

Maths Year 10 Higher Learning Journey 2024-2025

Week	Date	Key Constructs	Component Knowledge	Assessment
1 (Thurs)	05.09.24	Types of Numbers Place value and Rounding	<ul style="list-style-type: none"> Work out the total number of ways of performing a series of tasks Estimate an answer Use place value to answer questions Write a number as the product of its prime factors Find the HCF and LCM of two numbers Use powers and roots in calculations Multiply and divide using index laws Work out a power raised to a power Use negative indices Use fractional Indices Write a number in standard form Calculate with numbers in standard form Understand the difference between rational and irrational numbers Simplify a surd Rationalise a denominator 	Unit 1 – Powers and Roots
2	09.09.24			
3	16.09.24			
4	23.09.24			
5	30.09.24	Angles and geometric proof Polygons Pythagoras Trigonometry	<ul style="list-style-type: none"> Derive and use the sum of angles in a triangle and in a quadrilateral Derive and use the fact that the exterior angle of a triangle is equal to the sum of the two opposite interior angles Calculate the sum of the interior angles of a polygon Use the interior angles of polygons to solve problems Know the sum of the exterior angles of a polygon Use the angles of polygons to solve problems Calculate the length of the hypotenuse in a right-angled triangle Calculate the length of a shorter side in a right-angled triangle Solve problems use Pythagoras' Theorem Use trigonometric ratios to find lengths in a right-angled triangle Use trigonometric ratios to calculate an angle in a right-angled triangle Find angles of elevation and angles of depression Use trigonometric ratios to solve problems Know the exact values of the sine, cosine and tangent of some angles 	Unit 5 – Angles and Trigonometry
6	07.10.24			
7	14.10.24			
8	21.10.24			
Half term				
9	04.11.24	Fractions Ratio Proportional Reasoning Place value and rounding Types of numbers	<ul style="list-style-type: none"> Add, subtract, multiply and divide fractions and mixed numbers. Find the reciprocal of an integer, decimal or fraction. Write ratios in the form 1:n or n:1 Compare ratios Find quantities using ratios Solve problem involving ratios Convert between currencies and measures Recognise and use direct proportion Solve problems involving ratio and proportion Work out percentage increases and decreases Solve real-life problems involving percentages Calculate using fractions, decimals and percentages Convert recurring decimals to a fraction 	Unit 1 – 5 Assessment
10	11.11.24			
11	18.11.24			
12	25.11.24	Revise, Test and RAP unit 1 – 5 Assessment		

13	02.12.24	Graphs	<ul style="list-style-type: none"> Find the gradient and y-intercept from a linear equation Rearrange an equation into the form $y=mx+c$ Compare two graphs from their equations Plot graphs with equations $ax+by=c$ Sketch graphs using the gradient and intercepts Find the equation of a line, given its gradient and one point on the line. Find the gradient of a line through two points Draw and interpret distance-time graphs Calculate average speed from a distance-time graph Understand velocity-time graphs Find acceleration and distance from velocity-time graphs Draw and interpret real-life linear graphs Recognise direct proportion Draw and use line of best fit. Find the coordinates of the midpoint of a line segment. Find the gradient and length of a line segment Find the equations of lines parallel or perpendicular to a given line. Draw quadratic graphs Solve quadratic equations using graphs Identify the line of symmetry of a quadratic graph Interpret quadratic graphs relating to real-life situations Draw graphs of cubic functions Solve cubic equations using graphs Draw graphs of reciprocal functions Recognise a graph from its shape Interpret linear and non-linear real-life graphs Draw the graph of a circle 	Unit 6 – Graphs
14	09.12.24			
15	16.12.24			

