

Y11	
HT1	Expected outcomes
Number	Factors, multiples and primes
	Prime factorisation, HCF and LCM
	Square and cube numbers
	Powers, roots and negative indices
	Fractional indices
	Irrational numbers and surds
	Four operations with surds
	Simplify surds (E)
	Expand single brackets with surds (E)
	Rationalise the denominator
	Expand double brackets with surds
	Rationalise the denominator with more complex denominators (E)
	Solve problems with surds
Geometry and measures	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 (E)
	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
	Assessment 1. 18. Pythagoras and trigonometry plus feedback
Algebra	Use one value to find another
	Introduction to simultaneous equations
	Solve simultaneous equations using graphs
	Solve simultaneous equations (no adjustments)
	Manipulating equations
	Solve simultaneous equations (adjust one)
	Solve simultaneous equations (adjust both) (E)
	Solve simultaneous equations by substitution (E)
	Solve problems with simultaneous equations
	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)
Ratio, proportion and rates of change	MOCK 2: TBC (Paper 1 Non-calc)
	Solve problems with ratio
	Direct proportion
	Best buy problems
	Conversion graphs
	Exchange rates
	Inverse proportion
	Direct proportion equations (E)
	Complex direct proportion equations (E)
	Inverse proportion equations (E)
	Direct and inverse proportion graphs (E)
HT2	Small Steps (objectives)
Geome try and measu res	Isometric drawings
	Plans and elevations
	Volume of a cylinder
	Volume of a sphere
	Volume of cones and pyramids
	Surface area of a sphere
	Surface area of a cylinder (E)
	Surface area of pyramids (E)
	Surface area of cones (E)
	Volume and surface area of a frustum (E)
	Convert metric units of area and volume
	MOCK 2: TBC (Paper 2 Calc)
	Identify similar shapes
	Find unknown lengths and angles in similar shapes
	Identify similar triangles
	Solve problems with similar shapes
	Prove a pair of triangles are similar (E)
	Areas of similar shapes
	Volumes of similar shapes
	Solve problems with area and volume in similar shapes
	Similarity and congruence
	Congruent triangles
	Prove a pair of triangles are congruent (E)
Algebr a	Describe and continue arithmetic and geometric sequences
	Explore other sequences
	Describe and continue sequences

	Explore sequences with algebraic terms
	Describe and continue sequences involving surds (E)
	Generate a sequence given an algebraic rule
	n th term of a linear sequence
	nth term of a quadratic sequence (E)
	Represent numbers algebraically (E)
	Arguments and counterexamples (E)
Number	Algebraic arguments and proof
	Numbers greater than 1 in standard form
	Numbers between 0 and 1 in standard form
	Adjust a number to standard form
	Multiply and divide numbers in standard form (E)
	Add and subtract numbers in standard form (E)
Geometry and measures	Solve problems with standard form
	Area and circumference of a circle
	Fractional parts of a circle (area)
	Area of a sector (E)
	Fractional parts of a circle (perimeter)
	Arc length and perimeter (E)
	Area and perimeter of compound shapes with circles
	Solve problems with circles
	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
CHRISTMAS	
HT3	Small Steps (objectives)
	MOCK 3: Dates..... (3 papers, NC + 2C)
Probability	Set notation
	Venn diagrams
	Probabilities from Venn diagrams
	Solve problems with Venn diagrams

	Conditional probability (Venn diagrams and two-way tables) (E)
Geometry and measures	Solve problems with vectors
	Ratios with vectors (E)
	Collinear points using vectors (E)
	Geometric arguments and proofs with vectors (E)
Algebra	Function machines
	Write an expression or formula from a function machine
	Function notation
	Composite functions
	Inverse functions
	Quadratic graphs
	Cubic graphs
	Reciprocal graphs
	Exponential graphs
	Trigonometric graphs (E)
	Recognise and sketch graphs
	Translation of a graph (E)
	Reflection of a graph (E)
Algebra	Solve equations
	Form and solve equations
	Form and solve equations with unknowns on both sides (E)
	Solve inequalities
	Form and solve inequalities (E)
	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 problems with simultaneous equations
	Solve simultaneous equations (one linear, one non-linear) (E)
	Solve a pair of simultaneous equations involving algebraic constants for a third unknown (E)
	Assessment 6. 9. Equations and formulae plus feedback
Ratio, proportion and	Convert between hours and minutes
	Speed, distance and time
	Interpret distance-time graphs
	Draw distance-time graphs
	Velocity-time graphs

rates of change	Density and pressure
	Convert compound units (E)
HT4	Small Steps (objectives)
Geome try and measu res	Angles in lines and shapes
	Solve problems with angles in parallel lines
	Solve problems with angles and algebra (E)
	Compass points and related angles
	Understand and represent bearings
	Measure and read bearings
	Scale drawings using bearings
	Calculate bearings using angles rules (E)
	Choose appropriate methods to solve problems with right-angled triangles
	Solve bearings problems using Pythagoras and trigonometry (E)
	Sine and cosine rules
	Solve bearings problems using the sine and cosine rules (E)
	Assessment 7. 11. Angles, bearings and trigonometry plus feedback
	Use geometrical equipment
	Construct triangles
	Construct polygons (E)
	Construct an angle bisector
	Construct a perpendicular bisector
	Construct a perpendicular from or to a point
	Locus of distance from a point and a straight line
	Locus equidistant from two points and perpendicular bisectors
	Locus equidistant from two lines and angle bisectors
	Solve problems with loci
	Enlargement (positive integer scale factor)
	Enlargement (fractional scale factor)
	Enlargement (negative scale factor)
	Line symmetry and rotational symmetry
	Reflection
	Rotation
	Translation
	Describe a transformation
	Find the result of a series of transformations (E)
EASTER	
HT5	Small Steps (objectives)

Revision and Commu nication	Revision plan
Revisio n	
EXA MS	

<https://www.gov.uk/government/publications/national-curriculum-in-england-mathematics-programmes-of-study/national-curriculum-in-england-mathematics-programmes-of-study#key-stage-4>