

## Rainford High School – Department: Maths

Year 11 Curriculum						
	Term 1		Term 2		Term 3	
Topic	<u>Foundation</u>	<u>Higher</u>	<u>Foundation</u>	<u>Higher</u>	<u>Foundation</u>	<u>Higher</u>
	Bearings and scale drawings Trigonometry Further Quadratics Simultaneous equations Probability Probability Trees Venn Diagrams Vectors Compound Measures Constructions and Loci	Trigonometry Further Quadratics Real life graphs (including SUVAT formulae) Growth and decay Graphs of other functions Inverse and composite functions Simultaneous equations Circle theorems Further Trigonometry Transforming graphs	Volume and Surface Area Real life graphs Growth and decay Graphs of other functions Functions Algebraic Proof	Surface area and volume Compound measures Bearings and scale drawings Probability and Probability trees Venn diagrams Vectors Algebraic proof Constructions and loci	Revision and exam practice	Revision and exam practice
Essential knowledge, skills and understanding	<ul style="list-style-type: none"> <li>Use and interpret maps and scales</li> <li>Measure, draw and solve problems with 3 figure bearings</li> <li>Use sin, cos and tan to find angles and sides in right angled triangles</li> <li>Know the exact values of sin, cos and tan for <math>0^\circ</math>, <math>30^\circ</math>, <math>45^\circ</math>, <math>60^\circ</math> and <math>90^\circ</math></li> <li>Draw graphs of quadratic functions</li> <li>Use quadratic graphs to solve equations</li> <li>Identify turning points graphically</li> <li>Set up and solve linear simultaneous equations</li> <li>Understand and use the probability scale</li> </ul>	<ul style="list-style-type: none"> <li>Use sin, cos and tan to find angles and sides in right angled triangles</li> <li>Know the exact values of sin, cos and tan for <math>0^\circ</math>, <math>30^\circ</math>, <math>45^\circ</math>, <math>60^\circ</math> and <math>90^\circ</math></li> <li>Angles of elevation and depression</li> <li>3D trigonometry</li> <li>Draw graphs of quadratic functions</li> <li>Use quadratic graphs to solve equations</li> <li>Identify turning points graphically</li> <li>Solve quadratic equations using the formula and completing the square</li> <li>Identify turning points and roots of quadratics algebraically</li> <li>Solve ratio and fraction problems which involve quadratic equations</li> <li>Conversion graph problems</li> <li>Real life graph problems including distance time graphs</li> </ul>	<ul style="list-style-type: none"> <li>Calculate and solve problems related to the surface area and volume of 3D shapes</li> <li>Convert between units of volume</li> <li>Convert between units of volume</li> <li>Conversion graph problems</li> <li>Real life graph problems including distance time graphs</li> <li>Interpret gradient as a rate of change</li> <li>Solve SUVAT equation problems</li> <li>Solve problems of</li> </ul>	<ul style="list-style-type: none"> <li>Calculate and solve problems related to the surface area and volume of 3D shapes</li> <li>Convert between units of volume</li> <li>Solve volume problems which involve Pythagoras</li> <li>Solve problems involving algebra with surface area and volume</li> <li>Solve problems relating to time and timetables</li> <li>Solve problems involving compound measures including speed, pressure, density and population density</li> <li>Graphs of compound measures</li> <li>Use and interpret maps and scales</li> <li>Measure, draw and solve problems with 3 figure bearings</li> <li>Calculate bearings involving algebraic expressions and trigonometry</li> <li>Understand and use the probability scale</li> <li>Solve various probability problems involving mutually</li> </ul>	Revision and exam practice	Revision and exam practice

	<ul style="list-style-type: none"> <li>• Solve various probability problems involving mutually exclusive events, sample spaces, listing strategies, two way tables, frequency trees, theoretical and experimental probability.</li> <li>• Use probability trees to solve problems for dependent and independent events.</li> <li>• Know what is meant by a set and solve problems involving sets venn diagrams and probability</li> <li>• Understand and use vector notation to solve problems</li> <li>• Solve problems relating to time and timetables</li> <li>• Solve problems involving compound measures including speed, pressure, density and population density</li> <li>• Graphs of compound measures</li> <li>• Construct and recognise nets of 3D shapes</li> <li>• Plans and elevations</li> <li>• Draw lines angles and shapes accurately</li> <li>• Construct loci to solve problems</li> </ul>	<ul style="list-style-type: none"> <li>• Interpret gradient as a rate of change</li> <li>• Solve SUVAT equation problems</li> <li>• Solve problems using velocity time graphs</li> <li>• Solve problems of repeated proportional change including compound interest</li> <li>• Solve exponential growth and decay problems</li> <li>• Solve problems using exponential graphs</li> <li>• Solve problems through sign change methods</li> <li>• Draw graphs of cubic and reciprocal functions from tables</li> <li>• Solve problems with cubic, reciprocal, and circle graphs</li> <li>• Recognise and solve problems with the equation of a circle and related features</li> <li>• Understand and use function machines</li> <li>• Interpret an expression using a function machine and vice versa</li> <li>• Solve problems with composite and inverse functions</li> <li>• Set up and solve linear simultaneous equations</li> <li>• Solve linear and quadratic simultaneous equations including graphically</li> <li>• Understand and use circle theorems to solve problems</li> <li>• Prove the circle theorems</li> <li>• Use the sine rule, cosine rule and sine formula for area of a triangle</li> <li>• Draw and use trigonometric graphs to solve equations</li> <li>• Transform graphs using translations and reflections</li> </ul>	<p>repeated proportional change including compound interest</p> <ul style="list-style-type: none"> <li>• Draw graphs of cubic and reciprocal functions from tables</li> <li>• Understand and use function machines</li> <li>• Interpret an expression using a function machine and vice versa</li> <li>• Decide with a reason if a statement is true or false</li> <li>• Use a counter example</li> <li>• Use identities by equating coefficients</li> <li>• Use step by step deduction to solve problems, including those involving odd and even numbers.</li> </ul>	<p>exclusive events, sample spaces, listing strategies, two way tables, frequency trees, theoretical and experimental probability.</p> <ul style="list-style-type: none"> <li>• Use probability trees to solve problems for dependent and independent events. Including those which lead to quadratic or linear equations</li> <li>• Know what is meant by a set and solve problems involving sets venn diagrams and probability</li> <li>• Solve more complex and algebraic Venn diagram problems</li> <li>• Understand and use vector notation to solve problems</li> <li>• Solve problems involving parallel and perpendicular vectors</li> <li>• Solve vector problems involving ratio</li> <li>• Prove points are colinear</li> <li>• Decide with a reason if a statement is true or false</li> <li>• Use a counter example</li> <li>• Use identities by equating coefficients</li> <li>• Use step by step deduction to solve problems, including those involving odd and even numbers.</li> <li>• Derive algebraic proofs through reasoning</li> <li>• Construct and recognise nets of 3D shapes</li> <li>• Plans and elevations</li> <li>• Draw lines angles and shapes accurately</li> <li>• Construct loci to solve problems</li> </ul>		
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Assessments and assessment focus	Topic test 1 Topic test 2 Mock Papers 1,2 and 3	Topic Test 3 Topic Test 4 Topic Test 5 Topic Test 6	GCSE Exams
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