

Shoreham Academy: Maths Department “7-year journey”

KS3:

	Autumn		Spring		Summer	
<b>Year 7</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>7.01 Numerical Skills (PK KS2 Y6 POS)</li> <li>7.06 Addition &amp; Subtraction (PK KS2 Y6 POS, 7.02)</li> <li>7.09 Multiplication &amp; Division (PK, KS2 Y6 POS, 7.02, 7.05)</li> <li>7.02 Order of Operations (KS2 Y6 POS)</li> </ul>	<b>HT2:</b> <ul style="list-style-type: none"> <li>7.08 Mean (PK KS2 Y6 POS, 7.02, 7.06, 7.09)</li> <li>7.07 Perimeter (PK KS2 Y6 POS, 7.06)</li> <li>7.10 Area of Triangles &amp; Quadrilaterals (PK KS2 Y6 POS, 7.09)</li> </ul>	<b>HT3:</b> <ul style="list-style-type: none"> <li>7.11 Fraction Manipulation (PK KS2 Y6 POS)</li> <li>7.12 Adding &amp; Subtracting Fractions (PK KS2 Y6 POS, 7.11)</li> <li>7.13 Comparing &amp; Ordering Fractions (PK KS2 Y6 POS, 7.11, 7.12)</li> <li>7.14 Fraction of an Amount (PK 7.09, 7.11)</li> </ul>	<b>HT4:</b> <ul style="list-style-type: none"> <li>7.15 Angles (PK KS2 Y6 POS)</li> <li>7.16 Polygons (PK KS2 Y6 POS, 7.06)</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>7.04 Prime, Factors and Multiples (PK KS2 Y4-6 POS)</li> <li>7.03 Introduction to Algebra (PK KS2 Y6 POS, 7.01, 7.02)</li> <li>7.05 Expanding &amp; Factorising 1 (PK KS2 Y6 POS, 7.01, 7.02)</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>7.17 Coordinates (PK KS2 Y6 POS)</li> <li>7.18 Time (PK KS2 Y6 POS)</li> </ul>
<b>Year 8</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>8.01 Powers and Roots (PK 7.01)</li> <li>8.02 Prime Factorisation (PK 7.04)</li> <li>8.03 Rounding (PK 7.01)</li> <li>8.04 Fractions (PK 7.11, 7.12)</li> </ul>	<b>HT2:</b> <ul style="list-style-type: none"> <li>8.05 Solving Equations 1 (PK 7.03, 7.06, 7.09)</li> <li>8.06 Coordinates and Basic Graphs (PK 7.17)</li> <li>8.07 Units of Measurement (PK 7.09)</li> </ul>	<b>HT3:</b> <ul style="list-style-type: none"> <li>8.08 Angles in parallel lines (PK 7.15)</li> <li>8.09 Circumference (PK 7.07)</li> <li>8.10 Direct Proportion (PK 7.09)</li> </ul>	<b>HT4:</b> <ul style="list-style-type: none"> <li>8.11 Fractions, Decimals and Percentages (PK 7.11, 7.12, 7.13, 7.14, 8.04)</li> <li>8.12 Percentage Calculations (PK 8.11)</li> <li>8.13 Ratio 1 (PK KS2 Y6 POS, 7.09, 8.11)</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>8.14 Area of Circles and Trapezia (PK 7.10, 8.09)</li> <li>8.15 Statistics 1 (Presenting and Interpreting Data) (PK 7.08)</li> <li>8.16 Averages and Spread (PK 7.08)</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>8.17 3D Visualisation (PK KS2 Y6 POS)</li> <li>8.18 Volume 1 (PK KS2 Y6 POS, 7.09)</li> </ul>
<b>Year 9</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>9.01 Decimal Manipulation (PK 7.02, 7.06, 7.09)</li> <li>9.02 Estimation and Limits of Accuracy (PK 8.03)</li> <li>9.03 Related Calculations (PK 7.02, 7.09)</li> <li>9.04 HCF &amp; LCM of Large Numbers (PK 7.04, 8.02)</li> <li>9.05 Fraction Calculations (PK 7.11, 7.12, 7.13, 7.14, 8.04)</li> </ul>	<b>HT2:</b> <ul style="list-style-type: none"> <li>9.06 Algebraic Manipulation (PK 7.03)</li> <li>9.07 Index Laws (PK 8.01, 9.04, 9.06)</li> <li>9.08 Standard Form (PK 7.06, 7.09, 9.01, 9.07)</li> <li>9.09 Expanding &amp; Factorising 2 (PK 8.05)</li> </ul>	<b>HT3:</b> <ul style="list-style-type: none"> <li>9.10 Forming Expressions &amp; Substitution (PK 7.03, 8.01)</li> <li>9.11 Direct &amp; Inverse Proportion (PK 7.09, 8.05, 8.10)</li> <li>9.12 Probability 1 (PK 9.01, 9.05)</li> </ul>	<b>HT4:</b> <ul style="list-style-type: none"> <li>9.13 Solving Equations 2 (PK 7.03, 8.05, 8.08, 9.05)</li> <li>9.14 Inequalities 1 (PK 7.01, 9.01, 9.13)</li> <li>9.15 Sequences (PK 9.13)</li> <li>9.16 Pythagoras' Theorem (PK 7.03, 7.17, 8.01, 8.03, 9.13)</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>9.17 Interior &amp; Exterior Angles (PK 7.16, 9.06)</li> <li>9.19 Vectors 1 (PK 7.06, 7.01)</li> <li>9.20 Transformations 1 (PK 8.06)</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>9.21 Plans &amp; Elevations (PK 8.17)</li> <li>9.22 Arcs &amp; Sectors (PK 8.09, 8.14)</li> <li>9.23 Surface Area (PK 8.17)</li> </ul>

