

Beths Grammar School KS3 Mathematics Curriculum Map – Year 9

Term	INTENT	IMPLEMENTATION	IMPACT
	<p>Substantive Knowledge</p> <p>This is the specific, factual content for the topic, which should be connected into a careful sequence of learning.</p>	<p>Disciplinary Knowledge (Skills)</p> <p>This is the action taken within a particular topic in order to gain substantive knowledge.</p>	<p>Assessment opportunities</p> <p>What assessments will be used to measure student progress? Evidence of how well students have learned the intended content.</p>
<p>Autumn Term 1A Year 9</p>	<p><u>Intent</u></p> <p><u>Chapter 1: Indices and Standard Form</u></p> <ul style="list-style-type: none"> • 1.1 Positive Indices and Laws of Indices • 1.2 Zero and Negative Indices • 1.3 Standard Form <p><u>Chapter 2: Proportion</u></p> <ul style="list-style-type: none"> • 2.1 Direct Proportion • 2.2 Inverse Proportion <p><u>Chapter 3: Linear Equations in Two Variables</u></p> <ul style="list-style-type: none"> • 3.1 Changing the Subject of a Formula • 3.2 Linear Equations in Two Variables • 3.3 Solving Simultaneous Linear Equations in Two Variables by the Graphical Method • 3.4 Solving Simultaneous Linear Equations in Two Variables by the Substitution Method • 3.5 Solving Simultaneous Linear Equations in Two Variables by the Elimination Method • 3.6 Solving Problems Using Simultaneous Equations 	<p><u>Chapter 1: Indices and Standard Form</u></p> <ul style="list-style-type: none"> • State and apply the laws of indices • Simplify an expression involving indices • State and apply the definitions of zero and negative indices • Express and compare numbers in standard form • Calculate using numbers in standard form <p><u>Chapter 2: Proportion</u></p> <ul style="list-style-type: none"> • Understand the concepts of direct proportion and inverse proportion • Determine whether two quantities are in direct proportion or inverse proportion from a graph, a table or an equation connecting the two quantities • Solve practical problems involving direct proportion and inverse proportion <p><u>Chapter 3: Linear Equations in Two Variables</u></p> <ul style="list-style-type: none"> • Rearrange a formula to change the subject • Understand the properties of a linear equation in two variables • Draw the graph of a linear equation in two variables • Understand the concept of simultaneous equations and their solutions 	<ul style="list-style-type: none"> • In class teacher assessment through Q&A • End of chapter mini test (with peer marking) • Chapter revision exercise via textbook • End of term review exercises via textbook • End of term formal assessments • Mastery homework with use of mymaths.co.uk • Mymaths topic codes: <ul style="list-style-type: none"> 1.1: 1033 1.2: 1951 1.3: 1051, 1049, 1050 2.1: 1948 2.2: 1949, 1048 3.1: 1170, 1171 3.2: 1396 3.3: 1319 3.4: n/a 3.5: 1176, 1175, 1174 3.6: n/a

