

Year	What do students learn?	Why?	Tier 3 keywords	Threshold concepts	Literacy	Assessment
KS2	Year 6		Place value	Place value	Students sit English	Key Stage 2
			Rounding	Four operations	grammar,	assessments
	Number:		Negative	Equations	punctuation and	
	Number and Dises using		Digit	Area	spelling tests at the	<ul> <li>Mathematics</li> </ul>
	- Number and Place value		Remainder	Converting units	end of Key Stage 2.	Paper 1
	- Values of digits		Factors	2D representations of 3D		(Arithmetic)
	- Rounding		Multiples	shapes		<ul> <li>Mathematics</li> </ul>
	<ul> <li>Negative numbers</li> </ul>		Primes	Coordinates		Paper 2:
	<ul> <li>Four operations</li> </ul>		Estimation	Pie charts		Reasoning
	- Fractions		Proportion	Mean		<ul> <li>Mathematics</li> </ul>
			Sharing			Paper 3:
	Ratio and Proportion		Percentage			reasoning.
	Finding percentages of		Formula			
	- Finding percentages of		Linear sequence			The maths test
	Ginatian akana a		Variables			comprises two
	- Similar shapes		Converting			components, split over
	- Sharing amounts		Units			three papers.
	Algobra		Parallelogram			
	Algebra		Triangles			Paper 1: Arithmetic
	- Simple formulae		Cube			This paper assesses
	- Linear sequences		Cuboids			mathematical
	- Simple equations		Triangles			calculations: 4
			Quadrilaterals			operations, fractions,
	Measurement		Polygons			decimals, percentages.
			Radius			They also cover long
	<ul> <li>Converting units of</li> </ul>		langent			division and long
	measure		Diameter			multiplication. 30
	<ul> <li>Recognise when to use</li> </ul>		Coordinates			minutes for 40 marks.
	formulae for area and		Translations			D
	volume		Niean Die ekonte			Papers 2 & 3 assess
	- Area of parallelograms		Pie charts			mathematical nuency,
	and triangles.		Line graphs			solving mathematical
						problems and
	Geometry:					rosconing Dunils have
						10 minutes for 25
	<ul> <li>Draw 2D shapes</li> </ul>					40 minutes 101 55
	<ul> <li>2D representations of 3D</li> </ul>					IIIdI NS.
	shapes					
	- Classify quadrilaterals					

	<ul> <li>Naming parts of circles</li> <li>Angles around a point, on a straight line and vertically opposite angles.</li> <li>Coordinates</li> <li>Translations</li> </ul> Statistics <ul> <li>Construct pie charts and line graphs</li> <li>Use mean as an average</li> </ul>					
Year	What do students learn?	Why?	Tier 3 keywords	Threshold concepts	Literacy	Assessment
7	<ul> <li>Probability and Number 1</li> <li>Basic probability</li> <li>Fractions</li> <li>Order of operations</li> <li>Factors, multiples &amp; primes</li> <li>Powers and roots</li> <li>Probability – combined events, Venn diagrams</li> </ul> Algebra 1 <ul> <li>Manipulating algebra</li> <li>Expanding brackets</li> <li>Substitution</li> <li>Sequences</li> <li>Special Sequences</li> <li>Coordinates</li> <li>Linear Graphs</li> </ul> Ratio and Proportion 1	<ul> <li>Term 1:</li> <li>We start with topics that students might not necessarily have covered in as much depth at KS2, to encourage them to build interest in mathematics rather than repeat material they are already comfortable in. For example, students will not have studied Probability in as much depth as many number topics they may cover later in Year 7.</li> <li>Later in the term, we look at basic fundamentals such as BIDMAS to make sure that the basic concepts and building blocks of maths are secure before moving on.</li> <li>Term 2:</li> </ul>	Probability Outcome Impossible Mutually exclusive Exhaustive Experiment Equivalent Operation Division Remainder Factor Multiple Prime Lowest Common Multiple Highest Common Factor Index Notation Power	<ul> <li>Powers and Roots</li> <li>Expanding brackets</li> <li>Circles (Area and Circumference)</li> <li>Linear Graphs</li> <li>Writing ratios using proportion.</li> <li>Similarity and Congruence.</li> </ul>	Spelling tests We ensure students in Year 7 do a spelling test each half term (Based on Tier 3 vocabulary), with a pre-test at the beginning of the term and a post-test at the end. We record their scores so we can assess the impact of this. <b>Reading</b> Every lesson after lunch starts with 10	Week 7 (End of October) Topic Test/MCQs Week 19 (Beginning of January) Topic test/MCQs Week 29 (End of March) Topic Test/MCQs Week 41 (Beginning of July) End of Topic Test/MCQs • At the above assessment points, teachers will assess the

Ratio	_	We move away from probability and	Base	minutes of DEAR		learning of
Cimplifying Patio		number skills slightly by introducing	Evnonent	time		students using
Simplifying Ratio		and extending algebra that they will	Squaro	time.		and of topic tasts
Sharing in a given ratio		and exterioring algebra that they will	Boot	W/o are great		and multiple
• Express one quantity as a ratio		nave seen at KS2. Students are	RUUL	we are great		and multiple
of another		expected to be able to simplify	Cuba	Supporters of this in		The share will
		algebraic expressions, substitute into	Cube	ividuits as it is so	•	leachers will
Geometry and Measures 1		formulas and recognise differing	Approximation	important that		then use this
<ul> <li>Properties of shapes</li> </ul>		sequences (including working out the	Negative number	students are able to		information to
Symmetry		nth term).	Directed number	decipher long		review and
<ul> <li>Perimeter and Area</li> </ul>	Term 3:		Venn diagram	problems.		revise topics that
Circle Area and Circumference	-	We return to sequences slightly at	Sample Space			students needed
Angles		the start of the term, looking at	Theoretical	Writing		more help on.
Constructions		special sequences: Fibonacci,	probability	Although there is		They form a
<ul> <li>Similarity and Congruence</li> </ul>		Geometric, Square, Triangle	Bias	less extended		diagnostic tool to
, 6		numbers.	Fairness	writing in Maths,		help us with our
	-	We then move into some graph work	Variable	working out is key.		"deliberate
		which adds variation and helps	Unknown			practice"
		interleave different topics from	Expression	Students are		approach.
		before. We use our algebra skills to	Equation	encouraged to work		
		help us form and draw straight-line	Pattern	down the page by		
		(Linear) graphs before we move onto	Sequence	dividing their pages		
		introducing Ratio before January half	Ascending	in two and working		
		term.	Descending	in columns.		
	Term 4:		Arithmetic	Teachers look for		
	-	Ratio plays an extremely large part to	Geometric	clear, concise and		
		play within mathematics and is also	Horizontal	correct working out		
		one of the most common	Vertical	that is easy for		
		constituents of the new GCSE (25%	Coordinate	students and others		
		for Foundation tier and 20% for	Fraction	to follow.		
		Higher tier students). We build on	Proportion			
		the introduction of ratio at the end of	Sphere	Furthermore, when		
		Term 3 by manipulating ratios further	Cone	the opportunity		
		in term 4.	Cylinder	arises, teachers		
	-	We simplify ratios, write one fraction	Quadrilateral	may ask students to		
		as another, share in a given ratio and	Square	explain certain		
		write proportional relationships as	Rectangle	concepts in their		
		fractions and as ratios.	Parallelogram	own words. This		
	Term 5:		Isosceles	may be after a		
	-	In term 5, we move away again and	Trapezium	teacher has		
		look at shapes. This includes looking	Kite	explained a certain		
		at symmetry, perimeter and scale	Rhombus	concept to the class		
		diagrams, circle area and	Delta	and wants students		
		circumference and angle	Diagonal	to narrate this in		
		constructions. The topics are distinct	Scalene	their own words.		
		from each other but help interleaving	Equilateral			
		between topics.	Plane	Oracy		
	Term 6:		Parallel	Teachers should		
			Perpendicular	ensure that		

