Beamont Collegiate Academy Curriculum Map

Year 11 (Foundation) Mathematics

Intent	Implementation	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
Knowledge	Units Taught	• Fractions, Percentages & Ratio • Using and Applying Algebra	• Area and Volume • Angles	• Proportional Understanding • Statistics	• Probability • Linear and Non-Linear Graphs • Transformations	• Examination Readiness	
	Sequencing	Students begin the half term by enhancing their knowledge of fractions, percentages and ratio. The skills that were taught in Year 10 in isolation are recapped, and brought together so that students can problem solve using these number skills. In the second half of the half term, students deepen their algebraic understanding. They will first secure their knowledge of expanding and factorising expressions before solving linear equations. Students will also learn to form and solve equations in practical situations.	This half term students are focusing on developing their geometric understanding. Students will begin by recapping Year 10 knowledge of area of 2D shapes, before looking at multistep problems involving costings. Students will be required to use many of the number skills they have developed in term 1. The second half of the term students will recap the work on Angles from Year 10, before looking at multistep angle problems. Students will also be required to draw on their knowledge of forming and solving equations from the first half term.	In the Spring 1 half term, students deepen their understanding of proportion in various contexts. They will look at how proportion is used to work with recipes, convert between currencies, as well as in more general contexts. Students will also formally meet inverse proportion for the first time. Students will also recap some of the work from term 1 on percentages. Following this, students will spend a number of lessons looking at speed distance and time calculations. They will be required to draw on their basic knowledge from Year 10, to solve problems involving speed. The second half of the half term, students will recap Year 10 work on Statistics. This includes analysing data, representing data and importantly, interpreting data.	In Spring 2, students will learn about probability. This will draw on knowledge from half term 1 on fractions and percentages. Students will look at a number of probability diagrams, some of which they have met in Year 10, but others, they will be meeting for the first time. The second half of the half term, students will learn how to represent linear and non-linear functions graphically. They will draw on their knowledge of algebraic equations from half term 1, as well as recapping work on linear and non-linear sequences from Year 10. In the final part of this half term, students will study a short unit on transformations, where they will learn to rotate, reflect, translate and enlarge shapes. Some of this knowledge will have been met previously at Key Stage 3.		

	Substantive Knowledge *Declarative : "I Know that.."* *Proceedural : "I Know How"* *Conditional : "I Know When.."*	<u>Fractions, Perc. & Ratio</u> • Percentages and Fractions of Amounts • Compound Interest • Reverse Percentages • Working with Fractions • Solving Ratio Problems • Problem Solving with FPR <u>Using & Applying</u> Algebra • Writing and using Expressions • Expand & Factorise • Laws of Indices • Inequalities • Solving Equations • Forming & Solving	<u>Area and Volume</u> • Perimeter of 2D Shapes • Area of 2D Shapes • Compound Area • Costing Problems • Area of a Circle • Circumference of a Circle • Volume <u>Angles</u> • Angles in a Triangle • Angles in a Quad. • Angles in Parallel Lines • Multistep Problems • Bearings • Pythagoras	<u>Proportional Understanding</u> • Direct Proportion • Exchange Rates • Recipe Problems • Inverse Proportion • Speed Distance Time <u>Statistics</u> • Averages • Pie Charts • Frequency Tables • Frequency Polygons • Scatter Graphs	<u>Probability</u> • Basic Probability • Expected Outcomes • Probability Diagrams • Combined Events • Probability Tree Diagrams <u>Linear and Non-Linear Graphs</u> • Linear Sequences • Linear Graphs • Non-linear Sequences • Non-Linear Graphs <u>Transformations</u> • Congruency • Rotation • Reflection • Translation and Vectors • Enlargement		
Assessment	Summative assessment	Students will be assessed via a small modular assessment on the topic of FPR, followed by a more formal PPE examination at the end of the half term.	Students will be assessed via a small modular assessment on the topic of Area and Volume, followed by more formal PPE examinations at the end of the half term.	Students will be assessed via a small modular assessment on the topic of proportion, followed by a more formal PPE examination at the end of the half term.	Students will be assessed via formal PPE examinations during this half term.		

Links	Main Links across the Curriculum	<u>Fractions, Perc. & Ratio</u> Proportional Reasoning Fractions Decimals Percentages equivalence <u>Using & Applying Algebra</u> Angles Area	Writing Expressions Solving Equations	<u>Proportional Understanding</u> Percentages and Reverse Percentages Ratio	<u>Probability</u> Fractions, Decimals and Percentages Working with Fractions <u>Graphs</u> Sequences Linear Equations		
	Cross-Curricular Links	Standard form is used and covered in Science. Technology requires extensive use of measure in decimal form. Science using many of the algebraic skills, including rearranging formulae	Angles and measurements used in Design Technology. Bearing and scaling used in geography.	Table and graphs analysis in subjects for example: Geography, Business studies			
	Links to the Real World / Careers / P.D.	Number skills are used in everyday life, Manual trades, Banking and finance.	Angles are used in Architecture, navigation.	Proportion and Compound Measure is used in the Building industry, Catering and Medicine	Straight line graphs are used so show information in business and public health data. Ie. Covid-19 information.		
Vocabulary	Key words	<u>Fractions, Perc. & Ratio</u> Percentage Change Interest Multiplier • <u>Using & Applying</u> Algebra Expand Factorise • Simplify Substitute •	<u>Area and Volume</u> • Area • Compound • Volume • Cross Section • Solid • Circumference <u>Angles</u> • Regular/irregular • Interior/Exterior • Polygon names • Bearing	<u>Proportional Understanding</u> Proportion Direct Inverse Unitary • Parts <u>Statistics</u> Frequency table Average Mean Median Range Mode Grouped data	<u>Probability</u> -Random -Even -Biased -Mutually exclusive -Sample space <u>Linear and Non-Linear Graphs</u> Gradient -Function -Y Intercept -Linear -Parallel <u>Transformations</u> Reflect -Rotate -Translate -Enlarge -Centre		