

What are the aims and intentions of this curriculum?

The Year 11 curriculum is designed to prepare students for their GCSE examinations. It builds on the complexity, depth, and range of the Key Stage 3 (KS3) curriculum, focusing on number operations, algebra, ratio, proportion, rates of change, geometry, measurements, probability, and statistics. Students are assigned homework on a weekly basis, and it is expected that they complete it both online and offline.

Our vision is for students to be able to analyse mathematical situations, critically evaluate problems, and deduce plausible and accurate solutions. Additionally, they should become proficient enough to pursue professions and training at the highest level while communicating clearly and effectively.

Term	Topics	Knowledge and key terms	Skills developed	Assessment
Summer 2	13. <i>More trigonometry</i>	Angle, Hypotenuse, Adjacent, Opposite, Cosine, Sine, Tangent, Right Angle, Degree	Identify lower and upper bounds; Draw and interpret trigonometric graphs; Use the sine rule; area rule and cosine rule to solve 2D and 3D problems.	Piximaths Aiming for grade 7-9 booklet MyMaths: https://vle.mathswatch.co.uk/vle/ End of topic class test Stretch and challenge feedback sheet (fortnightly)
	14. <i>Further statistics</i>	Cumulative, Probability, Interpret, Sampling, Compare, Frequency, Polygons, Mode, Mean, Data, Midpoint	Use stratified sampling; Draw and interpret cumulative frequency graphs (and quartiles) and box plots; Draw and interpret histograms (frequency density graphs); Compare measures of distribution.	
	15. <i>Equations and graphs</i>	Linear, Quadratic, Coefficient, Variable, Term, Intercept, Gradient, Constant, Coordinate, Plane, Axis, Quadrant	Solve simultaneous equations graphically (linear-linear and quadratic-linear); Indicate regions created by linear inequalities; Determine roots; Sketch quadratic equations and find the respective maxima and minima; Use intercepts, sketch cubic graphs; Solve quadratics and cubic with iteration.	
Autumn 1	16. <i>Circle theorems</i>	Tangent, Segment, Chord, Sector, Radius, Circumference, Inscribe Angle, Cyclic Quadrilateral, Angle at Centre, Opposite	Circle vocabulary; Derive and apply the 9 circle theorems.	Piximaths Aiming for grade 7-9 booklet MyMaths: https://vle.mathswatch.co.uk/vle/ End of topic class test Stretch and challenge feedback sheet (fortnightly)
	17. <i>More algebra</i>	Variable, Constant, Like Term, Power, Base, Index/Exponent, Inverse Operation, Numerator, Denominator, Lowest Common Multiple, Factor, Factorise, Expand, Simplify, Even, Odd, Consecutive	Manipulate expressions to change the subject; Simplify algebraic fractions; Solve equations with fractions and indices; Use equations to solve algebraic ratios; Argue algebraic proofs (identities and even/odd numbers); Expand and simplify surds; Rationalise denominators (by using conjugates); Find, solve and prove using composite functions; Find inverse functions; Use trial and improvement to find a solution.	

<p>Autumn 2</p>	<p>18. <i>Vectors and geometric proofs</i></p> <p>19. <i>Proportion and graphs</i></p>	<p>Parallel, Collinearity, Magnitude, Direction, Resultant, Movement, Translation Vector, Ratio, Multiple, Scalar</p> <p>Constant, Ratio, Equivalent, Origin, Axes, Curve, Straight Line, Inverse, Direct, Relationship, Estimate, Area, Gradient</p>	<p>Identify, use and describe translations in vector notation; Draw vectors and calculate their magnitude; Calculate net vectors; Express one vector as the sum of others; Solve problems with vectors; Solving problems with vectors in a ratio; Prove parallel vectors; Prove vectors are linear</p> <p>Find solution to direct and inverse proportion problems using the k-method; Draw graphs of exponential functions; Sketching graphs of exponential functions; Estimate area under a graph; Interpret function transformations in terms of stretching, translation and reflection; Apply function transformation on all GCSE graphs.</p>	<p>Piximaths Aiming for grade 7-9 booklet MyMaths: https://vle.mathswatch.co.uk/vle/ End of topic class test Stretch and challenge feedback sheet (fortnightly)</p>
<p>Spring 1</p>	<p><i>Revision</i></p>	<p>Quotient, Expression, Ratio, Integer, Indices, Expression, Solve, Factorise, Expand, Simplify, Like Terms, Coordinates, Translate, Vector, Reflect, Rotate, Enlarge, Hypotenuse Adjacent, Opposite, Angle, Outcome, Even, Independent, Dependent, Mutually Exclusive, Likely, Certain, Unlikely Experiment, Sample Space, Mean, Mode, Median, Range, Compare, Equally Likely, Conditional</p>	<p>Lessons are tailored to address specific misconceptions, general logical mistakes, memory recall and the mathematical communicating ability of each class. Revision lessons include the following areas:</p> <ul style="list-style-type: none"> • Working with numbers • Algebra • Ratio and proportion • Graphing • Transformations • Geometry • Probability; and • Statistics. 	<p>Piximaths Aiming for grade 7-9 booklet MyMaths: https://vle.mathswatch.co.uk/vle/ End of topic class test Stretch and challenge feedback sheet (fortnightly)</p>
<p>Spring 2</p>	<p><i>Revision</i></p>	<p>Quotient, Expression, Ratio, Integer, Indices, Expression, Solve, Factorise, Expand, Simplify, Like Terms, Coordinates, Translate, Vector, Reflect, Rotate, Enlarge, Hypotenuse Adjacent, Opposite, Angle, Outcome, Even, Independent, Dependent, Mutually Exclusive, Likely, Certain, Unlikely Experiment, Sample Space, Mean, Mode, Median, Range, Compare, Equally Likely, Conditional</p>	<p>Lessons are tailored to address specific misconceptions, general logical mistakes, memory recall and the mathematical communicating ability of each class. Revision lessons include the following areas:</p> <ul style="list-style-type: none"> • Working with numbers • Algebra • Ratio and proportion • Graphing • Transformations • Geometry • Probability; and • Statistics. 	<p>Piximaths Aiming for grade 7-9 booklet MyMaths: https://vle.mathswatch.co.uk/vle/ End of topic class test Stretch and challenge feedback sheet (fortnightly)</p>