

Year 11 Curriculum Overview [2026-2027]
Mathematics

Autumn Term

Autumn Term	Knowledge & Understanding			Literacy Skills Opportunities for developing literacy skills	Employability Skills [if any]	Assessment Opportunities
	Composites	Components [KEY concepts & subject specific vocab]	Formal Retrieval [if any]			
HT1	Factors, Powers and Surds	• Prime factorisation, HCF and LCM • Powers, roots and negative indices • Fractional indices • Four operations with surds • Simplify surds • Expand single brackets with surds • Rationalise the denominator • Expand double brackets with surds • Rationalise the denominator with more complex denominators (E) • Solve problems with surds	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic unit test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Key words: Factor, Multiple, Highest Common Factor, Lowest Common Multiple, Powers, Indices, Root, Irrational, Rational, Surd, Expand	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively • Careers: Finance, Geography, Science, Engineering, Golden Ratio, Paper	• Plenary True and False Tasks • Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests

	Pythagoras' Theorem and Trigonometry	- Pythagoras' theorem (find any side) - Use trigonometric ratios to find an unknown side length - Use trigonometric ratios to find an unknown angle - Exact trigonometrical values - Trigonometry in 3-D shapes - Area of a non-right-angled triangle - Use the sine rule to find an unknown length - Use the sine rule to find an unknown angle - Use the cosine rule to find an unknown length - Use the cosine rule to find an unknown angle	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic unit test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Key words: Hypotenuse, Opposite, Adjacent, Tangent, Sine, Cosine	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: Agriculture, Surveyors, Construction, Aviation, Astronomy, Engineer	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests
	Simultaneous Equations	- Solve simultaneous equations using graphs - Solve simultaneous equations (no adjustments) - Solve simultaneous equations (adjust one) - Solve simultaneous equations (adjust both) - Solve simultaneous equations by substitution - Solve problems with simultaneous equations	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic unit test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: Numerator, Denominator, Exact Value, LCM, Simplest Form,	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests

		• Solve simultaneous equations (one linear, one non-linear) using graphs (E) • Solve simultaneous equations (one linear, one non-linear) by equating expressions (E) • Solve simultaneous equations (one linear, one non-linear) using substitution (E)		Simultaneous, Linear, Non-linear	effectively - Using language effectively • Careers: Engineering and architecture and planning	• End of term tests
	Ratio and Proportion	• Solve problems with ratio • Best buy problems • Conversion graphs • Exchange rates • Direct proportion equations • Complex and direct proportion equations (E) • Inverse proportion • Inverse proportion equations (E) • Direct and inverse proportion graphs	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Questioning tasks • Key words: ratio, share, equal parts, whole, unit price, scaling, directly proportional, conversion, origin, linear, exchange rate, currency, convert, equation, formula, constant of proportionality, inverse, inversely proportional, assumption, linear relationship, non-linear relationship,	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively • Careers: healthcare, construction, engineering, cooking, science, technology, art,	• Plenary True and False Tasks • Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests

				asymptote, constant	design, transportation, trades, everyday service: hair, fitness, real estate	
HT2	Area and volume	- Plans and elevations - Volume of a sphere - Volume of cones and pyramids - Surface area of a spheres, cones and pyramids - Volume and surface area of a frustrum (E) - Convert metric units of area and volume	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: plan, front elevation, side elevation, dimensions, auxiliary line, volume, radius, diameter, hemisphere, cone, pyramid, perpendicular height, slant height, sphere, surface area, frustrum, similar shapes, metric, units	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: construction, engineering, landscape and interior design, healthcare, science, manufacturing, trades, transportation, agriculture, food,	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests

					hospitality, retail, real estate	
	Similarity and congruence	- Find unknown lengths and angles in similar shapes - Identify similar triangles - Solve problems with similar shapes - Prove a pair of triangles are similar - Areas of similar shapes - Volumes of similar shapes - Solve problems with area and volume in similar shapes - Congruence - Prove a pair of triangles are congruent	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: scale factor, corresponding, alternate, co-interior, proportion, similar, length scale factor, area scale factor, volume scale factor, congruent, condition, proof	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: architecture, construction, engineering, art, design, technology, manufacturing, science, maths, medical, dental, everyday trades – carpenter, tiler	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests
	Sequences and proof	Describe and continue sequences	Retrieval in class starter	- Key vocabulary - True and False Tasks	Personal skills - Thinking and problem	Plenary True and False Tasks

