the tangent to a circle at a point | **Introduces**   * Counter examples * LHS/RHS proofs * Odd/Even proofs |

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| **Summer 1** |
| **GCSE EXAM REVISION** |
| **Assessment:**  **3 x 90 minute formal public exams** |
| **Builds Upon:**  Content informed by QLAs and teacher led |
| **Introduces:** |

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| **Summer 2** |
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