



		Autumn Term		Spring Term		Summer Term	
Year 10 Stage 10	Topic Big question / Overview	Investigating properties of shapes Investigate similar triangles in the context of trigonometry. Calculating Exploring powers and roots of numbers, fractional indices, surds, upper and lower bounds. Solving equations and inequalities I Finding solutions using iteration and simultaneous equations.	Mathematical movement I Transformations including enlargements with fractional scale factors. Algebraic proficiency: tinkering Manipulating algebraic fractions and expressions. Proportional reasoning Represent proportional situations using a graph and solve proportional problems.	Pattern sniffing Calculate nth terms for quadratic sequences and understand geometric progressions. Solving equations and inequalities II Solve linear inequalities graphically and use set notation. Calculating space Solve problems with surface area and volume of 3D shapes.	Conjecturing Understand, use and prove standard circle theorems. Algebraic proficiency: visualising I Create and use graphs of non-standard functions, investigating gradients and areas under graphs.	Exploring fractions, decimals and percentages Convert recurring decimals to fractions and solve problems involving repeated percentage change. Solving equations and inequalities III Solve quadratic equations algebraically and graphically. Understanding risk Solve probability problems using Venn diagrams, two-way tables and tree diagrams.	Analysing statistics Construct cumulative frequency graphs, box plots, and analyse data sets. Algebraic proficiency: visualising II Know properties of perpendicular lines through the algebra and understand the equation of a circle. Mathematical movement II Explore and solve problems with vectors.
	Disciplinary knowledge/skills	Reasoning and problem solving with numbers and geometric calculations.	Problem solving involving proportionality, algebraic manipulation.	Reasoning and problem with sequences, inequalities, graphs, and 3D shapes.	Investigating new concepts linking circles and angles. Extending knowledge of graphs.	Developing links with numbers, algebra and graphs.	Representing and interpreting data, investigating circles and vectors.
	New vocabulary	Opposite Adjacent Hypotenuse Trigonometry Function Sine Cosine Tangent Index, Indices Standard form Inequality Truncate, Round Surd Decimal search Iteration Simultaneous equations Substitution Elimination	Perpendicular bisector Scale Factor Similar Congruent Invariance Transformation Rotation Reflection Translation Enlargement Equation Expression Expand Linear Quadratic Difference of two squares Binomial Factorise Direct proportion Inverse proportion Multiplier	Term nth term Generate Quadratic First (second) difference Geometric Progression (Linear) inequality Variable Solution set Integer Set notation Region (Composite) solid Sphere, Pyramid, Cone Perpendicular (height), (slant height) Surface area Volume Congruent, congruence Similarity, similar shapes, similar figures	Radius, radii Tangent Chord Theorem Conjecture Derive Prove, proof Counterexample Function, equation Linear, non-linear Quadratic, cubic, reciprocal, exponential Parabola, Asymptote Gradient, y-intercept, x-intercept, root Rate of change Sketch, plot Kinematic Speed, distance, time Acceleration, deceleration	Percentage change, percentage increase, percentage increase Compound interest, Simple interest Terminating decimal, Recurring decimal (Exponential) growth, decay Rearrange Deduce x-intercept Root Tree diagrams Enumerate Set Conditional probability Venn diagram	Categorical data, Discrete data Continuous data, Grouped data Central tendency Mean, median, mode Spread, dispersion, consistency Range, Interquartile range Skewness Centre (of a circle) Radius Tangent Vector Scalar Constant Magnitude