		• Explore sequences with algebraic terms • Describe and continue sequences involving surds (E) • Generate a sequence given an algebraic rule • Nth term of a linear sequence • Nth term of a quadratic sequence (E) • Represent numbers algebraically • Algebraic argument and proof	• Prior knowledge whiteboard questions • End of topic test intervention	• Problem Solving Tasks • Questioning tasks • Keywords: arithmetic, geometric, quadratic, Fibonacci, triangular number, surd, simplify, term, term-to-term rule, nth term rule, substitute, second difference, consecutive, integer, expression, multiple, proof, identity	• solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively • Careers: maths, science, technology, computing, engineering, finance, business, law, education, architecture, design	• Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests
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	Sequences & Proof	• Describe and continue arithmetic and geometric sequences • Explore other sequences • Generate a sequence given an algebraic rule • Nth term of a linear sequence	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Questioning tasks • Keywords: arithmetic, geometric,	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills	• Plenary True and False Tasks • Peer and self-assessment • Feedback and
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		- Nth term of a linear sequence - Represent numbers algebraically (E) - Arguments and counterexamples (E)		quadratic, Fibonacci, triangular number, surd, simplify, term, term-to-term rule, nth term rule, substitute, second difference, consecutive, integer, expression, multiple, proof, identity	- Using numbers effectively - Using language effectively - Careers: maths, science, technology, computing, engineering, finance, business, law, education, architecture, design	reflective practise - End of topic tests - End of term tests
HT2	Standard form	- Numbers in standard form - Four operations with numbers in standard form - Solve problems with standard form	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: Base, index, standard form, ordinary number, significant figures	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: science, medicine,	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests

					engineering, technology, astronomy, space, finance, economics, environmental and earth sciences, education, research	
	Circle theorems	- Angles in circles - Circle theorem (angles at the centre and circumference) - Circle theorem (angles in a semicircle) - Circle theorem (angles in the same segment) - Circle theorem (angles in a cyclic quadrilateral) - Circle theorem (angle between radius and chord) - Circle theorem (angle between radius and tangent) - Circle theorem (two tangents from a point) - Circle theorem (alternate segment theorem) - Solve problems with circle theorems	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: circumference, radius, chord, diameter, subtend, reflex angle, arc, right angle, semicircle, inscribed, major segment, minor segment, vertex, cyclic quadrilateral, bisect, perpendicular, tangent, alternate segment	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: engineering, architecture, design, construction, technology, science, maths, trades,	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests

					manufacturing, art, creative	
	Set notation and Venn diagrams	• Set notation • Venn diagrams • Solve problems with Venn diagrams • Conditional probability (Venn diagrams and two-way tables) (E)	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Questioning tasks • Key words: set, element, universal set, complement, intersection, union, venn diagram, mutually exclusive, two-way table, conditional probability	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively • Careers: technology, computing, maths science, business, marketing, healthcare, education, law, project management	• Plenary True and False Tasks • Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests
	Vectors	• Solve problems with vectors • Ratios with vectors (E)	• Retrieval in class starter	• Key vocabulary • True and False Tasks	• Personal skills - Thinking and problem	• Plenary True and False Tasks

		• Collinear points using vectors (E) • Geometric arguments and proof with vectors (E)	• Prior knowledge whiteboard questions • End of topic test intervention	• Problem Solving Tasks • Questioning tasks • Key words: vector, column vector, scalar, parallel vectors, ratio, collinear points, proof	solving - Working together and communicatin • Fundamental skills - Using numbers effectively - Using language effectively • Careers: engineering, physics, science, transportation, navigation, technology, computing, architecture, construction, sports, fitness, military, space	• Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests
Spring term						
Spring Term	Knowledge & Understanding			Literacy Skills	Employability Skills	Assessment Opportunities
	Composites	Components [KEY concepts & subject specific vocab]	Formal Retrieval [if any]	Opportunities for developing literacy skills	[if any]	

HT4	Functions and graphs	• Function notation • Composite functions • Inverse functions • Quadratic and cubic graphs • Reciprocal graphs • Exponential graphs • Trigonometric graphs (E) • Recognise and sketch graphs • Translation of a graph (E) • Reflection of a graph (E) • More complex transformations of the graph of a function (E)	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Questioning tasks • Key words: function, variable, substitute, solve, composite function, rearrange, inverse operation, inverse function, quadratic, cubic, trigonometric, roots, turning point, reciprocal, reciprocal graph, infinity, asymptote, exponential, tends, sine, cosine, tangent, horizontal, vertical, translation, vector, reflection, y-axis, x-axis, invariant point	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively • Careers: science, engineering, technology, computing, finance, business, healthcare, medicine, transportation, aviation, education, research, social sciences, media	• Plenary True and False Tasks • Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests
	Equations and formulae	• Form and solve equations • Form and solve inequalities • Form and solve equations with unknowns on both sides	• Retrieval in class starter	• Key vocabulary • True and False Tasks	• Personal skills - Thinking and problem solving	• Plenary True and False Tasks

