# Maths at The Hinckley School

| Curriculum Vision | Subject Intent |
|---|---|
| At The Hinckley School we believe that students deserve a creative and ambitious mathematics curriculum, rich in skills and knowledge, which ignites curiosity and prepares them well for everyday life and future employment. Our mathematics curriculum will give students the opportunity to:<br>• become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time.<br>• solve problems by applying their knowledge of mathematics.<br>• communicate, justify, argue and prove using mathematical vocabulary.<br>• develop their character, including resilience, confidence and independence, so that they contribute positively to the life of the school, the global, national and local community. | To successfully use mathematical skills to solve problems in their everyday lives. |

Key Stage 3

| Term | Year 7 | Year 8 | Year 9 | |
|---|---|---|---|---|
| | | | 'Getting GCSE ready' Foundation | 'Getting GCSE ready' Higher |
| Autumn 1<br>Autumn 2 | 7.1 - Number Skills<br>7.2 - Statistical Charts<br>7.3 - Expressions | 8.1 - Sequences & Linear Graphs<br>8.2 - Further Number Skills<br>8.3 - Averages | 9.1 (F) - Number Properties<br>9.2 (F) - Algebra Skills<br>9.3 (F) - Statistical Charts, Tables & Graphs | 9.1 (H) - Number Properties<br>9.2 (H) - Algebra Skills<br>9.3 (H) - Statistical Charts, Tables & Graphs |
| Spring 1<br>Spring 2 | 7.4 - Fractions, Decimals & Percentages<br>7.5 - Equations<br>7.6 - 2D Shapes | 8.4 - Angles & Triangles<br>8.5 - Equations & Inequalities | 9.4 (F) - Fractions, Decimals & Percentages<br>9.5 (F) - Equations and Inequalities | 9.4 (H) - Fractions, Ratio & Percentages<br>9.5 (H) - Angles, Pythagoras & Trigonometry |
| Summer 1<br>Summer 2 | 7.7 - Probability<br>7.8 - Transformations | 8.6 - 3D Shapes<br>8.7 - Ratio & Construction | 9.6 (F) - Angle Reasoning<br>9.7 (F) - Averages | 9.6 (H) - Straight Line Graphs<br>9.7 (H) - Non Linear Graphs |
| Endpoints | The maths curriculum in KS3 covers topics in Number, Algebra, Ratio & Proportion, Shape & Measure and Statistics & Probability. Each unit of work has fluency, application and problem solving embedded. This enables learners to build upon their knowledge throughout each year.<br>The curriculum is bespoke to the needs of the class. The sequencing of lessons is defined by the individual class teacher to suit the students' needs. | | | |

**Key Stage 4: Pearson Edexcel Level 1/Level 2 GCSE (9-1) Mathematics (1MA1)**

| Term | Year 10 | | Year 11 | |
|---|---|---|---|---|
| | Foundation | Higher | Foundation | Higher |
| Autumn 1<br>Autumn 2 | 10.1 (F) - Perimeter, Area and Volume<br>10.2 (F) - Linear Graphs<br>10.3 (F) - Transformations | 10.1 (H) - Area and Volume<br>10.2 (H) - Transformations & Constructions<br>10.3 (H) - Quadratics and Inequalities | 11.1 (F) - Quadratics<br>11.2 (F) - Circles<br>11.3 (F) - Fractions, Indices and Standard Form | 11.1 (H) - Further Graphs<br>11.2 (H) - Circles<br>11.3 (H) - Further Algebra and Surds |
| Spring 1<br>Spring 2 | 10.4 (F) - Ratio & Proportion<br>10.5 (F) - Right-angled Triangles<br>10.6 (F) - Probability | 10.4 (H) - Probability<br>10.5 (H) - Multiplicative Reasoning<br>10.6 (H) - Similarity & Congruence | 11.4 (F) - Congruence, Similarity and Vectors<br>11.5 (F) - Further Algebra Skills | 11.4 (H) - Vectors<br>11.5 (H) - Functions and Proportion |
| Summer 1<br>Summer 2 | 10.7 (F) - Multiplicative Reasoning<br>10.8 (F) - Constructions and Bearings | 10.7 (H) - Further Trigonometry<br>10.8 (H) - Further Statistics | Revision | Revision |
| Assessment Objectives & Learning Aims | The maths curriculum in KS4 covers topics in Number, Algebra, Ratio & Proportion, Shape & Measure and Statistics & Probability. Where teachers will have a key focus on the 3 assessment objectives.<br>• Use and apply standard techniques<br>• Reason, interpret and communicate mathematically<br>• Solve problems within mathematics and in other contexts<br><br>The curriculum is bespoke to the needs of the class. The sequencing of lessons is defined by the individual class teacher to suit the students' needs. | | | |

