

Subject: Mathematics

		Topics Covered:		
		Term 1:	Term 2:	Term 3:
Key Stage 3	Year 7	6 <ul style="list-style-type: none"> The four operations Place value Ordering numbers Inverse operations Perimeter and area of shapes Fractions and Decimals Order of operations (BIDMAS) Working with indices and roots 	<ul style="list-style-type: none"> Rounding numbers Drawing and measuring lines and angles Using and converting units of measurement Angle properties. Converting between fractions, decimals and percentages Applying the four operations to fraction and decimal calculations, including mixed numbers. 	<ul style="list-style-type: none"> Using algebraic notation Substituting numbers into algebraic expressions Collecting like terms and multiplying a single term over a bracket. Completing and interpreting frequency tables, bar charts and line graphs. Calculating the mean Solving problems involving the mean.
	Year 8	6 <ul style="list-style-type: none"> Using the order of operations in more complex calculations Rounding numbers and considering degrees of accuracy Generating sequences, rules for sequences and the nth term rule Using the recalling factors, multiples and primes. Displaying numbers as products of prime factors Solving linear equations Rearranging formulae Volume of basic 2-D & 3-D shapes 	<ul style="list-style-type: none"> Converting between fractions, decimals and percentages Calculating the percentage of an amount Calculating percentage increase and decrease Using decimals as percentage multipliers Reverse percentages and compound interest Rounding to decimal places and significant figures Expressing one fraction as a quantity of another Simplifying ratio Dividing quantities in a given ratio Solving problems involving compound units 	<ul style="list-style-type: none"> Deriving and illustrating properties of triangles quadrilaterals, circles and other plane figures Understanding and using angles in parallel lines Deducing the angle sum in any polygon and to derive properties of regular properties Using the properties of faces, surfaces, edges and vertices of 3-D shapes to solve problems Draw and interpret pie charts Find median and mode from a set of numbers Draw and interpret scatter diagrams Complete and construct two-way tables and understand their uses
	Year 9	6 <p>Higher</p> <ul style="list-style-type: none"> Calculations and Checking Indices, Roots, Reciprocals and Hierarchy of Operations Factors, Multiples and Primes Standard Form and Surds Algebra: the basics Setting up, rearranging and solving equations. <p>Foundation</p> <ul style="list-style-type: none"> Integers and Place Value and Decimals Indices, Powers and Roots, Factors, Multiples and Primes Algebra: the basics Expressions and Substitution into formulae Tables and Pie Charts 	<p>Higher</p> <ul style="list-style-type: none"> Sequences Averages and range Representing and interpreting data Scatter Graphs Fractions Percentages Ratio and Proportion <p>Foundation</p> <ul style="list-style-type: none"> Charts and Graphs Scatter Graphs Fractions, Decimals and Percentages Statistics and Questionnaires The averages Angles, Lines and Symmetry 	<p>Higher</p> <ul style="list-style-type: none"> Polygons, Angles and Parallel Lines Pythagoras and Trigonometry Graphs: the basics and real-life graphs Linear graphs and co-ordinate geometry Quadratics, Cubics and other graphs <p>Foundation</p> <ul style="list-style-type: none"> Polygons and parallel lines. Interior and exterior angles of polygons Equations Inequalities Sequences Perimeter and Area

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		GCSE Exam Board / Specification (link): Following Edexcel Linear IMAI, either Foundation or Higher tier http://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html			
Key Stage 4	Year 10	8	<p>Higher:</p> <ul style="list-style-type: none"> Setting up, rearranging and solving equations Sequences Averages and Range Representing and Interpreting Data Scatter Graphs Fractions and Percentages Ratio and Proportion <p>Foundation:</p> <ul style="list-style-type: none"> Tables, Pie Charts, Scatter Graphs Fractions, Decimals and Percentages Statistics and Questionnaires The averages Angles, Lines and Symmetry 	<p>Higher:</p> <ul style="list-style-type: none"> Polygons, Angles and Parallel Lines Pythagoras and Trigonometry Graphs: the basics and real-life graphs Linear graphs and co-ordinate geometry Quadratics, Cubics and other graphs <p>Foundation:</p> <ul style="list-style-type: none"> Polygons and parallel lines. Interior and exterior angles of polygons Equations Inequalities Sequences Perimeter and Area 3D forms and volume 	<p>Higher:</p> <ul style="list-style-type: none"> Perimeter, Area and 3-D forms Circles, Cylinders, Cones and Spheres Accuracy and Bounds Transformations Constructions, Loci and Bearings <p>Foundation:</p> <ul style="list-style-type: none"> Real-life Graphs Straight Line Graphs Transformations: Rotations & Translations Transformations: Reflection & Enlargement Ratio Proportion
	Year 11	8	<p>Level 2 AQA Further Maths Units (IIXI only):</p> <ul style="list-style-type: none"> Number and Algebra 1 Algebra 2-4 Co-ordinate Geometry (Geometry 1) <p>Higher:</p> <ul style="list-style-type: none"> Review fraction to recurring decimal proof, data collection, sampling and stratified samples Histograms Surface Area and Volume Index notation and Surds Review linear and Quadratic graphs Direct and Inverse Proportion Further Simultaneous Equations Further Probability Pythagoras and Trig in 3D <p>Foundation:</p> <ul style="list-style-type: none"> In Foundation Maths, we assess pupils every 3 weeks and deliver content based on weak topics areas identified from the assessments 	<p>Level 2 Further Maths (IIXI only):</p> <ul style="list-style-type: none"> Revision for Mock Exam Geometry 2 Calculus – Integration Matrices <p>Higher:</p> <ul style="list-style-type: none"> Revision for Mock Exam Upper and Lower Bounds Similarity and Congruence Sine and Cosine Rules Transformations of functions Circle Theorems Algebraic Fractions Vectors <p>Foundation:</p> <ul style="list-style-type: none"> In Foundation Maths, we assess pupils every 3 weeks and deliver content based on weak topics areas identified from the assessments. 	<p>Level 2 Further Maths (IIXI only):</p> <ul style="list-style-type: none"> Revision and GCSE exam preparation <p>Higher:</p> <ul style="list-style-type: none"> Revision and GCSE exam preparation <p>Foundation:</p> <ul style="list-style-type: none"> Revision and GCSE exam preparation