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KS4: There are two pathways for KS4 in maths. Students will either go down a higher tier of entry route or a foundation tier of entry route for their GCSE.

<b>KS4 PATHWAY 2:</b>	<b>Autumn</b>		<b>Spring</b>		<b>Summer</b>	
<b>Year 10</b>	<b>HT1:</b>	<b>HT2:</b>	<b>HT3:</b>	<b>HT4:</b>	<b>HT5:</b>	<b>HT6:</b>
<b>FOUNDATION</b>	<ul style="list-style-type: none"> <li>• <b>F1</b> Solving Equations &amp; Rearranging Formulae (PK 9.13)</li> <li>• <b>F2</b> Linear Graphs (PK 8.06, 9.11, F1)</li> <li>• <b>F3</b> Linear Simultaneous Equations (PK 9.13, F1, F2)</li> <li>• <b>F4</b> Volume (PK 8.18)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>F5</b> Compound Measure (PK 9.11)</li> <li>• <b>F6</b> Quadratics – Graphical (PK 9.09)</li> <li>• <b>F7</b> Quadratics – Algebraic (PK 9.09)</li> <li>• <b>F8</b> Further Graphs (PK F2, F5)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>F9</b> Probability 2 (PK 9.12)</li> <li>• <b>F10</b> Statistics 2 (PK 8.15, 8.16)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>F10</b> Standard Form (2023/2024 only) (PK 7.06, 9.01, 9.07)</li> <li>• <b>F11</b> Ratio 2 (PK 8.13)</li> <li>• <b>F12</b> Growth &amp; Decay (PK 9.07)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>F13</b> Pythagoras Review (PK 9.13, F1)</li> <li>• <b>F14</b> Bearings &amp; Scale Drawings (PK 7.16, 9.18)</li> </ul>	<ul style="list-style-type: none"> <li>• Revision Programme</li> <li>• Y9/10 Review</li> </ul>
<b>Year 11</b>	<b>HT1:</b>	<b>HT2:</b>	<b>HT3:</b>	<b>HT4:</b>	<b>HT5:</b>	<b>HT6:</b>
<b>FOUNDATION</b>	<ul style="list-style-type: none"> <li>• <b>11.01</b> Pythagoras (PK 9.13)</li> <li>• <b>11.02</b> Right-Angled Trigonometry (PK 9.13, F1)</li> <li>• <b>11.03</b> Bearings &amp; Scale Drawings (PK 7.16, 9.18)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>11.04</b> Transformations (PK 9.20)</li> <li>• <b>11.05</b> Congruence (PK 7.15)</li> </ul>	<ul style="list-style-type: none"> <li>• <b>11.06</b> Vectors (PK 7.06, 7.01, 9.19)</li> <li>• <b>11.07</b> Similar Shapes (PK 9.20)</li> <li>• <b>11.08</b> Constructions &amp; Loci (PK F14, 8.07, 7.09)</li> </ul>	<ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>	<ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>	<ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>