**Key Stage 5: AQA AS-Level Mathematics (7356) AQA A-Level Mathematics (7357)**

| Term | Year 12 | Year 13 |
|---|---|---|
| Autumn 1<br>Autumn 2 | Algebraic Manipulation<br>Graphs – Linear, Quadratics and Inequalities<br>Straight Lines & Circles<br>Differentiation<br>Binomial Expansion<br>Data Presentation and Interpretation<br>Statistical Sampling<br>Probability & Statistical distributions | Sequences and Series<br>Binomial Expansion<br>Further Differentiation<br>Further Integration<br>Trigonometry and Circular Measure<br>Functions & Transformations<br>Further Probability |
| Spring 1<br>Spring 2 | Hypothesis Testing<br>Integration<br>Vectors<br>Kinematics in One Dimension<br>Trigonometry | Further Statistical Distributions<br>Further Hypothesis Testing<br>Further Trigonometry<br>Parametric Equations<br>Partial fractions & Integration<br>Kinematics in Two Dimensions<br>Statics and Dynamics<br>Equilibrium & Resolving<br>Moments |
| Summer 1<br>Summer 2 | Forces & Newtons Laws<br>Exponentials and Logarithms<br>Proof<br>Revision | Differential Equations<br>Numerical Methods<br>Proof<br>Analysis of Data Packages<br>Revision |
| Assessment Objectives & Learning Aims | The Mathematics curriculum in KS5 covers topics in Pure (Algebra), Mechanics and Statistics where students are required to demonstrate the overarching knowledge and skills contained in the following three sections.<br>• Mathematical argument, language and proof<br>• Mathematical problem solving<br>• Mathematical modelling<br>These must be applied, along with associated mathematical thinking and understanding, across the whole of the detailed content set out in sections covered in Y12 and Y13. | |

**Key Stage 5: AQA AS-Level Further Mathematics (7366) AQA A-Level Further Mathematics (7367)**

| Term | Year 12 | Year 13 |
|---|---|---|
| Autumn 1<br>Autumn 2 | Complex Numbers<br>Matrices<br>Polar Coordinates<br>Vectors<br>Further Algebraic Functions – Polynomials<br>Further Algebraic Functions – Sequences & Series<br>Graphs (Discrete)<br>Networks (Discrete)<br>Network Flows (Discrete)<br>Critical Path Analysis (Discrete) | Vectors<br>Matrices<br>Complex Numbers<br>Polar Coordinates<br>Further Algebra & Functions<br>Further Calculus<br>Hyperbolic Functions<br>Numerical Methods |
| Spring 1<br>Spring 2 | Further Algebraic Functions – Graphs<br>Further Calculus<br>Linear Programming (Discrete)<br>Dimensional Analysis<br>Work, Energy & Power<br>Momentum & Collisions<br>Circular Motion | Differential Equations<br>Circular Motion<br>Work, Energy & Power<br>Centre of Mass & Moments<br>Momentum & Collisions<br>Group Theory (Discrete)<br>Linear Programming (Discrete) |
| Summer 1<br>Summer 2 | Hyperbolic Functions<br>Proof<br>Zero Sum Games (Discrete)<br>Binary Operations (Discrete)<br>Preparation for Year 13 | Further Network Flows (Discrete)<br>Zero Sum Games (Discrete)<br>Critical Path Analysis (Discrete)<br>Revision |
| Assessment Objectives & Learning Aims | The Further Mathematics curriculum in KS5 covers topics in Pure (Algebra), Mechanics and Discrete Mathematics. Further Mathematics is an extension of the A Level Mathematics course, extending and deepening knowledge.<br>Students are required to demonstrate the overarching knowledge and skills contained in the following three sections.<br>• Mathematical argument, language and proof<br>• Mathematical problem solving<br>• Mathematical modelling<br>These must be applied, along with associated mathematical thinking and understanding, across the whole of the detailed content set out in sections covered in Y12 and Y13. | |