		<ul> <li>Students should continue work on shape by continuing with their "angle work," and in particular looking at extending this with work on similar shapes and congruent shapes.</li> <li>The curriculum at this stage is broken down into distinct parts yet the nature of maths means that topics are interleaved and revised at each stage of the year.</li> <li>The regular assessments points, and more importantly, the periods after the assessment points allow teachers to identify what topics have been taught well, which topics students have learnt as a result but also to identify topics to re-teach and revise before moving on to build on these skills.</li> </ul>	Polygon Rotational symmetry Perimeter Distance Dimension Compound shape Height Radius Diameter Circumference Sector Semicircle Irrational Protractor Centimetre Millimetre Acute Obtuse Reflex Interior Exterior Congruent Similar Hypotenuse Prove		students answer in full, eloquent sentences and should ask students to repeat these if they are not said correctly. This is to help build their public speaking skills and also to help the whole school literacy programme.	
Year	What do students learn? Number	Why? Term 1:	Tier 3 keywords Mean	Threshold concepts - Significant	Literacy Reading	Assessment Week 7 (End of
ð	<ul> <li>Ordering, Rounding and estimation</li> <li>Converting between Fractions, decimals and percentages.</li> <li>Using Percentages</li> <li>Inverse operations</li> <li>Percentage change, including Reverse percentages.</li> <li>Statistics         <ul> <li>Averages</li> <li>Interpreting and comparing data</li> <li>Scatter graphs</li> </ul> </li> </ul>	<ul> <li>The term starts looking at averages, comparing data and scatter graphs. All these topics are rarely covered in the Year 7 curriculum and Scatter graphs not at all so they should be topics that are interesting to students.</li> <li>The term ends revising and developing work on rounding and estimation, fractions, decimals and percentages. This work will have been covered in Year 6 and is also touched upon in the Year 7 curriculum so teachers can develop these skills if students are competent, or ensure competency if students are still not fully grasping certain concepts.</li> </ul>	Median Mode Range Approximate Midpoint Discrete Data Pictogram Frequency Sector Correlation Interpolation Extrapolation Outlier Axis Scale Recurring Terminating Significant figures Solution	<ul> <li>Figures</li> <li>Standard Form</li> <li>Scatter graphs</li> <li>Re-arranging formulae</li> <li>Linear graphs</li> <li>Direct and inverse proportion</li> </ul>	Every lesson after lunch starts with 10 minutes of DEAR time. We are great supporters of this in Maths as it is so important that students are able to decipher long problems. <b>Writing</b> Although there is less extended writing in Maths, working out is key.	October) Topic Test/MCQs Week 19 (Beginning of January) Topic test/MCQs Week 29 (End of March) Topic Test/MCQs Week 41 (Beginning of July) End of Topic Test/MCQs • At the above assessment points, teachers will assess the

Solve linear equations	Term 2:	Multiplier	Students are	learning of
Sequences, finding the nth	- Work on sequences is continued	Percentage	encouraged to work	students using
term	from work on sequences in Year 7.	Inverse	down the page by	end of topic tests
Granhs of Linear and	with the introduction of looking at	Powers	dividing their pages	and multiple
Quadratic Euroctions	nth term involving negative numbers	Roots	in two and working	choice questions.
Model formulae	and fractional increases. Geometric	Operation	in columns.	Teachers will
	sequences should also be introduced	Intersection	Teachers look for	then use this
	here	Substitute	clear concise and	information to
graphically.		Ascending	correct working out	review and
• Use and re-arrange	- Linear graphs are introduced	Descending	that is easy for	roviso topics that
formulae.	although they will be seen again later	linear	students and others	students needed
	in the year during Topic A. Students	Term	to follow	more holp on
Ratio, Proportion and Rates of	will not know how to re arrange	Gradient		Those form a
Change	formulae yet, this comes up in Term	Quadratic	Eurthormoro whon	diagnostic tool to
Units of measure	A but students will be able to look at	Index	the opportunity	
<ul> <li>Compound measures,</li> </ul>	4, but students will be able to look at	Plan	arises teachers	"deliberate
including Speed and	equations in the form y = mx + c.	Flat	may ack students to	deliberate
Density.	Torm 2:	Formula	avalain cortain	practice
<ul> <li>Scale drawings</li> </ul>	During this form students build upon	Expression	explain certain	approach.
<ul> <li>Direct and Inverse</li> </ul>	- During this term, students build upon work in Yoar 7 by using percentages	Variable	own words This	
proportion	This includes finding percentages.	Darallelogram	may be after a	
Best Buys	increase (decrease, reverse	Tranazium	toachar bac	
	noreantages (where you have to find	Derimeter	evolution dia contain	
Geometry and Measures	the existing amount) Descentage	Area	explained a certain	
Perimeter and Area	multipliers are also introduced which	Ared	concept to the class	
Volume	in a lieu chill throughout the CCCC	Cylinder		
<ul> <li>Pythagoras</li> </ul>	is a key skill throughout the GCSE	Prism	to narrate this in	
Geometric reasoning and	curriculum.	Radius	their own words.	
proof	Taura A.	Diameter	0	
<ul> <li>Angles in parallel lines</li> </ul>	Term 4 leaks at Commound	Cubold	Uracy Tasahara shavild	
• 3-D shape	- Term 4 looks at Compound		reachers should	
Transformations	measures. This builds on work	Cross-section	ensure that	
in an	students will have done in KS2 on	Rypotenuse Butha associ	students answer in	
	comparing units and measurements.	Pythagoras	fuil, eloquent	
	Coole duomines builde en monte fuero	Geometry	sentences and	
	- Scale drawings builds on work from	Alternate angles	should ask students	
	Year 7 on Similar shapes and then		to repeat these if	
	students look at Direct and inverse	digies	they are not said	
	proportion which they will not have	Co-Interior angles	correctly. This is to	
	seen before.	Reflex	neip build their	
		Acute	public speaking	
	- Students Will also look at direct and	Obtuse	skills and also to	
	inverse proportion (without algebra).		nelp the whole	
	I his will include topics such as "Best		school literacy	
	buys" where students are required to		programme.	
	find out which products are the best			
	value.			
	Term 5:			