A-level Exam Board / Specification (link): AS/A2 Mathematics (OCR): http://www.ocr.org.uk/qualifications/as-a-level-gce-mathematics-3890-3892-7890-7892/			
Key Stage 5	Year 12	9	<p>AS-level Mathematics (OCR)</p> <p>Core 1:</p> <ul style="list-style-type: none"> Coordinate Geometry and Circles Graphs and Polynomials Surds and Indices Quadratics and Inequalities Differentiation <p style="text-align: right;"><i>with</i></p> <p>Mechanics 1:</p> <ul style="list-style-type: none"> Velocity & acceleration Force & motion Resolving, combining & splitting forces and equilibrium Newton's 3rd law <p style="text-align: right;"><i>or</i></p> <p>Statistics 1:</p> <ul style="list-style-type: none"> Representing Data Measures of Location and Spread Probability, Permutations, Combinations, Distributions Expectation and Variance, Correlation and Regression
	Year 13	9	<p>AS-level Mathematics (OCR)</p> <p>Core 1:</p> <ul style="list-style-type: none"> Differentiation (cont.) <p>Core 2:</p> <ul style="list-style-type: none"> Sequences & Series The Binomial Theorem Factors & Remainders Integration Trapezium Rule Trigonometry Exponentials & Logarithms <p style="text-align: right;"><i>with</i></p> <p>Mechanics 1:</p> <ul style="list-style-type: none"> Momentum General linear motion <p style="text-align: right;"><i>or</i></p> <p>Statistics 1:</p> <ul style="list-style-type: none"> Expectation and Variance Correlation and Regression
			<p>AS-level Mathematics (OCR)</p> <ul style="list-style-type: none"> Revision and AS-level exam preparation <p>Core 3: (after Y12 exams)</p> <ul style="list-style-type: none"> Exponential Growth & Decay Functions & Modulus
			<p>AS-level Mathematics (OCR)</p> <ul style="list-style-type: none"> Revision and A-level exam preparation

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A-level Exam Board / Specification (link): AS/A2 Further Mathematics (Edexcel): http://qualifications.pearson.com/en/qualifications/edexcel-a-levels/mathematics-2008.html				
Year 12	9	<p>Further Pure 1:</p> <ul style="list-style-type: none"> Complex numbers Numerical solutions of equations Co-ordinate systems Matrix algebra <p>Mechanics 1:</p> <ul style="list-style-type: none"> Modelling Dynamics of a particle moving in a straight line Statics of a particle <p>Decision 1:</p> <ul style="list-style-type: none"> Algorithms Graphs & Networks Algorithms on networks Route Inspection 	<p>Further Pure 1:</p> <ul style="list-style-type: none"> Proof by mathematical induction <p>Mechanics 1:</p> <ul style="list-style-type: none"> Moments Vectors <p>Decision 1:</p> <ul style="list-style-type: none"> Critical Path Analysis Linear Programming Matchings 	<ul style="list-style-type: none"> Revision and AS-level exam preparation <p>Further Pure 2: (after Y12 exams)</p> <ul style="list-style-type: none"> Sequences & Series
Year 13	9	<p>Further Pure 2:</p> <ul style="list-style-type: none"> Inequalities Series Further Complex Numbers First Order Differential Equations Second Order Differential Equations Maclaurin and Taylor series Polar Coordinates <p>Mechanics 2:</p> <ul style="list-style-type: none"> Kinematics of a particle moving in a straight line or plane Centres of mass Work, energy and power Collisions Statics of rigid bodies 	<p>Further Pure 2:</p> <ul style="list-style-type: none"> Maclaurin and Taylor series Polar Coordinates <p>Mechanics 3:</p> <ul style="list-style-type: none"> Further kinematics Elastic strings and springs Further dynamics Motion in a circle Statics of rigid bodies 	<ul style="list-style-type: none"> Revision and A-level exam preparation
Level 3 certificate Introduction to Quantitative Methods (OCR): http://ocr.org.uk/qualifications/as-a-level-gce-quantitative-methods/				
Year 12 only	9	<ul style="list-style-type: none"> Probability & Risk Percentages Appreciation and depreciation Foreign exchange Introducing estimation Upper and lower bounds for calculations Standard form Algebra Graphs and gradients Exponentials & logarithmic scales 	<ul style="list-style-type: none"> Exponentials & logarithmic scales (cont) Modelling Statistics introduction The Normal distribution Statistics Coursework planning Completing coursework 	<ul style="list-style-type: none"> Revision and AS-level exam preparation