Levenshulme High School – Curriculum Map – Maths

		Teri	m 1	Те	rm 2	Tern	n 3
	Topic Title	Percentages and	Further graphs and	Surface area and	Functions		
	and NC link	circle theorems	Further trig	Volume and Scales			
Year 11	Pupils should know	 How to use a calculator effectively How to multiply decimals by powers of 10 How to make fractions out of 100 How divide a percentage by 100 The concept of interest and the difference between simple and compound How to calculate angles using circle theorems That proportions compare one part to the whole whereas ratio compares one part to another part Iteration is a method of repeating a process 	 The general features of cubic, reciprocal and exponential graphs how to substitute into expression How to manipulate fractions that are in algebra how to use trigonometry ratios when to apply cosine and when to apply sine rule - know when to use each rule how to identify missing side or angle questions identify the hypotenuse of a triangle find area of a triangle using sine rule 	 how to use a calculator effectively use inverse how to find surface area and volume of composite solid how to read scales How to read bearings match function with graph 	 how to sketch a function how to transform a function 	Revision and exam preparation	Revision and exam preparation

	 How to change recurring decimals to fractions Difference between terminating and recurring decimals Identify different transformations and the different features Describe movement through a vector 				
Pupils should be able to do	 Identify and describe transformation Understand and apply invariance Describe using vectors Add/ subtract vectors Multiply by a number Convert between fractions, decimals and percentages 	 Form and solve expression To know and apply sine and cosine rule Solve problems using sine and cosine rules 	 Plan a path using vectors Proof using vectors Solve functions Use composite functions Write inverse functions Write inverse functions Find the surface area of a pyramid, cone and sphere Find the volume of a 	 Sketch translation of functions Sketch reflection of functions Understand what transformation is given by a functions Revision and exam preparation 	

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	 Calculate a 	cone and		
	n and and a st	sphore		
	percentage of	sphere		
	an amounts	 Solve 		
	Calculate	problems		
	• Calculate	using volume		
	percentage	and surface		
	increase and			
	decrease	area		
	General	•		
	Calculate			
	reverse			
	nercentages			
	percentages			
	 Use multipliers 			
	to calculate			
	percentages			
	Calculate			
	compound			
	interest			
	a Solve growth			
	and decay			
	auestions			
	I			
	 How to use 			
	circle theorems			
	including			
	i de a tife da a			
	laentifying			
	correct			
	theorem			
	 Angle at centre 			
	is twice angle			
	at			
	circumterence;			
	 Angle in a 			
	semi-circle is			
	90°			

	 Angles in the 			
	same segment			
	are equal			
	Opposite			
	angles in a			
	cyclic			
	guadrilatoral			
	I angent at any			
	point on a			
	circle is			
	perpendicular			
	to the radius at			
	that point			
	Tangents from			
	an external			
	point are equal			
	in length:			
	Alternate			
	• Alternate			
	segment			
	theorem			
	Draw graphs			
	for cubic,			
	reciprocal and			
	exponential			
	equations			
	Draw and			
	recognise key			
	features of			
	trig graphs			
	To rearrange			
	equations to			
	estimate			
	answers using			
	iteration			

Why are we doing this now? How does it	Learning at KS3 on percentages supports compound and	Vector calculations are taught building on number skills and	KS3 work on area is now applied to surface area. This is	Year 10 work on trig graphs are now manipulated looking at translations and	
doing this now? How does it build on prior learning and prepare for knowledge and learning still to come?	 percentages supports compound and reverse percentage work. Angle facts studied in year 8 and work on circles themselves will now support circle theorems. Multiplicative relationships is seen again within this unit in the use of multipliers. Effective use of a calculator and algebraic manipuation in iteration. Transformations that are taught separately are now combined in the knowledge that pupils should be secure at the differences between them. Be able to use tracing paper and a ruler when drawing transformation Understand vectors as a movement and identify x and y axis 	are taught building on number skills and geometry skills like Pythagoras. Trigonometry from year 10 is applied to non-right angled triangles. Prior learning that pupils need to remember are: • How to substitute into a formula • Use a scale factor • Be able to find fraction of an amount • Plot coordinates • Substitute into complex formula • Identify the difference between applying trigonometry and Pythgoras' theorem • Adding , subtracting,	now applied to surface area. This is stretched to include complex shapes. Prior learning that pupils need to remember are: Inverse functions Function symbols The area formulas of a circle, trapezium, rectangle, parallelogram, triangle and trapezium How to square numbers	graphs are now manipulated looking at translations and stretches of these graphs and how this changes the key features of the graph. Prior learning that pupils need to remember are: • How to read coordinates • Movement on a graph	
		and dividing fractions			

Proriedning that pupils need to remember are: • The concept of percentage as out of 100 • How to divide and multiply • Place value of decimals and fractions • Be able to convert percentages into decimals • Parts of a circle • That a tangent and radius meet at 90 degrees • That there are 380 degree in a triangle aid to 180 degrees • That angles in a quadrilateral add to 380 degrees • How to double and halve pumbers	I	Duian la anaista di 41-14	Overske eve		
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