

Subject: Mathematics GCSE

Exam Board: Edexcel

	Year 9	Year 10	Year 11	Additional information
Autumn 1	<ul style="list-style-type: none"> ● Expressions and Formulae ● Solving Equations ● Rules of indices ● Ratio problems and scale drawing ● Direct and indirect proportion ● Probability of events of combined events ● Histograms, pie and bar charts ● Transformations ● Pythagoras ● Trigonometry 	<ul style="list-style-type: none"> ● Sampling techniques ● Scatter graphs ● Histograms ● Angles in polygons and parallel lines ● Circles - area and perimeter 	<ul style="list-style-type: none"> ● Vectors ● Linear graphs in real life contexts ● Upper/lower bounds 	<p><u>Link to Syllabus</u></p> <p>https://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html</p>
Autumn 2	<ul style="list-style-type: none"> ● Forming and solving equations ● Solving simultaneous equations ● Fractional indices ● Surds ● Standard form ● Compound measures ● Direct and indirect proportion (algebraic) 	<ul style="list-style-type: none"> ● Circle Theorems ● Percentages ● Fractions 	<ul style="list-style-type: none"> ● Non linear graphs ● Iterations ● Functions 	<p><u>Assessment for GCSE</u></p> <ul style="list-style-type: none"> ● Summer of Year 11 - 3 x 90 minute exams, 1 x non calculator, 2 x calculator

	<ul style="list-style-type: none"> • Angles in parallel lines • Averages from grouped data • Box plots 	<ul style="list-style-type: none"> • Estimation and Rounding 		
Spring 1	<ul style="list-style-type: none"> • Completing the square and factorising • Standard form • Compound measures (other) • Solve problems with multiple ratios • Compound interest/using a multiplier for successive percentage change • Expected/theoretical probability • Cumulative frequency • Frequency polygons • Area/volume of similar shapes 	<ul style="list-style-type: none"> • Bearing construction and loci • Inequalities • Probability- venn diagrams and tree diagrams 	<ul style="list-style-type: none"> • Algebraic proof • Trigonometry revision • Pythagoras Revision • Sine Cosine Rule 	<p><u>Coursework</u></p> <ul style="list-style-type: none"> • None
Spring 2	<ul style="list-style-type: none"> • Simplify algebraic fractions/factorising • Gradient between two points • Recognise equation of a circle and exponential graphs • Percentage profit and 	<ul style="list-style-type: none"> • Transformations • Quadratics - solving, sketching and drawing 	Revision for Exams based on QLA from PPE1/PPE2	<p><u>Links to online support</u></p> <p>https://hegartymaths.com/</p> <p>https://www.gcsepod.com/</p> <p>https://www.mathsgenie.co.uk/gcse.html</p>

	<ul style="list-style-type: none"> loss ● Using tree diagrams and venn diagrams in probability ● Scatter Graphs ● Describing transformations ● Trig area of a triangle 			https://www.accessmaths.co.uk/
Summer 1	<ul style="list-style-type: none"> ● Functions and substitution ● Change the subject of a formula ● Recurring Decimals to fractions ● Further compound measures and real life graphs ● Enlargement with negative and fractional scale factors ● Areas of sectors ● Circle Theorems ● Link with box plots and cumulative frequency curves 	<ul style="list-style-type: none"> ● Non linear graphs ● Iterations ● Vectors 	Revision for Exams based on QLA from PPE1/PPE2	
Summer 2	<ul style="list-style-type: none"> ● Quadratic graphs - drawing and recognising and calculating intercepts and turning 	<ul style="list-style-type: none"> ● Trigonometry revision 	Revision	<u>Subject Specific Resources Needed</u>

	<p>points</p> <ul style="list-style-type: none">• Non-linear simultaneous equations• iteration• Rounds and limits of accuracy• Histogram revision• Pythagoras and Trigonometry including 3D applications.	<ul style="list-style-type: none">• Pythagoras Revision • Sine and Cosine rule - non right angles triangles		<p>Scientific Calculator</p> <p>Compass</p> <p>Protractor</p> <p>Ruler</p>
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Maths A-Level
Exam board: Edexcel