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<b>KS4 PATHWAY 1:</b>	<b>Autumn</b>		<b>Spring</b>		<b>Summer</b>	
<b>Year 10  HIGHER</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• <b>H1</b> Rearranging Formulae (PK 9.13)</li> <li>• <b>H2</b> Linear Graphs (PK 8.06, 9.13, H1)</li> <li>• <b>H3</b> Linear Simultaneous Equations (PK 9.13, H1, H2)</li> <li>• <b>H4</b> Volume 2 (PK 8.18)</li> </ul>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• <b>H5</b> Compound Measures (PK 8.09, 9.10)</li> <li>• <b>H6</b> Quadratics – Graphical (PK 9.09)</li> <li>• <b>H7</b> Quadratics – Algebraic (PK 9.09)</li> <li>• <b>H8</b> Further Graphs (PK H2, H6)</li> </ul>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• <b>H9</b> Probability 2 (PK 9.12)</li> <li>• <b>H10</b> Statistics 2 (PK 8.15, 8.16)</li> <li>• <b>H11</b> Cumulative Frequency &amp; Box Plots (PK H10)</li> <li>• <b>H11</b> Standard Form (2023/2024 only) (PK 9.02, 9.07)</li> </ul>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• <b>H12</b> Growth &amp; Decay (PK 8.10)</li> <li>• <b>H13</b> Ratio 2 (PK 8.13)</li> <li>• <b>H14</b> Ratio 3 (PK H13)</li> <li>• <b>H15</b> Similar Shapes (PK 9.20)</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• <b>H16</b> Algebraic Proportion (PK 9.11)</li> <li>• <b>H17</b> Surds (PK 9.04)</li> <li>• <b>H18</b> Right Angled Trigonometry (PK 9.13, H1)</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• <b>H19</b> Bounds (PK 9.03)</li> <li>• <b>H20</b> Bearings &amp; Scale Drawings (PK 8.08, 8.17)</li> <li>• <b>H21</b> Transformations 2 (PK 9.20)</li> </ul>
<b>Year 11  HIGHER</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• <b>11.01</b> Algebraic Proof (PK 9.06, 9.09)</li> <li>• <b>11.02</b> Solving Quadratic &amp; Simultaneous Equations (PK H3, 9.09)</li> <li>• <b>11.03</b> Functions (PK 9.10, 9.13)</li> <li>• <b>11.04</b> Iteration (PK 9.10)</li> <li>• <b>11.05</b> Quadratic Inequalities (PK H6, H7, 9.14)</li> </ul>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• <b>11.06</b> Bearings (PK H20, 8.08, 8.17)</li> <li>• <b>11.07</b> Circle Theorems (PK 9.17, 8.08)</li> <li>• <b>11.08</b> Further Trigonometry &amp; Trigonometric Graphs (PK H8, H18, 9.13, 9.16)</li> </ul>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• <b>11.09</b> Statistics (Further) (PK H10, 8.15, 8.16)</li> <li>• <b>11.10</b> Transformations (PK 9.20)</li> <li>• <b>11.11</b> Congruence (PK 7.15)</li> <li>• <b>11.12</b> Vectors (PK 7.06, 7.01, 9.19)</li> </ul>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• <b>11.13</b> Gradients and Area under a Graph (PK H2, 7.10)</li> <li>• <b>11.14</b> Kinematics (PK H5)</li> <li>• <b>11.15</b> Graphical Transformations (PK 9.20, H21)</li> <li>• <b>11.16</b> Constructions &amp; Loci (PK H20, 8.07, 9.09)</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>