		- Term 6: -	Term 5 starts by building on the algebra they have learnt in Year 7 looking at modelling formulae algebraically and re-arranging formulae. This links to the work on linear graphs students did earlier in the year. The term ends with students building on the work they did at KS2 and in Year 7 looking at Perimeter and Area. They also look at volume of shapes, which students won't have seen since Year 6. Building on work in Term 4 on congruent triangles, students start Term 6 by looking at Pythagoras' theorem. Students then look at angles on parallel lines, building on the facts they learn in Year 7 (vertically opposite, angles around a point and				
		-	shapes, which students will have seen to a certain extent in KS2. Transformations is the final topic in Year 8. Students will have studied translation and reflection in Year 6 and will have looked at Enlargements to a certain extent within Year 7 topic 4. Students will be introduced to all four transformations, including rotations.				
Year	What do students learn?	Why?		Tier 3 keywords	Threshold concepts	Literacy	Assessment
9	Students should start the 3-year	Term 1:	We start looking at he sis such as and	Factor		Reading	October
	AQA Scheme of Work.	-	vve start looking at basic number and	iviuitipie		Every lesson after	IN Uctober, there is
Foundation	Students in 9xMa1 start a 2-year		have studied previously in Key Stage	Prime number		minutes of DEAR	that Year 9 students sit
(This is for	Scheme of Work with the intention		3. Starting the year like this will	Highest common		time.	based on topics that
	of completing AQA Level 2 Further		enable students to begin with	factor			they have covered to
students	Maths in their final year (Year 11).						date.

whom we			confidence and ensure that they	Lowest common	We are great	
holiovo will	Number		have basics before moving on.	multiple	supporters of this in	This allows teachers to
believe will	Basic number	-	We then move onto angles and scale	Complementary	Maths as it is so	assess understanding
not be able to	Factors and multiples		diagrams and bearings. Angles is a	Isosceles	important that	and to address any
access the	Basic fractions		which will give them the skills to	Scalene	decipher long	from students
	Basic decimais		study bearings which will be a new	Reflex	nrohlems	nom students.
Higher tier	Rounding     Resis percentages		topic to them.	Obtuse	problems.	Term 6 Y9 PPE
scheme of		-	At the end of the term, students	Acute	Writing	June at the end of
	Basic algebra		move onto 'basic algebra' which	Triangle	Although there is	their academic year.
work. These	Coordinate and linear		again is a recap of work covered in	Angle	less extended	2 x 1.5 hour GCSE
students will	graphs		years 7 and 8 to ensure that students	Parallel	writing in Maths,	papers.
follow this	Sequences		are secure with this skill set to move	Corresponding	working out is key.	
	Equations		onto more challenging algebra in Key	Alternate	Churchen the sure	Students are given two
scheme of			Stage 4. Review and revision time is	Allied	Students are	GCSE papers (1 calculator and 1 non
work from	Statistics	-	incorporated into the scheme of	Clockwise	down the name by	calculator) from a past
	Collecting and		work to allow time for teachers to	Measure	dividing their pages	examination series.
the beginning	representing data		clear up misconceptions students	Scale	in two and working	This allows us to
of Year 9.	Scatter graphs		may have on any work they have	Variable	in columns.	compare our new
	Competent and management		covered so far.	Coefficient	Teachers look for	results with past
	Geometry and measures	Term 2:		Like terms	clear, concise and	cohorts, to assess
If we are even	<ul> <li>Aligies</li> <li>Scale diagrams and</li> </ul>	-	The term begins with work on basic	Expand	correct working out	where the current
slightly	bearings		fractions, some of this work hasn't	Simplify	that is easy for	cohort stand in
Slightly	<ul> <li>Introduction of perimeter</li> </ul>		been seen since year 7, students	Fraction	students and others	relation to past
unsure of	and area		need to be given time to go over this.	Denominator	to follow.	cohorts.
which tier	Introduction of		Students also move into harder work	Numerator Mixed number	Furthermore when	
	circumference and area		numbers	Improper fraction	the opportunity	
students will	Transformations	-	Co-ordinates and linear graphs are	Axes	arises, teachers	
eventually	<ul> <li>Pythagoras' Theorem</li> </ul>		then studied, this is to consolidate	Axis	may ask students to	
ontor	<ul> <li>2D representation of 3D</li> </ul>		work covered in years 7 and 8 to	Gradient	explain certain	
enter,	shapes		ensure that students grasp these	Intercept	concepts in their	
students will			ideas to be able to access harder	Coordinates	own words. This	Pre/Post tests
always start	Ratio, Proportion and Rates of		topics later on in the course such as	Significant figure	may be after a	At the beginning and
	Change		interpreting $y = mx + c$ .	Rounding	teacher has	end of each topic,
following the	Katio and proportion	-	This is followed by basic decimals and	Decimal place	explained a certain	students are given a
Higher tier	Probability		rounding, which again is a review of	Upper bound	concept to the class	Pre and Post test on
achama of	Basic probability		Students will need to be able to apply		to parrate this in	the given topic.
scheme of			these skills to later tonics such as	Primary data	their own words	This is based on
work, with			upper and lower bound calculations	Secondary data		developments of
the option of			and rounding answers to a suitable	Arithmetic	Oracy	cognitive science that
			degree of accuracy – e.g.	Sum	Teachers should	"primes" students'
dropping			trigonometry and volume of a	Product	ensure that	brains for what they
down to the			sphere.	Difference	students answer in	are about to learn. It
		-	Collecting and representing data is	Quotient	full, eloquent	also offers teachers to
Foundation			the final topic covered this term.	Continuous	sentences and	assess any prior

tier at an		Some of this is a recap on prior	Discrete	should ask students	learning from students
		learning, these skills need to be built	Term	to repeat these if	and adapt their
appropriate		up and new content such as to know	Difference	they are not said	teaching sequence to
lator stago)		and understand the terms primary	Geometric	correctly. This is to	the needs of their
later stage).		data, secondary data, discrete data	Arithmetic	help build their	individual students.
		and continuous data.	Sequence	public speaking	
			Linear	skills and also to	The post tests also
	Term 3:		Rule	help the whole	allow students to build
	-	Work on sequences is continued	Quadratic	school literacy	confidence as they can
		from work on sequences in Years 7	Generate	programme.	see that they have
		and 8, with the introduction of	Substitute		learnt topics that they
		looking at quadratic sequences and	Percent		may not have been
		generating a quadratic sequence	Calculate		able to do in the past.
		from its nth term. Students also need	Increase		
		to be able to generate a geometric	Decrease		Although not the most
		sequence from its nth term.	Perimeter		robust form of data to
	-	Basic percentages are then covered,	Area		gather, it does help
		this is a recap of prior learning but it	Composite		focus students on
		is important that these skills are	Trapezium		what they are about to
		embedded so that students can	Parallelogram		learn and where it fits
		moved onto more challenging work	Units		within the
		The final tania this tarm is normated	Compound		mathematics
	-	The final topic this term is perimeter	Rectilinear		curriculum and what
		and area. Students need to be	Area		examination questions
		reminded of the formulae, in	Area		on the topics look like.
		Poviow and rovision time is	Chord		
	-	incorporated into the scheme of	Sector		
		work to allow time for teachers to	Segment		
		clear up misconceptions students	Radius		
		may have on any work they have	Diameter		
		covered so far.	Arc		
			Ratio		
	Term 4:		Fauivalent		
	-	The term begins with introduction of	Proportion		
		circumference and area of a circle	Fraction		
		which has already been seen in Key	Equivalence		
		Stage 3. This is to consolidate and	Functions		
		ensure that students are aware of	Divide		
		the formulae. Students also learn	Exhaustive		
		new definitions such as: tangent, arc,	Mutually exclusive		
		sector and segment. Students also	Probability		
		begin to apply these skills to	Outcome		
		composite shapes.	Impossible		
	-	This is followed by ratio and	Sample space		
		proportion. This gives students a	Experiment		
		chance to recap prior learning on this	Even chance		
		topic and build upon their skills.	Likely		

