	Objective GCSE H
Integers, powers and roots	Use index notation for negative integer indices.
	Use index notation and index laws for simple fractional powers
	Convert from one base number to another
	Simplify surds to the form a√b
	Expand brackets containing surds
	Rationalise the denominator of a surd such as 2/√5
	Rationalise a denominator in the form a√b, a + √b and a + b√c.
	Construct an algebraic proof of number properties.
FDP	Calculate percentage increases and decreases
	Calculate the percentage change
	Calculate reverse percentages
	Calculate compound interest and depreciation
	Convert recurring decimals to fractions and fractions to recurring decimals
Data	**Interpret frequency tables and frequency polygons**
	Construct and interpret a cumulative frequency diagrams
	Construct and interpret box plots
	Construct and interpret a histogram
Simplifying and substituting	Factorise quadratics of the form $ax^2 + bx + c$ where a=1
	Factorise quadratics of the form $ax^2 + bx + c$ where a>1
	Write quadratic expressions in completed square form
	Understand the difference between an expression, equation and identity
	Equate co-efficient in identities
	Multiply and divide algebraic fractions
	Add and subtract algebraic fractions
	Simplify algebraic fractions
	Expand the product of more than two binomials
Ratio	Simplify two pairs of ratio when given a common term
	Compare lengths using ratio notation and ratio tables
	Compare areas and volumes using ratio notation and ratio tables
	Solve complex problems involving ratio and algebra
	Solve two-way ratio problems
	Solve problems involving direct and inverse proportion, including graphical and algebraic representations
Rou	Use inequality notation to specify error intervals due to truncation or rounding
	Apply and interpret limits of accuracy, including upper and lower bounds
Seq	Understand and recognise the different types of sequences
	Find the nth tern rule for linear and quadratic sequences
Lines, angles	Calculate the area and circumference of a cirrcle
	Calculate the area of a sector and length of an arc
	Understand and recognise the properties of quadrilaterals
	Calculate the sum of the interior and exterior angles in polygons
ea an in	Rearrange formulae where the subject appears once

Re arra ge	Rearrange formulae where the subject appears more than once
Pythagoras and Trigonometry	**Use Pythagoras' Theorem and Trigonometry in 3D**
	Use the formula for the area of non-right angled triangles **Use the sine rule to calculate missing sides and angles in non-right angled triangles** **Use the cosine rule to calculate missing sides and angles in non-right angled triangles**
	Sketch the graphs of y=sin(x), cos(x) and tan(x) **Use the trigonometry graphs to solve equations involving six(x), cos(x) and tan(x)**
Forming and solving equations	**Use an iterative formula to find an approximate solution to an equation** **Show how to rearrange an equation to produce a specified iterative formula**
	Factorise and solve quadratics of the form $ax^2 + bx + c = 0$ where a=1 **Factorise and solve quadratics of the form $ax^2 + bx + c = 0$ where a>1** **Solve quadratic equations by completing the square** **Solve quadratics using the quadratic formula** **Solve fractional linear equations with an unknow in the denominator**
	Solve linear simultaneous equations
	Solve a pair of simultaneous equations where one is non-linear
Vol um	Calculate the volume of spheres, cones and cylinders **Calculate the volume and surface area of a frustum**
Probabi lity	Use probability trees to find probabilities of two successive independent events **Calculate with probability and probability trees in an algebraic context** **Calculate conditional probabilities using tree diagrams and Venn diagrams** **Use systematic listing strategies, including the product rule for counting**
Sequences, functions and graphs	Use y= mx+x to identify parallel and perpendicular lines Find the equation of a line through either two points or one point and a gradient Find the equation of a perpendicular line Sketch the graphs of quadratic, cubic and reciprocal functions **Recognise, sketch and interpret exponential and trigonometric graphs** Identify roots, intercepts and turning points of quadratics graphically Identify the roots and intercepts of a quadratic algebraically **Use completing the square to calculate the turning point of a quadratic graph**
	Transform graphs using reflections and translations
	Recognise and use the equation of a circle centred at the origin **Find the equation of a tangent to a circle at a given point**
	Interpret simple expressions as functions with inputs and outputs **Interpret the reverse process as the inverse function** **Interpret the succession of two functions as a composite function**
Circl es	Recognise tangents, arcs, sectors, segments, radii and diameters in circle **Apply and use the circle theorems** **Prove the circle theorems**
	Interpret linear distance time and velocity time graphs

Measures	Calculate speed from a distance time graph and acceleration from a linear velocity time graph **Calculate average acceleration from a non- linear velocity time graph** **Calculate instantaneous acceleration from a curved velocity time graph** **Calculate the distance travelled by calculating the area under a velocity time graph**
Inequalities	Solve linear inequalities (with an unknown on both sides, and double bounded) Represent the solution set of an inequality on a number line
	Represent linear inequalities graphically **Solve a set of linear inequalities in two variables and represent the solution as a region of a graph**
	Solve quadratic inequalities
Transformations	Enlarge a shape by a positive scale factor (including fractions) Enlarge a shape by a positive scale factor (including fractions) from a centre **Enlarge a shape by a negative scale factor** **Identify both the changes and invariance achieved by combinations of rotations, reflections and transformations.**
	Add and subtract vectors and multiply vectors by a scalar, in both diagrammatic and column form **Understand the relationship between parallel vectors** **Use vectors to construct geometric arguments**