

Maths- Y13

MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 3 Jan-Feb	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
TOPIC (S):-Pure :-Statistics :-Mechanics	Mock Revision	Mock Week	Integration & Partial fractions Statistical distributions Motion under gravity	Integration & Partial fractions Statistical distributions Motion under gravity	Numerical Methods Statistical distributions Motion under gravity	Numerical Methods	Revision and test all modules.
Knowledge & Skills development	Pure Statistics Mechanics	<p>Integration & Partial fractions: Decompose rational functions into partial fractions (denominators not more complicated than squared linear terms and with no more than three terms, numerators constant or linear). Integrate using partial fractions that are linear in the denominator.</p> <p>Numerical Methods: Locate roots of $f(x) = 0$ by considering changes of sign of $f(x)$ in an interval of x on which $f(x)$ is sufficiently well-behaved. Understand how change of sign methods can fail. Solve equations approximately using simple iterative methods; be able to draw associated cobweb and staircase diagrams. Solve equations using the Newton-Raphson method and other recurrence relations of the form $x_n + 1 = g(x_n)$. Understand how such methods can fail. Understand and use numerical integration of functions, including the use of the trapezium rule and estimating the approximate area under a curve and limits that it must lie between.</p> <p>Understand and use the Normal distribution as a model; find probabilities using the Normal distribution. Link to histograms, mean, standard deviation, points of inflection and the binomial distribution. Select an appropriate probability distribution for a context, with appropriate reasoning, including recognising when the binomial or Normal model may not be appropriate</p> <p>Recognise the underlying mathematical structure in a situation and simplify and abstract appropriately to enable problems to be solved. Understand, interpret and extract information from diagrams and construct mathematical diagrams to solve problems, including in mechanics. Translate a situation in context into a mathematical model, making simplifying assumptions. Use a mathematical model with suitable inputs to engage with and explore situations (for a given model or a model constructed or selected by the student). Interpret the outputs of a mathematical model in the context of the original situation (for a given model or a model constructed or selected by the student). Understand and use modelling assumptions. Use trigonometric functions to solve problems in context, including problems involving vectors. Use vectors to solve problems in Kinematics. Model motion under gravity in a vertical plane using vectors; projectiles.</p>					

Assessment / Feedback Opportunities		Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital		<ul style="list-style-type: none"> • Tolerance and respect for peers and mathematicians • Democracy: allowing all to speak and voice views 					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)		<p>Willingness to participate in, and respond to mathematical opportunities. Use of social skills in different contexts, including working and socialising with pupils from different religious, ethnic and socio-economic backgrounds.</p> <ul style="list-style-type: none"> • 					
Reading opportunities		<ul style="list-style-type: none"> • Fermat's Last Theorem • History of computer programming • History of Florence Nightingale 					
Key Vocabulary		secant, cosecant and cotangent arcsin, arccos, arctan, Cartesian, Parametric, Normal distribution, binomial distribution, histograms, mean, standard deviation, points of inflection, Kinematics, gravity, projectiles.					
Digital Literacy		Autograph, Desmos for graphing. Geogebra.					
Careers		Architect, Sports Science, Engineer, Statistician, Data Analyst, Business- manager, Market research. Computer Programmer, Video game development.					

Maths- Y12

MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 2 NOV - DEC	Week 1	Week 2	Week 3	Week 4 and 5	Week 6	Week 7
TOPIC (S)						
Knowledge & Skills development	•					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	•					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• •					
Reading opportunities	•					
Key Vocabulary						
Digital Literacy						
Careers						

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MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 3 JAN - FEB	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
TOPIC (S)	ASSESSMENT review	Inequalities	Vectors	Vectors	Sine and Cosine rules	Sine and Cosine rules
Knowledge & Skills development	•					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	•					
SMSC / Promoting British Values <small>(Democracy, Liberty, Rule of Law, Tolerance & Respect)</small>	• •					
Reading opportunities	•					
Key Vocabulary						
Digital Literacy						
Careers						

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MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 4 FEB - APR	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6
TOPIC (S)						
Knowledge & Skills development	•					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	•					
SMSC / Promoting British Values <small>(Democracy, Liberty, Rule of Law, Tolerance & Respect)</small>	• •					
Reading opportunities	•					
Key Vocabulary						
Digital Literacy						

Careers	
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MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 5 APR - MAY	Week 1	Week 2	Week 3	GCSE exams		
TOPIC (S)						
Knowledge & Skills development	•					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	•					
SMSC / Promoting British Values <small>(Democracy, Liberty, Rule of Law, Tolerance & Respect)</small>	• •					
Reading opportunities	•					
Key Vocabulary						
Digital Literacy						

Careers	

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MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 6 JUN - JUL	Week 1	Week 2	Week 3	Week 4	Week 5 and 6	Week 7
TOPIC (S)						
Knowledge & Skills development	•					
Assessment / Feedback Opportunities	Topic assessments	Self-assessment sheets	Homework	Formative teacher assessment - verbal	Retrieval practice	
Cultural Capital	•					
SMSC / Promoting British Values (Democracy, Liberty, Rule of Law, Tolerance & Respect)	• •					
Reading opportunities	•					
Key Vocabulary						

Digital Literacy	
Careers	