		Students will start to see this work in	Unlikely		
		a different context o g bact huy	Equation		
		a unreferit context e.g. best buy	Linknown		
		fractions to linear functions	Variable		
		Pacie probability is the final tenic this	Solvo		
	-	Basic probability is the final topic this	Solve		
		term. Students will hot have seen this	Formula		
		since year 7, it will be a reminder for	Solve		
		them. They will also be able to	Inverse		
		continue to develop their skills with	Equals		
		fractions, decimals and percentages	Correlation		
		in this unit of work. New content	Line of best fit		
		introduced is frequency trees.	Interpolate		
	-	Review and revision time is	Extrapolate		
		incorporated into the scheme of	Plot		
		work to allow time for teachers to	Estimate		
		clear up misconceptions students	Transformation		
		may have on any work they have	Translation		
		covered so far.	Vector		
			Enlargement		
	Term 5:		Rotation		
	-	The term begins with equations. A lot	Reflection		
		of work was done with equations in	Centre of		
		year 8. This unit of work will allow	enlargement		
		students to consolidate these skills.	Scale factor		
		Students need to be introduced to	Image		
		working with unfamiliar formulae	Object		
		(scientific formulae). Equations need	Congruent		
		to include the unknown on one side,	Invariant		
		both sides and brackets.	Pythagoras		
	-	Scatter graphs are then studied, this	Hypotenuse		
		is a recap of work covered in year 8.	Right Angle		
		It is to remind students of this work	Plan		
		and to go into a little more detail.	Elevation		
		Students need to be able to	Front		
		Recognise correlation and know that	Side		
		it does not indicate causation and	Solid		
		know that making predictions using	Representation		
		interpolating and extrapolation			
		apparent trends whilst knowing the			
		dangers of doing so			
	-	Review and revision time is			
		incorporated into the scheme of			
		work to allow time for teachers to			
		clear up misconceptions students			
		may have on any work they have			
		covered so far			
	Torm 6.				
	161110:				

		<ul> <li>Transformations is the first topic</li> </ul>			
		studied. This is a recap of work from			
		Key Stage 3 and involves the			
		following: Identify, describe and			
		construct congruent and similar			
		shapes, on co-ordinate axes, by			
		considering rotation, reflection,			
		translation and enlargement			
		(including fractional scale factors			
		which students may not have seen			
		before).			
		<ul> <li>Pythagoras' Theorem is then</li> </ul>			
		covered, students will have seen this			
		in year 8. This gives them a chance to			
		recap the skills learnt.			
		The final topic is 2D representations of 3D			
		shapes. This allows students to consolidate			
		work from year 8 which they are likely to be			
		Torm 1:		Pooding	Octobor
10	Number	- Review and revision is built into the	Standard Form	Fvery lesson after	In October, there is
Foundation	Standard form	scheme of work for the first week	Power	lunch starts with 10	also an examination
Foundation	Calculating with	and a half. This is to ensure that	Calculate	minutes of DEAR	that Year 10 students
	nercentages	topics taught at the end of last term	Ordinary number	time.	sit based on topics
( <b>-</b> 1 · · · · ·	<ul> <li>Indices</li> </ul>	are embedded and it allows students	Ascending		that they have covered
(This is for		to begin the year with confidence.	Descending	We are great	during their KS4
students	Algebra	- Standard form is then studied.	Calculation	supporters of this in	curriculum to date
	<ul> <li>Algebra recap and</li> </ul>	Students will have seen standard	Percentage	Maths as it is so	(Year 9 and 10).
wnom we	extension	form in year 8; this unit of work	Multiplier	important that	
believe will	<ul> <li>Graphs recap and</li> </ul>	allows them to recap work taught	Original value	students are able to	This allows teachers to
	extension	and it goes into more detail as	Error Interval	decipher long	assess understanding
not be able to	<ul> <li>Simultaneous equations</li> </ul>	students learn how to complete	Upper bound	problems.	and to address any
access the	<ul> <li>Real life graphs</li> </ul>	standard form calculations with and	Lower bound		areas of weakness
Lighartian		without a calculator.	Measure	Writing	from students.
	Statistics	- we then move onto calculating with	Compound units	Although there is	Torm 6 V10 DDE
scheme of	<ul> <li>Statistical measures</li> </ul>	work with percentage multipliers	Dressure	writing in Maths	lune at the end of
work Those		(which was covered in year 8 and	Density	working out is key	their academic year
WOIK. THESE	Geometry and measures	students will need to be reminded	Sneed	working out is key.	3 x 1 5 hour GCSE
students will	Measures	of). Students will also need to be able	Formula	Students are	papers.
follow this	Constructions and loci	to work out original values (reverse	Substitute	encouraged to work	1
	Congruence and similarity	percentage problems).	Primary Data	down the page by	Students are given
scheme of	Introduction to     trigonometry	- Measures is the final topic. It involves	Secondary Data	dividing their pages	three GCSE papers
work from	Eurther perimeter and	converting between units; working	Discrete	in two and working	from a past
	Further perimeter and     area	with upper and lower bounds and	Continuous	in columns.	examination series.
the beginning	a Eurther circumforance and	using them in calculations (which is	Range	Teachers look for	This allows us to
of Year 9		new). Compound units are also	Median	clear, concise and	compare our new
	aica	covered – speed, density which have	Mode	correct working out	results with past

	Properties of polygons		been seen in year 8 and pressure	Mean	that is easy for	cohorts, to assess
			which is new.	Frequency	students and others	where the current
If we are even	Probability	-	Review and revision time is	Grouped data	to follow.	cohort stand in
slightly	Review of basic probability		incorporated into the scheme of	Midpoint	F	relation to past
unsure of	Probability		work to allow time for teachers to	Spread	Furthermore, when	conorts.
unsule of			may have on any work they have	Compare	arises teachers	Following their end of
which tier			covered so far.	Average	may ask students to	vear examinations.
students will		Term 2:		Population	explain certain	students receive
		-	The first topic this term is statistical	Distribution	concepts in their	Question Level
eventually			measures. Students should know and	Sample	own words. This	analysis sheets which
enter,			understand the terms: primary data,	Sampling	may be after a	link to maths videos
students will			secondary data, discrete data and	Indices	teacher has	and exercises from
			continuous data. This would be	Square number	explained a certain	HegartyMaths which
always start			onto finding averages and the range	Cube number	and wants students	look at their areas of
following the			including frequency tables, which is	Square root	to narrate this in	weakness. This is
lichontion			also a recap. A new concept which is	Cube root	their own words.	particularly key for
Higher tier			introduced is apply statistics to	Construction		students to use before
scheme of			describe a population. Students need	Loci	Oracy	their next round of
work with			to also infer properties of	Perpendicular	Teachers should	examinations which
			populations or distributions from a	Bisector	ensure that	occur in November of
the option of			sample, whilst knowing the	Angle	students answer in	Year 11.
dropping			limitations of sampling.	Compasses	full, eloquent	Dro /Doot tooto
day wata tha		-	nucles are then covered. Students	Protractor	sentences and	At the beginning and
down to the			integer powers and associated real	Simplify	to repeat these if	end of each tonic
Foundation			roots (square, cube and higher) and	Expand	they are not said	students are given a
tier at an			recognise powers of 2, 3, 4, 5. A lot of	Factorise	correctly. This is to	Pre and Post test on
			this is a recap from Key Stage 3 but it	Expression	help build their	the given topic.
appropriate			is important that students are	Coefficient	public speaking	
later stage).			confident working with powers as	Variable	skills and also to	This is based on
			they are likely to be assessed on this	Equation	help the whole	developments of
			In a non-calculator exam.	Formula	school literacy	cognitive science that
		-	covered this term. Students will need	Expression	programme.	hrains for what they
			to be reminded of the construction	Congruent		are about to learn. It
			skills that they covered in Key Stage 3	Similar		also offers teachers to
			(constructing triangles) and then	Hypotenuse		assess any prior
			develop these skills further to:	Scale factor		learning from students
			constructing perpendicular bisector	SSS		and adapt their
			of a line segment; Constructing a	ASA		teaching sequence to
			perpendicular to a given line from /	SAS		the needs of their
			at a given point; disecting a given	Side		individual students.
			nrohlems	Angle		The post tests also
		Term 3:	p. 02.01101	Triangle		allow students to build
				Trigonometry		confidence as they can

