A-Level Mathematics
Curriculum Overview

Students who secure a Grade 7+ are invited to opt into study of A-Level Mathematics in our Sixth Form. We follow the *Edexcel* specification, which splits the course as follows:

- **Pure Mathematics ($\frac{2}{3}$ of the course)**
- **Applied Mathematics: Statistics & Mechanics ($\frac{1}{3}$ of the course)**

Students are assessed in the form of three examinations sat at the end of Year 13, as follows:

- Paper 1: Pure Mathematics (2 hours – 100 marks)
- Paper 2: Pure Mathematics (2 hours – 100 marks)
- Paper 3: Statistics & Mechanics (2 hours – 100 marks)

At Holly Lodge Girls' College, students receive 5 hours of teaching a week for A-Level Maths (3 hours for Pure, 1 hour for Statistics, 1 hour for Mechanics), plus a compulsory 1 hour study session. This study session may take the form of a taught lesson, drop-in session, or study of dedicated topics, depending on the needs of the students at any given time.

Assessment is covered through the use of DIRT (directed improvement and reflection time), and formal assessment opportunities as outlined in the school calendar.

<table>
<tr><th colspan="4">YEAR 1</th></tr>
<tr><th></th><th>Pure (3 hrs per week)</th><th>Statistics (1 hr per week)</th><th>Mechanics (1 hr per week)</th></tr>
<tr><td>HT1</td><td>• Algebraic Expressions (AS)
• Quadratic Functions (AS)
• Equations & Inequalities (AS)
• Algebraic Methods (AS)</td><td>• Data Collection (AS)</td><td>• Modelling in Mechanics (AS)</td></tr>
<tr><td>HT2</td><td>• The Binomial Expansion (AS)
• Straight Line Graphs (AS)
• Circles (AS)
• Vectors (AS)</td><td>• Measures of Location and Spread (AS)</td><td>• Constant Acceleration (AS)</td></tr>
<tr><td rowspan="2">HT3</td><td>• Trigonometric Ratios (AS)
• Trigonometric Equations & Identities (AS)
• Graphs & Transformations (AS)</td><td>• Representations of Data (AS)</td><td rowspan="3">• Forces & Motion (AS)
• Variable Acceleration (AS)</td></tr>
<tr><td colspan="2">Year 12 Assessment Week (March) - 1 x Exam Paper</td></tr>
<tr><td>HT4</td><td>• Differentiation (AS)</td><td>• Correlation (AS)
• Probability (AS)</td></tr>
<tr><td>HT5</td><td>• Integration (AS)
• Exponentials & Logarithms (AS)</td><td>• Statistical Distributions (AS)</td><td></td></tr>
<tr><td rowspan="2">HT6</td><td>• Radians
• Trigonometric Functions</td><td>• Hypothesis Testing (AS)</td><td>• Moments</td></tr>
<tr><td colspan="3">Year 12 Assessment Week (June) – 1 x Pure Paper, 1 x Applied Paper</td></tr>
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AS – *content that also appears in AS-Level Mathematics*

YEAR 2			
	Pure (3 hrs per week)	**Statistics** (1 hr per week)	**Mechanics** (1 hr per week)
HT1	• Functions (including Algebraic Fractions) • Trigonometry & Modelling • Further Binomial Expansion	• Regression, Correlation & Hypothesis Testing	• Forces & Friction
HT2	• Further Vectors • Further Differentiation	• Conditional Probability	• Projectiles
	Year 13 Mock Examinations (December) – 1 x Pure Paper, 1 x Applied Paper		
HT3	• Parametric Equations • Further Integration • Differential Equations	• The Normal Distribution	• Applications of Forces
HT4	• Proof by Contradiction • Sequences & Series • Numerical Methods		• Further Kinematics
	Year 13 Assessment Week (March/April) – to be completed in lessons dependent on curriculum time		
HT5	• *Exam Revision*	• *Exam Revision*	• *Exam Revision*