

Y10	
HT1	Expected outcomes
Geometry and measures (optional block)	Step 1 Identify hypotenuse, opposite and adjacent sides
	Step 2 Use the tangent ratio to find unknown side lengths
	Step 3 Use sine and cosine ratios to find unknown side lengths
	Step 4 Use sine, cosine and tangent ratios to find unknown angles
	Step 5 Choose the right method
	Step 6 Key angles in right-angled triangles (E)
	Step 7 Trigonometry in 3-D shapes (E)
Algebra	Substitution
	Collect like terms
	Simplify expressions
	Addition and subtraction laws for indices
	Laws of indices
	Powers of powers
	Expand a single bracket
	Factorise into a single bracket
	Assessment 1. 1. Algebraic manipulation plus feedback
	Solve equations
	Solve fractional equations
	Solve equations with unknowns on both sides
	Understand inequalities
	Solve inequalities
	Represent solutions to inequalities using set notation (E)
	Change the subject of a simple formula
	Change the subject of a known formula
	Change the subject of a complex formula (E)
	Change the subject where the subject appears more than once (E)
	Expand double brackets
	Expand triple brackets
	Factorise quadratic expressions (positive only)

	Factorise quadratic expressions
	Factorise more complex quadratic expressions (E)
	Difference of two squares (E)
	Solve quadratic equations equal to 0
	Solve quadratic equations by factorisation
	Solve more complex quadratic equations by factorisation (E)
	Complete the square
	Solve quadratic equations by completing the square (E)
	Complete the square with more complex quadratic expressions (E)
	Solve quadratic equations using the quadratic formula
	Quadratic graphs of the form $y=x^2+a$
	Assessment 2. 2. Equations, inequalities and formulae plus feedback
	Problem solving / catch up
HT2	Small Steps (objectives)
Number	Percentage of an amount
	Percentage increase and decrease
	Repeated percentage change (E)
	Express one number as a fraction or a percentage of another
	Express a change as a percentage
	Find the original value after a percentage change
	Simple interest
	Compound interest (E)
	Choose appropriate methods to solve percentage problems
	Maths Week (15-23 Nov)
Ratio, proportion and rates of change	Equivalent ratios
	Share in a ratio (given total, one part or difference)
	Share in a ratio (total given)
	Share in a ratio (part or difference given)
	Link ratios and fractions
	Combine a set of ratios (E)
	Share in a ratio (algebraically) (E)
	Solve problems with ratio and algebra
	Ratios and scales

Number	Fraction of an amount
	Increase or decrease an amount by a fraction
	Use a fraction to find the whole
	Equivalent fractions and mixed numbers
	Add and subtract fractions
	Multiply and divide fractions
	Solve problems with fractions
	Add and subtract algebraic fractions
	Multiply algebraic fractions
	Divide algebraic fractions
	Simplify algebraic fractions
	Add and subtract more complex algebraic fractions (E)
	Multiply and divide more complex algebraic fractions (E)
	Solve equations with algebraic fractions (E)
	Assessments 3,4: 1-6: Summative WRM Term 1
	Problem solving / catch up / move on to HT3 content
CHRISTMAS	
HT3	Small Steps (objectives)
Number	Place value for integers and decimals
	Compare and order numbers
	Add and subtract integers and decimals
	Multiply and divide integers and decimals
	Four operations with directed number
	Order of operations
	Related calculations
	Solve multi-step problems
	Convert recurring decimals to fractions
	Convert more complex recurring decimals to fractions (E)
Algebra	Plot straight line graphs
	Find solutions to equations using straight line graphs
	Explore gradients
	$y = mx + c$
	Find the equation of a line from a graph (E)
	Represent solutions to single inequalities on a graph
	Represent solutions to multiple inequalities on a graph (E)
	Find the midpoint of a line segment
	Equation of a straight-line graph given one point and a gradient
	Equation of a straight-line graph given two points (E)
	Equations of perpendicular lines (E)

	Real-life straight-line graphs (E)
	Assessment 5: 8. Straight line graphs + feedback
Probability	Find the probability of a single event
	Use the property that probabilities sum to 1
	List outcomes
	List and count outcomes
	Relative frequency
	Sample spaces for 1 or more events
	Two-way tables and frequency trees
	Independent events
	Tree diagrams for independent events
	Tree diagrams for dependent events (E)
	Conditional probability (Tree diagrams) (E)
Number	Round to decimal places and significant figures
	Estimate answers to calculations
	Use of a calculator
	Error intervals (including truncation) (E)
	Upper and lower bounds
HT4	Small Steps (objectives)
Geometry	Name 2-D and 3-D shapes
	Perimeter of a 2-D shape
	Area of a 2-D shape
	Area of a compound shape
	Recognise and label parts of a circle
	Circumference of a circle
	Area of a circle
	Arc length and perimeter
	Area of a sector
	Volume of a prism
	Volume of a cylinder
	Nets
	Surface area of a prism
	Surface area of a cylinder
Statistics	Averages and range
	Averages from an ungrouped frequency table
	Mean from a grouped frequency table
	Averages from a grouped frequency table
	Use data to compare distributions (E)
	Types of data
	Sampling
	Capture and recapture

	Scatter graphs
	Interpolation and extrapolation (E)
Algebra	Step 1 Quadratic graphs
	Step 2 Intercepts and roots of quadratic graphs (E)
	Turning points
	Cubic graphs
	Approximate solutions to equations using graphs (E)
	Equation of the tangent to a curve
	Estimate the area under a curve (E)
	Equation of a circle
	Equation of a tangent to a circle (E)
	Assessments 6,7: 7-12. Summative WRM Term 2
EASTER	
HT5	Small Steps (objectives)
Geometry and measure	Angles around a point, on a straight line and vertically opposite
	Angles in a triangle and quadrilateral
	Exterior angles of a polygon
	Interior angles of a polygon
	Solve problems with angles in polygons (E)
	Alternate, corresponding and co-interior angles
	Solve problems with angles in parallel lines
	Solve problems with angles and algebra
	Prove geometric facts (E)
Statistics	Pictograms
	Line and bar charts
	Dual and composite bar charts
	Pie charts
	Time-series graphs
	Frequency polygons
	Stem-and-leaf diagrams
	Draw histograms
	Interpret histograms
	Draw cumulative frequency diagrams
	Interpret cumulative frequency diagrams
	Box plots
	Compare distributions using box plots (E)
	Assessment 8: 14. Angles + feedback
Geometry and measure	Understand and represent vectors
	Vector notation
	Translate by a vector
	Vectors multiplied by a scalar
	Add vectors

	Add and subtract vectors
	Solve problems with vectors (E)
	Vector journeys in shapes
	Vectors in quadrilaterals
	Parallel vectors
	Problem solving / catch up / move on to HT3 content
HT6	Small Steps (objectives)
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
	Assessment 9: 17. Factors, powers and surds + feedback
Geometry and measure	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
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)
	Y10 Mock
	Feedback and review
	Work experience
	Problem solving / catch up / feedback
SUMMER	

<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>