1			1	1
	-	The term begins with algebra recap	Right angle	see that they have
		and extension. Student will not have	Opposite	learnt topics that they
		seen a lot of these skills since year 9	Adjacent	may not have been
		and it is important that there is time	Cosine	able to do in the past.
		for these skills to be recapped. New	Sine	
		content introduced is Simplifying	Tangent	Although not the most
		and manipulating algebraic	Ratio	robust form of data to
		expressions (including those	Inverse	gather it does help
		involving surds)	SOHCAHTOA	focus students on
	-	Congruence and similarity is then	Derimeter	what they are about to
		studied this is a recan from work	Area	what they are about to
		covered in Key Stage 3 and students	Area	learn and where it his
		will need to be reminded of these	Length	within the
		will need to be reminded of these	Parallelogram	mathematics
		Skills as it is something that they are	Trapezium	curriculum and what
		assessed on. The recap on congruent	Composite shapes	examination questions
		triangles will also help to prepare	Pyramid	on the topics look like.
		students for the next unit of work,	Surface area	
		trigonometry.	Composite solid	
	-	Introduction to trigonometry is the	Face	
		next topic. This will be a brand new	Edge	
		topic for students. Students will need	Vertex	
		to be able to label right angled	Linear	
		triangles and find missing lengths and	Straight line	
		angles using trig ratios.	Gradient	
	-	Review and revision time is	Co-ordinates	
		incorporated into the scheme of	Intercept	
		work to allow time for teachers to	Solve	
		clear up misconceptions students	Circumference	
		may have on any work they have	Badius	
		covered so far.	Diameter	
			Di	
	Term 4:		Arclongth	
	-	Further perimeter and area is the	Sector area	
		first tonic this term $\Delta$ lot of this unit	Chord	
		of work is a recan from year $9-$	Citoru	
		triangles transziums parallelograms	Securi	
		and composite shapes. Students will		
		and composite shapes. Students will	langent	
		contant in this tonic which is, finding	Simultaneous	
		content in this topic which is: finding	Unknown	
		the surface area of pyramids and	Eliminate	
		composite solids.	Graphically	
	-	Graphs recap and extension is the	Algebraically	
		next topic. The first part of this is a	Polygon	
		recap on $y = mx + c$ . It then moves	Regular	
		onto students being able to finding	Irregular	
		the equation of the line through two	Interior	
		given points, or through one point	Exterior	
		with a given gradient. Students also	Reciprocal	

<ul> <li>need to be able to identify and interpret gradients and intercepts of linear functions graphically and algebraically.</li> <li>Further circumference and area is the final topic this term. This topic will not have been seen since year 8 so students will need to be given time to consolidate these skills to enable them to move on to find arc length and sector area and giving answers in terms of pi.</li> <li>Review and revision time is incorporated into the scheme of work to allow time for teachers to clear up misconceptions students may have on any work they have covered so far.</li> </ul>	Kinematic Velocity Time Distance Acceleration Rate Frequency tree Experiment Exhaustive Dependent Independent Relative frequency Sample space Outcomes Mutually exclusive Probability tree Probability		
<ul> <li>Term 5:</li> <li>We start the term with simultaneous equations which is a new topic. The algebra recap in term 3 and graph recap in term 4 should help students to learn this topic. Students need to be able to solve simultaneous equations graphically and algebraically.</li> <li>Properties of polygons is the final topic this term. Students will have a reminder about angles in triangles and quadrilaterals which will then help them to understand the interior and exterior angle sum of any polygon.</li> <li>Review and revision time is incorporated into the scheme of work to allow time for teachers to clear up misconceptions students may have on any work they have covered so far.</li> </ul>			
Term 6: - Real life graphs is the first topic this term which sees a lot of new content. Students need to be able to plot and interpret graphs ( <u>including reciprocal</u> <u>graphs</u> ) and graphs of non-standard			

		-	functions in real contexts, to find approximate solutions to problems such as simple kinematic problems involving distance, speed and acceleration. Students also use previous work on y = mx + c to help them to interpret gradients. Review of basic probability (work from year 9) is then covered – in particular frequency of outcomes from experiments in a table and frequency trees. This then leads into the next topic. tw is the final topic and the main focus			
		of this is	tree diagrams of independent and			
		depende	nt events.		 	
11	Number				Reading	Term 2 Y11 PPE
	Standard form	Term 1:	Dovious and revision is built into the	Mahuma	Students are often	Beginning of
Foundation	Calculating with     percentages	-	Review and revision is built into the	Volume Scale factor	given textbook	November
			and a half. This is to ensure that	Ratio	that involve worded	Papers.
( <b>T</b> 1 · · · C	- maices		topics taught at the end of last term	Prism	problems. This will	
(This is for	Algebra		are embedded and it allows students	Pyramid	help them develop	Term 3 Y11 PPE
students	<ul> <li>Algebra: quadratics,</li> </ul>		to begin the year with confidence.	Cuboid	their reading and	End of February
whom we	rearranging formulae and	-	Volume is the first topic this term. A	Cube	inference skills and	3 x 1.5 Hour GCSE
	identities		lot of new content is covered	Cylinder	also expose them to	Papers
believe will	Inequalities		volume: volume of a sphere cone	Pi Radius	vocabulary	Students have two sets
not be able to	Algebra and graphs     Skotching graphs		and pyramid. Also giving answers, for	Diameter	vocabalaly.	of "Pre Public
access the	Solving quadratic		volume, in terms of pi will be a new	Height	Writing	Examinations (PPEs)"
	equations		concept. New ideas include:	Length	Although there is	in November and
Higher tier	Quadratic graphs		quadratics, rearranging formulae and	Triangular prims	less extended	February.
scheme of			manipulating expressions which have	Inequality	writing in Maths,	The examinations offer
work Those	Geometry and measures	_	powers in mem. Review and revision time is	Illustrate	working out is key.	teachers a chance to
	• Volume		incorporated into the scheme of	Integer	Students are	assess the learning of
students will	Irigonometry		work to allow time for teachers to	Geometric	encouraged to work	students and identify
follow this	vectors		clear up misconceptions students	Form	down the page by	areas of strength and
schomo of	Ratio. Proportion and Rates of		may have on any work they have	Graph	dividing their pages	areas that need
Schenne Of	Change	Tarra 2	covered so far.	Linear	in two and working	improvements.
work from	<ul> <li>Direct and inverse</li> </ul>	Term 2:	Inequalities is the first tonic this	Sketch	in columns. Teachers look for	After each
the beginning	proportion	-	term. This work has not been seen	Quadratic	clear, concise and	examination, students
of Voor O	Growth and decay		since year 8. Students will need to be	Cubic	correct working out	will be given Question
or rear 9.			shown how illustrate an inequality on	Reciprocal	that is easy for	Level Analysis sheets
			a number line and then develop skills	Equation	students and others	which link to maths
			further by solving inequalities.	Plot	to follow.	videos and exercises
				Co-ordinates		on "HegartyMaths"