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16	06.01.25	Perimeter, area and volume	<ul style="list-style-type: none"> Find the area and perimeter of compound shapes Recall and use the formula for the area of a trapezium Convert between metric units of area Calculate the maximum and minimum possible values of a measurement Convert between metric units of volume Calculate volumes and surface areas of prisms Calculate the area and circumference of a circle Calculate area and circumference in terms of Pi Calculate the perimeter and area of semi circles and quarter circles Calculate arc length, angles and areas of sectors of circles Calculate volume and surface area of a cylinder and sphere Solve problems involving volumes and surface areas Calculate volume and surface area of pyramids and cones Solve problems involving pyramids and cones 	Unit 7 – Area and Volume
17	13.01.25			
18	20.01.25			
19	27.01.25	Coordinates and transformation	<ul style="list-style-type: none"> Draw plans and elevations of 3D solids Reflect a 2D shape in a mirror line Rotate a 2D shape about a centre of rotation Describe reflections and rotations Enlarge shapes by fractional and negative scale factors about a centre of enlargement Translate a shape using a vector Carry out and describe combinations of transformations Draw and use scales on maps and scale drawings Solve problems involving bearings Construct triangles using a ruler and a compass Construct the perpendicular bisector of a line. Construct the shortest distance from a point to a line using ruler and compasses. Bisect an angle using a ruler and compasses Construct angles using a ruler and compasses. Construct shapes made from triangles using a ruler and compasses Draw Locus Use Loci to solve problems 	Unit 1 – 8 Assessment
20	03.01.25			
21	10.02.25			

Half term				
22	24.02.25		Revise, Test and RAP unit 1 – 8 assessment	Unit 1 – 8 Assessment
23	03.03.25	Equations and inequalities	<ul style="list-style-type: none"> Find the roots of quadratic equations Rearrange and solve simple quadratic equations Solve more complex quadratic equations Use the quadratic formula to solve a quadratic equation Complete the square for a quadratic expression Solve quadratic equations by completing the square Solve simple simultaneous equations Solve simultaneous equations for real-life situations Use simultaneous equations to find the equation of a straight line Solve linear simultaneous equations where both equations are multiplied Interpret real-life situations involving two unknowns and solve them. Solve simultaneous equations with one quadratic equation Use real-life situations to construct quadratic and linear equations and solve them. Solve inequalities and show the solution on a number line and using set notation. 	Unit 9 – Equations and inequalities
24	10.03.25			
25	17.03.25			
26	24.03.25	Probability	<ul style="list-style-type: none"> Use the product rule for finding the number of outcomes for two or more events List all the possible outcomes of two events in a sample space diagram. Identify mutually exclusive outcomes and events Find the probabilities of mutually exclusive outcomes Find the probability of an event not happening. Work out the expected results for experimental and theoretical probabilities Compare real results with theoretical expected values to decide if a game is fair Draw and use frequency trees. Calculate probabilities of repeated events Draw and use probability tree diagrams Decide if two events are independent Draw and use tree diagrams to calculate conditional probability Draw and use tree diagrams without replacement Use two-way tables to calculate conditional probability Use Venn Diagrams to calculate conditional probability Use set notation 	Unit 10 – Probability
27	31.03.25			
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28(BH)	21.04.25	Proportional Reasoning	<ul style="list-style-type: none"> Find an amount after repeated percentage change Solve growth and decay problems Calculate rates Convert between metric speed measures Use a formula to calculate speed and acceleration Solve problems involving compound measures Use relationships involving ratio Use direct and inverse proportion 	Unit 11 – Multiplicative Reasoning
29	28.04.25			
30(BH)	06.05.25	Geometric proof	<ul style="list-style-type: none"> Show that two triangles are congruent Know the conditions of congruence Prove shapes are congruent Solve problems involving congruence Use the ratio of corresponding sides to work out scale factors Find missing lengths on similar shapes Use similar triangles to work out lengths in real-life Use the link between linear scale factor and area scale factor to solve problems Use the links between scale factors for length, area and volume to solve problems. 	Unit 12 – Similarity and congruence
31	12.05.25			
32	19.05.25			
Half term				

33	02.06.25		Exam prep	
34	09.06.25		Exam Prep	
35	16.06.25		Annual Exams	
36	23.06.25		Annual Exams	
37	30.06.25		RAP/addressing misconceptions	
38	07.07.25		RAP/ addressing misconceptions	
39	14.07.25		Activities week	

Name:		Summer Yr 9	Autumn	Spring	Summer
Subject Target:		Flightpath			
Annual Exam Grade:		BFL			

Date	Assessment	Flight-path Grade	Action (s) to make progress
	Unit 1 – Number		
	Unit 5 – Angles and Trigonometry		
	Unit 1- 5 Assessment		
	Unit 6 – Graphs		
	Unit 7 – Area and volume		
	Unit 1 – 8 Assessment		
	Unit 9 – Equations and inequalities		
	Unit 10 – Probability		
	Unit 11 – Multiplicative reasoning		
	Unit 12 – Similarity and congruence		
	Annual exam		