		- Form and solve more complex equations and inequalities (E) - Quadratic equations - Quadratic inequalities (E) - Understand iterative processes - Solve equations by iteration - Solve simultaneous equations - Solve simultaneous equations (one linear, one non-linear) (E) - Solve a pair of simultaneous equations involving algebraic constants and a third unknown (E)	- Prior knowledge whiteboard questions - End of topic test intervention	- Problem Solving Tasks - Questioning tasks - Key words: equation, inverse, unknown, solution, expression, coefficient, integer, inequality, quadratic, factorise, product, sum, roots, satisfy, compound inequality, iteration, previous term, next term, converge, simultaneous equations, non-linear, linear, variable, in terms of	- Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: science, engineering, finance, business, technology, computing, healthcare, medicine, construction, trades, transportation, aviation, education, research	- Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests
	Rates	- Speed, distance, time - Distance-time graphs - Velocity-time graphs - Density and pressure - Convert compound units	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: constant speed, average speed, distance, time	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise

				taken, speed, compound measure, velocity, acceleration, gradient, mass, volume, density, force, area, pressure, imperial, metric, convert, units	numbers effectively - Using language effectively - Careers: engineering, science, research, healthcare, medicine, transportation, aviation, meteorology, manufacturing, technology, sports	- End of topic tests - End of term tests
	Angles, bearings and trigonometry	- Understand and represent bearings - Measure and read bearings - Scale drawings using bearings - Calculate bearings using angle rules - Choose appropriate methods to solve problems with right-angled triangles - Solve bearings problems using Pythagoras and trigonometry - Sine and cosine rules - Solve bearings problems using sine and cosine rules (E)	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: direction, clockwise, bearing, angle, north line, scale, parallel, co-interior angles, trigonometric, hypotenuse, opposite, adjacent, formula,	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: engineering,	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests

				substitute, inverse, subject	architecture, construction, navigation, transportation, science, research, technology, computing, military, emergency services, sports, fitness	
Summer term						
Summer Term	Knowledge & Understanding			Literacy Skills	Employability Skills	Assessment Opportunities
	Composites	Components [KEY concepts & subject specific vocab]	Formal Retrieval [if any]	Opportunities for developing literacy skills	[if any]	
HT5	Constructions and loci	• Accurately draw triangles • Accurately draw polygons • Construct an angle bisector and a perpendicular bisector • Construct a perpendicular from or to a point • Locus of distance from a point or a straight line • Locus equidistant from two points and perpendicular bisectors • Locus equidistant from two lines and angle bisectors • Solving problems with loci	• Retrieval in class starter • Prior knowledge whiteboard questions • End of topic test intervention	• Key vocabulary • True and False Tasks • Problem Solving Tasks • Questioning tasks • Key words: protractor, pair of compasses, construct, construction line, accurate, polygon, regular polygon, parallel, vertex, angle bisector, equidistant,	• Personal skills - Thinking and problem solving - Working together and communicating • Fundamental skills - Using numbers effectively - Using language effectively	• Plenary True and False Tasks • Peer and self-assessment • Feedback and reflective practise • End of topic tests • End of term tests

				perpendicular bisector, locus	Careers: architecture, construction, surveying, land management, engineering, design, technology, science, research, everyday trades – plumbing, stonemasons, electricians	
	Transformations	- Enlargement (positive integer scale factor) - Enlargement (fractional scale factor) - Enlargement (negative scale factor) - Reflection - Rotation - Translation - Describe a transformation - Find the result of a series of transformations - Invariant points and lines (E)	- Retrieval in class starter - Prior knowledge whiteboard questions - End of topic test intervention	- Key vocabulary - True and False Tasks - Problem Solving Tasks - Questioning tasks - Key words: enlargement, scale factor of enlargement, centre of enlargement, similar shapes, orientation, rotation, centre of rotation, clockwise, anti-clockwise, reflection, mirror line, equation of a line, vertex,	- Personal skills - Thinking and problem solving - Working together and communicating - Fundamental skills - Using numbers effectively - Using language effectively - Careers: architecture, construction, engineering, technology,	- Plenary True and False Tasks - Peer and self-assessment - Feedback and reflective practise - End of topic tests - End of term tests

				congruent, translation, column vector, invariant point	computing, art, design, science, maths, navigation, transportation, manufacturing, trades	
HT 6	Revision & Exams					