If we are even	- Algebra and further graphs is the	Axes	Furthermore, when	which students can
	next topic. Students recap their	Grid	the opportunity	then use to address
slightly	equation solving skills and look at	Direct proportion	arises, teachers	their weakest areas.
unsure of	how we can solve equations using	Inverse proportion	may ask students to	
which tion	graphs. Including the solution of	Graphically	explain certain	After the November
which the	set in context	Ratio	own words. This	students are given a
students will	- Sketching graphs is the last tonic this	Hypotenuse	may be after a	hooklet of 12 past
eventually	term where students learn how to	Opposite	teacher has	papers in a plastic
eventuality	recognise, sketch and interpret	Adjacent	explained a certain	wallet which also
enter,	graphs of linear functions, quadratic	Right angle	concept to the class	contain the papers'
students will	functions, simple cubic functions and	Cosine	and wants students	answers. Students are
always start	the reciprocal	Sine	to narrate this in	advised and
always start	1	Tangent	their own words.	encouraged to
following the	y = -	Exact Value	Oracy	complete the 12
Higher tier	function $x$ with $t \neq 0$	Decimal place	Teachers should	February examination
		Evaluate	ensure that	series in order to
scheme of	Ierm 3:	Pythagoras	students answer in	improve their marks.
work, with	<ul> <li>Direct and inverse proportion is the first topic this term. Work in this</li> </ul>	Quadratic	full, eloquent	
the option of	topic builds upon previous work from	Root	sentences and	Pre/Post tests
the option of	vears 7. 8 and 9 and moves into the	Factorise	should ask students	At the beginning and
dropping	concept of inverse proportion and	Turning point	to repeat these if	end of each topic,
down to the	representing proportion graphically.	Maximum	they are not said	students are given a
	<ul> <li>Trigonometry is the next topic</li> </ul>	Iviinimum	correctly. This is to	Pre and Post test on
Foundation	covered. Students were only	Growth	nublic speaking	the given topic.
tier at an	introduced to this in year 10, they	Decay	skills and also to	This is based on
annronriato	will need time to consolidate this and	Compound	help the whole	developments of
appropriate	knowing exact trig values	interest	school literacy	cognitive science that
later stage).	- Review and revision time is	Interest	programme.	"primes" students'
	incorporated into the scheme of	Annual		brains for what they
	work to allow time for teachers to	Depreciate		are about to learn. It
	clear up misconceptions students	Vector		also offers teachers to
	may have on any work they have	Scalar Parallol		assess any prior
	covered so far.	Column		and adapt their
	Town A.	Diagrammatic		teaching sequence to
	Ierm 4:	Addition		the needs of their
	first tonic This builds upon previous	Subtraction		individual students.
	work on guadratics. Students also			
	learn how to solve quadratic			The post tests also
	equations graphically.			allow students to build
	<ul> <li>This is followed by quadratic graphs.</li> </ul>			confidence as they can
	Students will have previously learnt			bearnt tonics that they
	how to plot a quadratic graph, they			may not have been
	will need to recap this then move			able to do in the past.
	onto being able to identily and		 	

		<ul> <li>interpret roots, intercepts and turning points of quadratic functions graphically.</li> <li>Growth and decay is the next topic where students learn to set up, solve and interpret the answers in growth and decay problems, including compound interest. This builds upon their previous work on percentage multipliers.</li> <li>Review and revision time is incorporated into the scheme of work to allow time for teachers to clear up misconceptions students may have on any work they have covered so far.</li> <li>Vectors is the final topic to be covered before revision starts. Students will have seen vectors in transformations. New content involves: applying addition and subtraction of vectors, multiplication of vectors.</li> </ul>				Although not the most robust form of data to gather, it does help focus students on what they are about to learn and where it fits within the mathematics curriculum and what examination questions on the topics look like.
9	Higher	Term 1: The Year 9 course starts with an extension of the number skills that they will have seen to	Product of Prime factors Points	<ul> <li>Product of prime factors</li> <li>Angle facts from</li> </ul>	Reading Every lesson after lunch starts with 10	October In October, there is also an examination
		date. New topics as part of this that will be	Vertices	- Angle facts from	minutes of DEAR	that Year 9 students sit
(The vast	Students should start the 3-year	focused on are Credit and Balance sheets,	Edges	- Fractions	time.	based on topics that
majority of	AQA Scheme of Work.	product of prime factors, knowledge of	Parallel	- Y = mx + c		they have covered to
	Students in 9xMa1 start a 2-year	finance, estimating answers using rounding to	Bearings	- Rounding to	We are great	date.
students in	Scheme of Work with the intention	inequality potation	Rotational	and significant	Maths as it is so	This allows teachers to
Voor Q will	of completing AQA Level 2 Further		symmetry	figures.	important that	assess understanding
	Maths in their final year (Year 11).	The term continues looking at some geometry	Alternate angles	- Representing	students are able to	and to address any
follow the	Number	work, including ensuring all students are secure	Corresponding	data	decipher long	areas of weakness
Higher tier	Basic Number	with the correct geometrical notation and	angles Drimony data	- Percentage	problems.	from students.
	Factors and Multiples	at scale diagrams and hearings before looking	Primary data	- Real life graphs	Writing	Term 6 V9 PDF
scheme of	Basic fractions	back through some algebraic work they have	Continuous	- Frequency trees	Although there is	June at the end of
work	Basic decimals	done previously. Algebraic work includes	Secondary data	- Transformations	less extended	their academic year.
WUIK.	Rounding	looking at the differences between equations,	Trapezium	- Constructions	writing in Maths,	2 x 1.5 hour GCSE
	Basic Percentages	expressions, formulae, identities and	Parallelogram	and Loci	working out is key.	papers.
1	<ul> <li>Standard form</li> </ul>	inequalities.	Centre			