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		<ul style="list-style-type: none"> • Solve simultaneous linear equations in two variables using the graphical method, the substitution method, and the elimination method • Recognise the approximate nature of the graphical method • Apply simultaneous linear equations in two variables to solve problems 	
Autumn Term 1B Year 9	Intent Why is this taught now?	<u>Chapter 4: Quadratic Expressions</u> <ul style="list-style-type: none"> • Manipulate quadratic expressions • Expand the product of two linear algebraic expressions • Factorise quadratic expressions of the form $ax^2 + bx + c$ using the multiplication frame • Expand and factorise algebraic expressions using special products <u>Chapter 5: Non-Linear Graphs</u> <ul style="list-style-type: none"> • Interpret and draw distance–time graphs, velocity–time graphs and other graphs that show rates of change • Use graphs for rates of change to solve problems • Interpret and draw the graph of a quadratic function $y = ax^2 + bx + c$ • State the properties of quadratic graphs • Interpret and draw exponential, reciprocal and piece-wise graphs • State the properties of exponential and reciprocal graphs 	<ul style="list-style-type: none"> • In class teacher assessment through Q&A • End of chapter mini test (with peer marking) • Chapter revision exercise via textbook • End of term review exercises via textbook • End of term formal assessments • Mastery homework with use of mymaths.co.uk • Mymaths topic codes: 4.1: n/a 4.2: 1150 4.3: 1157, 1156 4.4: 1150 4.5: 1157 5.1: 1322 5.2: 1168, 1959 5.3: n/a
	<u>Chapter 4: Quadratic Expressions</u> <ul style="list-style-type: none"> • 4.1 Quadratic Expressions • 4.2 Expansion of the Product of Algebraic Expressions • 4.3 Factorisation of $ax^2 + bx + c$ • 4.4 Special Products of Algebraic Expressions • 4.5 Factorisation by Using Special Products of Algebraic Expressions <u>Chapter 5: Non-Linear Graphs</u> <ul style="list-style-type: none"> • 5.1 Graphs for Constant Rates of Change • 5.2 Quadratic Graphs • 5.3 Exponential, Reciprocal and Piece-wise Graphs 		
Spring Term 2A Year 9	Intent Why is this taught now?	<u>Chapter 6: Geometric Construction & Loci</u> <ul style="list-style-type: none"> • Construct perpendicular bisectors and angle bisectors using a pair of compasses and a ruler • Recognise the properties of perpendicular bisectors and angle bisectors 	<ul style="list-style-type: none"> • In class teacher assessment through Q&A • End of chapter mini test (with peer marking)
	<u>Chapter 6: Geometric Construction & Loci</u>		

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	<ul style="list-style-type: none"> 6.1 Perpendicular Bisectors, Perpendicular Lines and Angle Bisectors 6.2 Construction of Triangles and Quadrilaterals 6.3 Loci <p><u>Chapter 7: Pythagoras' Theorem</u></p> <ul style="list-style-type: none"> 7.1 Pythagoras' Theorem 7.2 Applying Pythagoras' Theorem to Solve Problems 7.3 Converse of Pythagoras' Theorem 	<ul style="list-style-type: none"> Construct a perpendicular to a line from a point or at a given point using a pair of compasses and a ruler Construct triangles and quadrilaterals using a pair of compasses, a ruler and a protractor Construct and describe loci for the paths of points on a plane <p><u>Chapter 7: Pythagoras' Theorem</u></p> <ul style="list-style-type: none"> State Pythagoras' Theorem Apply Pythagoras' Theorem to solve problems involving right-angled triangles Apply the converse of Pythagoras's Theorem to determine whether a triangle has a right angle Recognise and use the perpendicular distance from a point to a line as the shortest distance to the line 	<ul style="list-style-type: none"> Chapter revision exercise via textbook End of term review exercises via textbook End of term formal assessments Mastery homework with use of mymaths.co.uk Mymaths topic codes: <ul style="list-style-type: none"> 6.1: 1089 6.2: 1090, 1089 6.3: 1147 7.1: 1112 7.2: 1112 7.3: n/a
<p>Spring Term 2B Year 9</p>	<p><u>Intent</u> Why is this taught now?</p> <p><u>Chapter 8: Congruence, Similarity and Enlargement</u></p> <ul style="list-style-type: none"> 8.1 Congruent Triangles 8.2 Similarity 8.3 Enlargement of a Plane Figure 8.4 Scale Drawing <p><u>Chapter 9: Trigonometry and Bearings</u></p> <ul style="list-style-type: none"> 9.1 Finding Unknown Sides in a Right-angled Triangle 9.2 Finding Unknown Angles in a Right-angled Triangle 9.3 Bearings 	<p><u>Chapter 8: Congruence, Similarity and Enlargement</u></p> <ul style="list-style-type: none"> State the conditions for two triangles to be congruent Identify congruent triangles Solve problems involving congruence Understand the idea of similarity State the properties of similar polygons Solve problems involving similarity Enlarge a plane figure by a scale factor Interpret scale drawings <p><u>Chapter 9: Trigonometry and Bearings</u></p> <ul style="list-style-type: none"> State the definitions of trigonometric ratios (sine, cosine and tangent) of acute angles Use trigonometric ratios to find unknown sides and angles in right-angled triangles Apply the trigonometric ratios to solve problems Measure and calculate bearings 	<ul style="list-style-type: none"> In class teacher assessment through Q&A End of chapter mini test (with peer marking) Chapter revision exercise via textbook End of term review exercises via textbook End of term formal assessments Mastery homework with use of mymaths.co.uk Mymaths topic codes: <ul style="list-style-type: none"> 8.1: 1148 8.2: 1119 8.3: 1099 8.4: 1117

