

Maths- Y13A

MAGHULL HIGH SCHOOL – CURRICULUM MAP



HALF TERM 1 SEPT - OCT	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7	Week 8
TOPIC (S):-Pure	Binomial theorem, sequences and series.	Binomial theorem, sequences and series.	Functions and Transformations	Functions and Transformations	Trigonometry and circular measure.	Trigonometry and circular measure.	Revision and Assessment
:-Statistics	Statistical Sampling	Statistical Sampling	Statistical Sampling	Data presentation and interpretation	Data presentation and interpretation	Data presentation and interpretation	
:-Mechanics	Vectors	Vectors	Vectors	Vectors	Vectors	Vectors	
Knowledge & Skills development	Pure	Understand and use the binomial expansion of $(a + bx)^n$. Extend to any rational n , including its use for approximation, be aware that the expansion is valid for $ bx/a < 1$. Understand and work with modulus notation. Understand and use sigma notation for sums of series. Work with sequences including those given by a formula for the n th term and those generated by a simple relation of the form $x_{n+1} = f(x_n)$; increasing sequences; decreasing sequences; periodic sequences. Understand and work with geometric sequences and series including the formulae for the n th term and the sum of a finite geometric series; the sum to infinity of a convergent geometric series, including the use of $ r < 1$. Work with radian measure, including use for arc length and area of sector. Understand and use the standard small angle approximations of sine, cosine and tangent: $\sin \theta \approx \theta$; $\cos \theta \approx 1 - \theta^2/2$; $\tan \theta \approx \theta$ where θ is in radians. Know and use exact values of sin and cos for $0, \pi/6, \pi/4, \pi/3, \pi/2$ and π and multiples thereof, and exact values of tan for $0, \pi/6, \pi/4, \pi/3$ and π and multiples thereof.					
	Statistics	Understand and use the terms 'population' and 'sample'. Use samples to make informal inferences about the population. Understand and use sampling techniques, including simple random sampling and opportunity sampling. Select or review sampling techniques in the context of solving a statistical problem, including understanding that different samples can lead to different conclusions about the population.					
	Mechanics	Use vectors in two dimensions. Calculate the magnitude and direction of a vector and convert between component form and magnitude/direction form. Add vectors diagrammatically and perform the algebraic operations of vector addition and multiplication by scalars, and understand their geometrical interpretations. Understand and use position vectors; calculate the distance between two points represented by position vectors. Use vectors to solve problems in pure mathematics and in context, including forces.					

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)	•	<ul style="list-style-type: none"> • Tolerance and respect for peers and mathematicians • Democracy: allowing all to speak and voice views 					
Reading opportunities		<ul style="list-style-type: none"> • Fermat's Last Theorem • History of computer programming • History of Florence Nightingale 					
Key Vocabulary		Indices, Surds, Manipulate, Rationalise, Factorise, discriminant, Population, sample, Magnitude, Forces					
Digital Literacy		Demos for graphing. Geogebra.					
Careers		Engineer, Statistician, Business- manager, Market research. Computer Programmer, Video game development.					