For Radius - 2D Studer	ents are	Students are given two
Algebra         Finally, the term finishes with revision of         Chord         representations         encourt	uraged to work	GCSE papers (1
students       • Basic algebra review       fractions. Students will need to be secure at       Diameter       of 3D shapes.       down	the page by	calculator and 1 non-
• Coordinates and linear the four operations, simplify fractions and Circumference dividing	ng their pages	calculator) from a past
Liid Liid y graphs convert between mixed and improper langent in two	o and working	examination series.
struggle	unns. Ders look for	
Real life graphs	concise and	results with nast
and whose • Equations • Term 2: • Term 2 starts looking at basic decimals. Bisector	ct working out	cohorts, to assess
final tion Ratio Proportion and Pates of Ordering, four operations, and also looks at Recurring	s easy for	where the current
Change changing recurring decimals into fractions, and decimals decimals	ents and others	cohort stand in
decision • Ratio and Proportion vice versa. Decimal places to follo	low.	relation to past
Significant figures		cohorts.
May be       Geometry and Measures       Students then look at coordinates and linear       Estimation       Further	ermore, when	
Angles     graphs using y = mx + c to identify parallel and     Exponential     the op	pportunity	
Scale diagrams and     perpendicular lines. Students will also need to     Gradient     arises,	, teachers	
unknown. bearings give equations through two given points, given Extrapolation may as	ask students to	
Perimeter and area     a gradient.     Scale factor     explain	in certain	
Students • Circumference and area	epts in their	
will start on Transformations	he after a	Pro/Post tosts
• Constructions and loci places and/or significant figures whilst also Reflection	er has	At the beginning and
the Higher • 2D representations of 3D being introduced to upper and lower bounds. Botation	ined a certain	end of each topic.
shapes.	ept to the class	students are given a
TIER SCNEME Later in the term, students will look at Construction and w	, vants students	Pre and Post test on
of work Probability collecting and representing data including Loci to nar	rrate this in	the given topic.
• Theoretical and frequency tables, bar charts, pie charts, Plan their c	own words.	
experimental probability pictograms and line graphs. Students will need Front elevation		This is based on
to know the differences between primary, Side elevation Oracy	1	developments of
IT secondary, discrete and continuous data and Teacher	iers should	cognitive science that
annronriate representing data also be taught how to draw and interpret	e that	"primes" students'
• Scatter graphs	nts answer in	brains for what they
at a later	loquent	are about to learn. It
senter	d ask students	also offers leachers to
SLdge, The term finishes with sequences, building on to rep	beat these if	learning from students
students work they have done in Years 7 and 8. One of they a	are not said	and adapt their
the additional pieces of work introduced here	ctly. This is to	teaching sequence to
will drop which students won't have seen before is to help b	ouild their	the needs of their
work out the nth term of quadratic sequences.	c speaking	individual students.
skills a	and also to	
the The term finishes with topic assessments.	the whole	The post tests also
school	ol literacy	allow students to build
FOUNDATION Ierm 3: progra	amme.	confidence as they can
tier exam)		see that they have
Looking at using percentages greater than		may not have been
100% for the first time. Problems involving		able to do in the past.

percentage multipliers will also be introduced which won't have been seen before yet form a crucial part of later study within the course. The course then looks into more geometry, in particular identifying properties of shape, finding the perimeter of compound shapes, finding the surface areas of pyramids and composite shapes. Students will also need to learn the formulas for triangles, parallelograms and trapezia.		Although not the most robust form of data to gather, it does help focus students on what they are about to learn and where it fits within the mathematics curriculum and what examination questions on the topics look like.
The term concludes by looking at real-life graphs, including reciprocal and exponential graphs. Students will also look at interpreting the gradient of a straight line as the rate of change.		
Term 4: This half term starts by looking at circumference and area of circles. Students must be familiar with circle notation and learn the formulas for area and circumference by heart.		
Students will also look at calculating surface areas of spheres, cones and composite solids whilst also calculating arc lengths, angles and areas of sectors of circles. Importantly, students should be encouraged to leave their answers "in terms of pi" unless specified as this provides the most 'exact' answer.		
Half way through the term, students look at ratio and proportion in more depth. Students use ratio notation, share amounts in ratio, apply them to contexts and relate ratios to fractions. Ratio forms a significant part of the GCSE course and students are introduced this at this point. Students will have seen it in Year 7 but it is seen here to revise it and take it further.		
Finally, equations are developed further solving equations with variables on both sides of the equation. Term 5:		

		Probability is looked at again here using frequency trees, theoretical probability and knowing mutually exclusive events sum to 1. Scatter graphs are then taught with bivariate data. Students are expected to recognise correlation and know it doesn't necessarily mean causation. Students will need to be able to draw lines of best fit and know the dangers of extrapolating. Students are then taught to calculate using standard form, including questions given in context. This is an extension of work they covered in Year 8. Term 6: To conclude the year, students are introduced to the four transformations again, yet enlargement now includes fractional and negative scale factors which won't have been seen before. Students will be expected to recognise, too, the combinations of reflections, rotations and translations. It will also be expected that students are familiar with column notation. After the summer examinations, students are introduced to constructions and loci, including bisecting angles, perpendicular bisectors and using these to solve loci problems. Students will also be expected to know how to construct a 60 degree angle. Finally, students look at 2D representations of 3D shapes, looking at constructing and				
Year	What do students learn?	interpreting plans and elevations of 3D shapes. Why?	Tier 3 keywords	Threshold concepts	Literacy	Assessment
<b>10</b> (The vast majority of students in Year 9 will	Higher Number • Calculating with percentages • Surds	Term 1: Students start the year looking at calculating with percentages. Although this topic was covered in depth in Year 9, this is repeated here to "interleave" material and to act against the curve of forgetting. Students look at using percentage multipliers again to help them with percentage problems.	Isosceles Equilateral Scalene Right-angled Reflex Obtuse-angled Invariant Transformations	<ul> <li>Percentage multipliers</li> <li>Upper/Lower bounds</li> <li>Surds</li> <li>Measures of central tendency</li> </ul>	Reading Every lesson after lunch starts with 10 minutes of DEAR time. We are great supporters of this in	October In October, there is also an examination that Year 10 students sit based on topics that they have covered during their KS4 curriculum to date
Tear 9 Will	<ul><li>Indices</li><li>Number recap and review</li></ul>		Frustums	- Indices	Maths as it is so important that	(Year 9 and 10).