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<b>A level Maths:</b>	<b>Autumn</b>		<b>Spring</b>		<b>Summer</b>	
<b>Pure module (Year 1)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• <b>Baseline assessment</b></li> <li>• Vectors (Ch 11)</li> <li>• Differentiation (Ch 12)</li> </ul> <i>PK: H1, H3, H7, H17, 11.01, 11.12, 11.3, 11.14</i>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• Integration (Ch 13)</li> <li>• Exponentials and logarithms (Ch 14)</li> </ul> <i>PK: 11.03, H12</i>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• Algebraic expressions (Ch 1)</li> <li>• Quadratics (Ch 2)</li> <li>• Equations &amp; Inequalities (Ch 3)</li> <li>• Graphs &amp; Transformations (Ch 4)</li> </ul> <i>PK: 11.01, H6, H7, H8</i>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• Straight Line Graphs (Ch 5)</li> <li>• Circles (Ch 6)</li> <li>• Algebraic Methods (Ch 7)</li> </ul> <i>PK: H2, H1, H16, 11.01, 11.12-11.14</i>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• Algebraic Methods cont. (Ch 7)</li> <li>• Binomial Expansion (Ch 8)</li> <li>• Trigonometric Ratios (Ch 9)</li> <li>• Trigonometric Identities and Equations (Ch 10)</li> </ul> <i>PK: 11.03, H18</i>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>
<b>Pure module (Year 2)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• Trigonometric functions</li> <li>• Radians</li> <li>• Trigonometry &amp; modelling</li> <li>• Algebraic methods</li> </ul> <i>PK: 11.03, 11.08, H18</i>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• Functions &amp; graphs</li> <li>• Sequences &amp; series</li> <li>• Parametric equations</li> </ul> <i>PK: 11.08, 9.15, HT3 Y12</i>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• Binomial expansion</li> <li>• Differentiation</li> <li>• Numerical methods</li> </ul> <i>PK: 11.08, 11.09, H8, HT3 and HT4 Y12</i>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• Integration</li> <li>• Vectors</li> </ul> <i>PK: 11.01-11.05, 11.12-11.14</i>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul> <i>PK: 11.12</i>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>
<b>Statistics &amp; Mechanics module (Year 1)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• Data collection techniques</li> <li>• Measures of location and spread</li> <li>• Representations of data</li> </ul> <i>PK: 11.09, H10</i>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• Correlation</li> <li>• Probability</li> <li>• Statistical distributions</li> <li>• Hypothesis testing</li> </ul> <i>PK: H9, H10, 11.09</i>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• Modelling in mechanics</li> <li>• Constant acceleration</li> </ul> <i>PK: H5, 11.09, 11.14, 11.13</i>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• Forces and motion</li> <li>• Revision programme</li> </ul> <i>PK: H5, H1</i>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>
<b>Statistics &amp; Mechanics module (Year 2)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>• Regression correlation and hypothesis testing</li> <li>• Conditional probability (Venn Diagrams)</li> <li>• Normal distribution</li> </ul> <i>PK: HT1 and HT2 Y12</i>	<b>HT2:</b> <ul style="list-style-type: none"> <li>• Approximating normal distribution</li> </ul> <i>PK: HT1 and HT2 Y12</i>	<b>HT3:</b> <ul style="list-style-type: none"> <li>• Moments</li> <li>• Forces and frictions</li> <li>• Projectiles</li> </ul> <i>PK: HT1 and HT2 Y12</i>	<b>HT4:</b> <ul style="list-style-type: none"> <li>• Applications of forces</li> <li>• Further kinematics</li> </ul> <i>PK: HT1 and HT2 Y12</i>	<b>HT5:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>• Revision Programme</li> </ul>

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KS5: At Shoreham Academy, we offer A level maths as well as further maths.

