

Key Stage 4 Overview

	Module 1	Module 2	Module 5	Module 3	Module 4	Module 6
Year 9	<p>University Challenge:</p> <p>Context:</p> <p>“Getting Down to (geometric) Business.”</p> <p>Skills:</p> <p>Using the concepts of area, perimeter and missing dimensions to evaluate triangles, quadrilaterals and compound shapes.</p> <p>Calculating with and converting standard form numbers, normal numbers, primes, factors and multiples, and powers and roots.</p> <p>Estimating appropriately by using decimal places and significant figures applied to a context and calculating upper and lower bounds.</p> <p>Plotting, reading, writing and solving inequalities algebraically and graphically.</p>	<p>University Challenge:</p> <p>Context:</p> <p>“Gimme five! (and six and seven and eight and...”</p> <p>Skills:</p> <p>Calculate percentages of quantities and find one quantity as a percentage of another, including using multipliers and working with single and combined (compound) percentage changes in a financial context, e.g. savings accounts.</p> <p>Represent numerical and proportional relationships in multiple formats e.g. decimal multipliers and use relational operations e.g. inverse operations in reverse percentage problems.</p> <p>To Add, subtract, divide and multiply fractions. Conversion between improper and mix numbers.</p>	<p>University Challenge:</p> <p>Context:</p> <p>“The (algebraic) building blocks of everything.”</p> <p>Skills:</p> <p>Substitute into expressions and formulae; simplify, factorise and rearrange expressions and formulae, including brackets, powers and quadratic expressions and equations.</p> <p>Plotting, reading, writing and solving inequalities algebraically and graphically.</p> <p>Recognise, identify and generate sequences by using the term-to-term rule and the nth term rule, including linear and quadratic sequences.</p>	<p>University Challenge:</p> <p>Context:</p> <p>“Putting things in proportion.”</p> <p>Skills:</p> <p>Use ratio notation to divide quantities, reduce ratios to simplest form, and solve direct and inverse proportional reasoning problems.</p> <p>Apply proportional reasoning techniques (such as the red arrows) to a variety of contexts to produce prescribed outcomes, e.g. finding which retail deal represents the best value for money.</p>	<p>University Challenge:</p> <p>Context:</p> <p>“Charting progression.”</p> <p>Skills:</p> <p>Use scatter graphs and other forms of statistical analysis to predict values for a certain set of data.</p> <p>Use the form $y=mx+c$ to draw, compare and identify linear graphs, including parallel and perpendicular graphs. Plot quadratic functions from their equation and vice versa.</p> <p>Calculating mean, median, mode and range from small sets of data and reading quartiles & plotting box plots from cumulative frequency diagrams).</p> <p>To complete tables and to plot the following graphs for the given information: cumulative frequency, frequency polygon and frequency density.</p> <p>To Design a suitable questionnaire for different types of data.</p>	<p>University Challenge:</p> <p>Context:</p> <p>“Transforming the shape of your life.”</p> <p>Skills:</p> <p>Using the concepts of faces, edges & vertices, volume, planes and plans & elevations to evaluate a range of 3D shapes (cuboids, prisms, pyramids, cones, spheres and compound shapes).</p> <p>Identify congruent and similar shapes, transform congruent shapes by reflecting, rotating, translating and enlarging, and identify these transformations on coordinate axes.</p>