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		<ul style="list-style-type: none"> • Solve problems involving bearings 	<p>9.1: 1133 9.2: 1131 9.3: 1086</p>
<p>Summer Term 3A Year 9</p>	<p>Intent Why is this taught now?</p> <hr/> <p><u>Chapter 10: Volume & Surface Area Of Pyramids & Cones</u></p> <ul style="list-style-type: none"> • 10.1 Pyramids • 10.2 Cones <p><u>Chapter 11: Data Analysis</u></p> <ul style="list-style-type: none"> • 11.1 Mean and Range • 11.2 Median • 11.3 Mode 	<p><u>Chapter 10: Volume & Surface Area Of Pyramids & Cones</u></p> <ul style="list-style-type: none"> • Visualise the idea of surface areas of pyramids and cones using nets • Find the surface areas and volumes of pyramids and cones • Find the surface areas and volumes of composite solids involving prisms, cylinders, pyramids, and cones <p><u>Chapter 11: Data Analysis</u></p> <ul style="list-style-type: none"> • Calculate the mean, median, mode and range of ungrouped data • Calculate the mean of grouped data • Make comparisons between sets of data 	<ul style="list-style-type: none"> • In class teacher assessment through Q&A • End of chapter mini test (with peer marking) • Chapter revision exercise via textbook • End of term review exercises via textbook • End of term formal assessments • Mastery homework with use of mymaths.co.uk • Mymaths topic codes: 10.1: n/a 10.2: n/a 11.1: 1254, 1201 11.2: 1203 11.3: 1200, 1192
<p>Summer Term 3B Year 9</p>	<p>Intent Why is this taught now?</p> <hr/> <p><u>Chapter 12: Probability</u></p> <ul style="list-style-type: none"> • 12.1 Introducing Probability • 12.2 Probability of Single Events • 12.3 Probabilities of Simple Combined Events • 12.4 Mutually Exclusive Events 	<p><u>Chapter 12: Probability</u></p> <ul style="list-style-type: none"> • Understand probability as a measure of chance • Define the terms sample space, outcome and event • List the sample space for a simple chance situation • Find the probability of a single event • Calculate the probability of a simple combined event using a sample space diagram • Identify mutually exclusive events 	<ul style="list-style-type: none"> • In class teacher assessment through Q&A • End of chapter mini test (with peer marking) • Chapter revision exercise via textbook • End of term review exercises via textbook

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	<p><u>Chapter 13: Sets and Venn Diagrams</u></p> <ul style="list-style-type: none">• 13.1 Introducing Sets• 13.2 Venn Diagrams and Complement of A Set• 13.3 union and Intersection Of Sets	<ul style="list-style-type: none">• Understand and apply the addition of probabilities for two mutually exclusive events <p><u>Chapter 13: Sets and Venn Diagrams</u></p> <ul style="list-style-type: none">• use set language and set notation to describe a set of objects, its elements, and its subsets• draw Venn diagrams to represent sets and their elements• define complement of a sets and represent it using a Venn diagram• define union and intersection of two sets and represent them using a Venn diagram• find probabilities using a Venn diagram	<ul style="list-style-type: none">• End of term formal assessments• Mastery homework with use of mymaths.co.uk• Mymaths topic codes:<ul style="list-style-type: none">12.1: 1209, 121012.2: 121012.3: 119912.4: n/a13.1: n/a13.2: n/a13.3: 1921, 1922, 1262
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