

Subject: Mathematics

KS4 Course Syllabus: <https://qualifications.pearson.com/en/forms/thank-you-gcse-maths-ito.html>

Cycle/Cohort	Year 7	Year 8	Year 9	Year 10	Year 11
Autumn 1 Topics and Opportunities	Algebraic Thinking: Sequences, Understand and use algebraic notation, Equality and equivalence.	Proportional Reasoning: Ratio and scale, Multiplicative Change, Multiplying and dividing fractions	Reasoning with Algebra: Straight line graphs, Forming and solving equations, Testing conjectures.	1.1 Number problems 1.2 Place value and estimating 1.3 HCF and LCM 1.4 Calculating with powers 1.5 Zero, negative and fractional indices 2.1 Algebraic indices 1.6 Powers of 10 and standard form 1.7 Surds 4.1 Fractions 4.2 Ratios 4.3 Ratios and proportions 4.4 Percentages 4.5 Fractions, decimals and percentages 2.2 Expanding and factorising 2.7 More expanding and factorising	11.1 Growth and decay 11.2 Compound measures 11.3 More compound measures 11.4 Ratio and proportion 14.1 Sampling 14.2 Cumulative frequency 14.3 Box plot 14.4 Drawing histograms 14.5 Interpreting histograms 14.6 Comparing and describing populations 12.1 Congruency 12.2 Geometric proof and congruence 12.3 Similarity 12.4 More similarity 12.5 Similarity in 3D solids
Autumn 2 Topics and Opportunities	Place value and proportion: place value and ordering integers and decimals, Fractions, decimal and percentages equivalence,	Representations: Working in the Cartesian plane, Representing Data, Tables & Probability	Constructing in 2 & 3 dimensions: Three dimensional shapes, Constructions & congruency	2.3 Equations 2.4 Formulae 2.5 Linear sequences 2.6 Non-linear sequences 3.1 Statistical diagrams 1 3.2 Time series 3.3 Scatter graphs 3.4 Line of best fit 3.5 Averages and range 3.6 Statistical diagrams 2 5.1 Angle properties of triangles and quadrilaterals 5.2 Interior angles of a polygon 5.3 Exterior angles of a polygon	13.1 Accuracy 13.2 Graph of the sine function 13.3 Graph of the cosine function 13.4 The tangent function 13.5 Calculating areas and the sine rule 13.6 the cosine rule and 2D trigonometric problems 13.7 Solving problems in 3D 13.8 Transforming trigonometric graphs 1 13.9 Transforming trigonometric graphs 2 15.1 Solving simultaneous equations graphically 15.2 Representing inequalities graphically 15.3 Graphs of quadratic functions 15.4 Solving quadratic equations graphically 15.5 Graphs of cubic functions
Spring 1 Topics and Opportunities	Application of number: solving problems with addition and subtraction, Fraction and percentages of an amount.	Algebraic techniques: Brackets, Equations & inequalities, Indices. Developing Number: Fractions & percentages	Reasoning with number: Numbers, Using percentages, Maths and Money	5.4 Pythagoras' theorem 1 5.5 Pythagoras' theorem 2 5.6 Trigonometry 1 5.7 Trigonometry 2 6.1 Linear graphs 6.2 More linear graphs	16.1 Radii and chords 16.2 Tangents 16.3 Angles in circles 16.4 Applying circle theorems

				<p>6.3 Graphing rates of change 6.4 Real-life graphs 6.5 Line segment 6.6 Quadratic graphs 6.7 Cubic and reciprocal graphs 6.8 More graphs 7.1 Perimeter and area 7.2 Units and accuracy 7.3 Prisms 7.4 Circles 7.5 Sectors of circles 7.6 Cylinders and spheres</p>	<p>17.1 Rearranging formulae 17.2 Algebraic fractions 17.3 Simplifying algebraic fractions 17.4 More algebraic fractions 17.5 Surds 17.6 Solving algebraic fractions equations 17.7 Functions 17.8 Proof 18.1 Vectors and vector check 18.2 Vector arithmetic 18.3 More vector arithmetic 18.4 Parallel vectors and collinear points 18.5 Solving geometric problems 19.1 Direct proportion 19.2 More direct proportions 19.3 Inverse proportions 19.4 Exponential function</p>
Spring 2 Topics and Opportunities	<p>Application of number: Solving problems with multiplication and division. Directed number: Operations and equations with directed number</p>	<p>Developing Number: Standard index form, Number sense</p>	<p>Reasoning with geometry: Deduction, Rotation & translation, Pythagoras theorem.</p>	<p>7.7 Pyramids and cones 8.1 3D solids 8.2 Reflections and rotations 8.3 Enlargement 8.4 Transformations and combinations of transformation 8.5 Bearings and scale drawings 8.6 Constructions 1 8.7 Constructions 2 8.8 Loci</p>	<p>19.5 Non-linear graphs 19.6 Translating graphs of functions 19.7 Reflecting and stretching graphs of functions</p>
Summer 1 Topics and Opportunities	<p>Fractional thinking: Addition and subtraction of fractions. lines and angles: Constructing, measuring and using geometric notation, Developing geometric reasoning.</p>	<p>Developing Geometry: Angles in parallel lines & polygons Area of trapezia & circles Line symmetry & reflection</p>	<p>Reasoning with proportion: Enlargement & similarity, Solving ration & proportion problems</p>	<p>9.1 Solving quadratic equations 1 9.2 Solving quadratic equations 1 9.3 Completing the square 9.4 Solving simple simultaneous equations 9.5 More simultaneous equations 9.6 Solving linear and quadratic simultaneous equations. 9.7 Solving linear inequalities</p>	
Summer 2 Topics and Opportunities	<p>Lines and angles: Developing geometric reasoning.</p>	<p>Reasoning with data: The data handling cycle Measures of location</p>	<p>Reasoning with proportion: Rates Representations: Probability Algebraic Representation.</p>	<p>10.1 Combine events 10.2 Mutually exclusive events 10.3 Experimental probability</p>	

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	Reasoning with number: Sets and probability Reasoning with number: Prime numbers and proof.			10.4 Independent events tree diagrams 10.5 Conditional probability 10.6 Venn diagram and set notations 11.1 Growth and decay 11.2 Compound measures 11.3 More compound measures 11.4 Ratio and Proportion	