	Year 12	Year 13	Additional information
Autumn 1	<p>Induction Pack testing</p> <p>Unit 1: Algebra and Functions</p> <p>Unit 2a Data presentation and interpretation</p> <p>Unit 2: Coordinate geometry in the (x,y) plane</p> <p>Unit 1: Algebra and Functions</p> <p>Unit 6 Quantities and units in mechanics</p> <p>Unit 7 Kinematics</p> <p>Unit 7b: Kinematics 1 (constant acceleration)</p>	<p>Functions and modelling</p> <p>Regression and correlation</p> <p>Trigonometry</p> <p>Series and sequences</p> <p>Moments</p> <p>Parametric equations</p> <p>The Binomial theorem</p>	<p>Link to syllabus:</p> <p>https://qualifications.pearson.com/en/qualifications/edexcel-a-levels/mathematics-2017.html</p> <p>Large data set</p> <p>https://qualifications.pearson.com/content/dam/pdf/A%20Level/Mathematics/2017/specification-and-sample-assesment/Pearson%20Edexcel%20GCE%20AS%20and%20AL%20Mathematics%20data%20set%20-%20Issue%201%20(1).xls</p>
Autumn 2	<p>Unit 1 Statistical sampling</p> <p>Unit 2b: Data presentation and interpretation</p> <p>Unit 6: Differentiation</p> <p>Unit3: Further algebra</p> <p>Unit 5: Vectors (2D)</p>	<p>Numerical methods</p> <p>Normal Distribution</p> <p>Differentiation</p>	

Spring 1	Unit 3: Probability Unit 4: Statistical distributions Unit 8a: Forces & Newton's laws Unit 8b Forces & Newton's laws	Integration Forces at any angle Application of Kinematics Application of Forces	Assessment: Internal End of Yr12 – 2 papers. 2hr – Pure paper 75min – Applied paper External End of Yr13 – 3 papers. 2 x 2hr – Pure paper 1 x 1hr – Applied paper Coursework: None
Spring 2	Unit 4: Trigonometry Unit 5a Statistical hypothesis testing Unit 8b Forces & Newton's laws Unit 7: Integration Unit 9: Kinematics 2(variable acceleration)	Probability Set Notation Vectors - 3D vectors Further Kinematics	

Summer 1	Unit 8: Exponentials and logarithms Yr13 Unit 2: Algebraic and partial fractions Yr13 Unit 1: Proof Yr13 Trig		Link to online support: https://www.mathsgenie.co.uk/alevel.html https://www.physicsandmathstutor.com/
Summer 2	Revision Yr13 Entrance Exam Series and sequences Functions and modelling		

Subject: Further Maths

Board: Edexcel

	Year 12	Year 13	Additional information
Autumn 1	Complex Numbers Poisson and Binomial Distribution Matrices Algorithms and Graph Theory	Hyperbolic Functions Hypothesis testing The Central Limit Theorem Polar coordinates Travelling salesman problem	Link to syllabus: https://qualifications.pearson.com/content/dam/pdf/A%20Level/Mathematics/2017/specification-and-sample-assesment/a-level-13-further-mathematics-specification.pdf

<p>Autumn 2</p>	<p>Complex Numbers</p> <p>Discrete Prob Distributions</p> <p>Linear transformations</p> <p>Route inspection problem</p>	<p>Further algebra and functions (series)</p> <p>Chi squared tests</p> <p>Probability generating functions</p> <p>Polar coordinates</p> <p>Linear programming</p>	<p>Assessment:</p> <p>Internal End of Yr12 – 2 papers.</p> <ul style="list-style-type: none"> - 1x100min – Core Pure paper - 1x100min – Applied paper (Decision & Further Stats) <p>External End of Yr13 – 3 papers.</p> <ul style="list-style-type: none"> - 2 x 2hr – Core Pure paper - 1 x 2hr – Applied paper (Decision and Further Stats) <p>Coursework:</p> <p>None</p>
<p>Spring 1</p>	<p>Series</p> <p>Algebra and functions</p> <p>Proof</p> <p>Poisson and Binomial Distribution</p> <p>Linear Programming</p>	<p>Further calculus</p> <p>Quality of tests and estimators</p> <p>Critical path analysis</p> <p>Differential equations</p>	

	Critical Path Analysis		
Spring 2	Poisson and Binomial Distribution Chi squared tests Vectors	Revision	
Summer 1	Complex Numbers Geometric and Negative binomial distribution Planarity algorithm Floyd's algorithm	Examination	Link to online support: https://www.mathsgenie.co.uk/alevel.html https://www.physicsandmathstutor.com/ https://alevelmathsrevision.com/further-maths-categorised-exam-questions/

Summer 2

Revision

Yr13 Entrance Exam

**Series and
sequences**

**Functions and
modelling**