<u>A level Further Maths:</u>	Autumn		Spring		Summer	
<b>Core Pure module (Year 1)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>Complex numbers</li> <li>Argand diagrams</li> <li>Roots of polynomials</li> </ul> <p><i>PK: 11.12, 11.07</i></p>	<b>HT2:</b> <ul style="list-style-type: none"> <li>Roots of polynomials (continued)</li> <li>Series</li> <li>Proof by induction</li> <li>Vectors</li> </ul> <p><i>PK: 11.01, 11.02, 11.04, 11.12</i></p>	<b>HT3:</b> <ul style="list-style-type: none"> <li>Matrices</li> <li>Linear transformations</li> <li>Volumes of revolution</li> </ul> <p><i>PK: 11.10, 11.15, 11.13</i></p>	<b>HT4:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>	<b>HT5:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>
<b>Core Pure module (Year 2)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>Complex numbers</li> <li>Series</li> <li>Further calculus</li> </ul> <p><i>PK: HT1 Y12</i></p>	<b>HT2:</b> <ul style="list-style-type: none"> <li>Calculus (continued)</li> <li>Polar coordinates</li> </ul> <p><i>PK: 11.03, 11.15, HT1 Y12</i></p>	<b>HT3:</b> <ul style="list-style-type: none"> <li>Hyperbolic functions</li> <li>Differential equations</li> </ul> <p><i>PK: HT2 and HT3 Y12</i></p>	<b>HT4:</b> <ul style="list-style-type: none"> <li>Differential equations (cont.)</li> </ul> <p><i>PK: HT2 Y12</i></p>	<b>HT5:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>
<b>Further Decision module (Year 1)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>Sorting Algorithms</li> <li>Graphs &amp; Networks</li> <li>Algorithms on Graphs</li> </ul> <p><i>PK: HT1 and HT2 Y11</i></p>	<b>HT2:</b> <ul style="list-style-type: none"> <li>Route Inspection</li> <li>Linear programming</li> </ul> <p><i>PK: HT1 Y12</i></p>	<b>HT3:</b> <ul style="list-style-type: none"> <li>The Simplex Algorithm</li> <li>Travelling Salesman Problem</li> </ul> <p><i>PK: HT1 and HT2 Y12</i></p>	<b>HT4:</b> <ul style="list-style-type: none"> <li>Critical Path Analysis (AS Level Content)</li> </ul> <p><i>PK: HT3 Y12</i></p>	<b>HT5:</b> <ul style="list-style-type: none"> <li>Critical Path Analysis (A Level Content)</li> </ul> <p><i>PK: HT4 Y12</i></p>	<b>HT6:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul> <p><i>PK: HT5 Y12</i></p>
<b>Further Mechanics module (Year 2)</b>	<b>HT1:</b> <ul style="list-style-type: none"> <li>Momentum and impulse</li> <li>Work, energy and power</li> </ul> <p><i>PK: 11.08, 11.13, HT1 Y12</i></p>	<b>HT2:</b> <ul style="list-style-type: none"> <li>Elastic Energy</li> </ul> <p><i>PK: HT1-2</i></p>	<b>HT3:</b> <ul style="list-style-type: none"> <li>Elastic collisions in one dimension</li> </ul> <p><i>PK: HT1-2</i></p>	<b>HT4:</b> <ul style="list-style-type: none"> <li>Elastic collisions in two dimensions</li> </ul> <p><i>PK: HT1-2, HT3-4 Y13 Mech</i></p>	<b>HT5:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>	<b>HT6:</b> <ul style="list-style-type: none"> <li>Revision Programme</li> </ul>