follow the			Students then also use knowledge from Year 9	Upper/Lower	-	Properties of	students are able to	This allows teachers to
	Algebra	Cimultanaque aquatione	about upper and lower bounds and apply them	bounds Surd		polygons	decipher long	assess understanding
Higher tier		Introduction to quadratics	introduced including speed, density and	Rationalise	_	triangles	problems.	areas of weakness
scheme of	•	Rearranging formulae	pressure.	Geometric	-	Simultaneous	Writing	from students.
	•	Sketching graphs		progression		equations	Although there is	
WOrk.	•	Linear and quadratic	Surds concludes the rest of Term 1 in Year 10	Sampling	-	Conditional	less extended	Term 6 Y10 PPE
		equations and graphs	and forms a major part of the GCSE course. It	Powers		Probability	writing in Maths,	June at the end of
_			leads in to many later topics such as	Roots	-	Rearranging	working out is key.	their academic year.
For	Geomet	ry and Measures	trigonometry and exact trig values so it is worth spending time on this. Students need to	nuices Recurring decimal	_	V = mx + c	Students are	3 X 1.5 NOUL GCSE
students	•	Measures	be able to calculate exactly with surds.	Quadratic	_		encouraged to work	papers.
Students	•	Congruence and Similarity	rationalise denominators and also apply this to	sequences			down the page by	Students are given
that may		Pythagoras' theorem and	recognising geometric sequences where the	Congruent			dividing their pages	three GCSE papers
strugglo	-	basic trigonometry	common ratio is a surd.	Simultaneous			in two and working	from a past
sti uggle,	•	Volume		Histograms			in columns.	examination series.
and whose			Term 2:	Cumulative			Teachers look for	This allows us to
finaltian	Probabi	ity	Students start Year 10 with revision of	Prequency			clear, concise and	compare our new
final tier	•	Tree diagrams	inter-guartile ranges. They will have seen this	Perpendicular			that is easy for	cohorts, to assess
decision	•	Venn diagrams	in Year 9 too, along with the application to	Exponential			students and others	where the current
	•	Theoretical probability	boxplots, but it appears here as interleaving	Reciprocal			to follow.	cohort stand in
may be	•	Conditional probability	and to act as active retrieval practice. Students	Scale factor				relation to past
more	•	Dependent combined	build on limitations and knowledge of	Invariant			Furthermore, when	cohorts.
inore		events	sampling.	Arc length			the opportunity	Fallowing their and of
unknown,			Indices is taught next, where students need to				arises, teachers may ask students to	Following their end of
students	Statistic	S	recognise powers of 2.3.4.5 and to estimate				explain certain	students receive
Students	•	Measures of central	powers and roots of any given number.				concepts in their	Question Level
will start on		tendency (Median, mean,	Students need to be able to calculate with				own words. This	analysis sheets which
the Higher		mode and modal class)	roots, and with integer and fractional indices.				may be after a	link to maths videos
the fight	•	(Range quartiles and					teacher has	and exercises from
tier scheme		inter-guartile range)	The final topic of Term 2 involves the				explained a certain	HegartyMaths which
ofwork	•	Sampling	able to derive the interior angle sum of any				and wants students	look at their areas of
OF WOLK.	•	Discrete and Continuous	polygons, eventually learning the formula (n-2)				to narrate this in	weakness. This is
		data	* 180. Students should also be familiar with				their own words.	particularly key for
١£	•	Histograms	the names and properties of shapes.					students to use before
11	•	Cumulative Frequency					Oracy	their next round of
appropriate.	•	Box plots	Term 3:				Teachers should	examinations which
	•	Lines of best fit	topics torm 2 involves a number of topics that				ensure that	Voor 11
at a later			have been taught before but need to be				full, eloquent	
stage.			recapped in order for the knowledge to be				sentences and	Pre/Post tests
			"learnt." This includes converting recurring				should ask students	At the beginning and
students			decimals to fractions, problems with bounds,				to repeat these if	end of each topic,
will drop			nth terms of quadratics and linear sequences,				they are not said	students are given a
							correctly. This is to	

down to do	geometric progressions, using surds and		help build their	Pre and Post test on
	fractional and negative indices.		public speaking	the given topic.
the	Students are then taught congruent triangles		skills driu diso to heln the whole	This is hased on
Foundation	and similarity which they were first introduced		school literacy	developments of
roundation	to at the end of Year 7. Students are extended		programme.	cognitive science that
tier exam).	by learning the basic criteria for congruence		- 0	"primes" students'
	but also need to know how to use similar			brains for what they
	lengths to work out similar areas and volumes.			are about to learn. It
				also offers teachers to
	The term concludes applying pythagoras'			assess any prior
	theorem and basic trigonometry. Students also			learning from students
	stage			teaching sequence to
	stage.			the needs of their
	Term 4:			individual students.
	This term starts with simultaneous equations			
	which won't have been seen before. It uses			The post tests also
	extensive algebra skills that have been built up			allow students to build
	within KS3 and Year 9 and now students use			confidence as they can
	this extensively. Students need to be able to			see that they have
	derive and solve two simultaneous equations			learnt topics that they
	solutions using a graph			able to do in the past
				able to do in the past.
	Probability is also revised here whilst also			Although not the most
	introducing independent and dependent			robust form of data to
	events using tree diagrams. Conditional			gather, it does help
	probabilities are also looked at using expected			focus students on
	frequencies with two-way tables, tree diagrams			what they are about to
	and Venn diagrams.			learn and where it fits
				within the
				curriculum and what
	Again, revision of statistics helps students			examination questions
	remember previously covered topics. Here,			on the topics look like.
	students revise histograms, cumulative			
	frequency graphs, boxplots and the dangers of			
	extrapolation.			
	Taura F			
	Lerm 5:			
	Quadratics and re-arranging formulae are a significant part of Term 5 with students			
	expanding brackets, factorising and simplifying			
	and changing the subject.			
	Term 5 finishes looking at Volume, linking to			
	similarity from earlier in the year, and also to			

		find the volume of spheres, pyramids, cones				
		and composite solids. Students, again, should				
		be encouraged to leave answers in terms of				
		"pi."				
		Term 6:				
		To combat the curve of forgetting, students are				
		re-introduced to y=mx + c for parallel and				
		perpendicular lines. Students also look at				
		reciprocal and exponential graphs and solve				
		equations with a variable on both sides of the				
		equation. This was introduced in Year 9 but is				
		a common topic at GCSE and also helps later				
		topics in Year 11 such as tangents to circles so				
		it is important students have a strong grasp of				
		this.				
		Students are also taught to recognise, sketch				
		and interpret graphs of linear functions,				
		quadratic functions, cubic and reciprocal				
		functions.				
		After the summer examination series, students				
		practice solving equations with variables on				
		both sides solving quadratics by factorising				
		and using granhs				
		Finally, the year concludes with revision of				
		geometry and measures. This includes the				
		transformations studied earlier in Year 9				
		Column vector notation is repeated but also				
		students need to be introduced here to the				
		notion of invariance. Volume and Surface area				
		of complex shapes, including frustums, is also				
		revised here along with finding arc lengths,				
		angles and areas of sectors.				
		-				
Year	What do students learn?	Why?	Tier 3 keywords	Threshold concepts	Literacy	Assessment

11	Lichon	Term 1:	Binomials	-	Solving	Reading	Term 2 Y11 PPE
	півцеі	Term 1 starts by exploring algebra in more	Factorising		quadratics in	Students are often	Beginning of
(The Vast		Students should have already learnt how to	Quadratics	_	3D Pythagoras	work or worksheets	3 x 1 5 Hour GCSE
maiority of	Algebra	expand double brackets but are introduced	Fauations		and	that involve worded	Papers
indjointy of	Expanding brackets	here to triple brackets. Students will factorise	Expressions		Trigonometry	problems. This will	. apero
students in	Factorising quadratics	harder quadratics, including the difference of	Identities		problems	help them develop	
Voor O will	Re-arranging formulae	two squares. Building on work from Year 9,	Inverse function	-	Equations of	their reading and	Term 3 Y11 PPE
real 9 will	Algebraic proof	students will need to be able to recognise the	Composite		circles	inference skills and	End of February
follow the	Functions	difference between expressions, equations,	function	-	Transforming	also expose them to	3 x 1.5 Hour GCSE
11:	Equations of circles	identities and be able to use algebra in proofs.	Iteration		functions	a greater variety of	Papers
Higher tier	Iangents to circles     Solving equations	Inverse Composite Eurotions are introduced	Tangent	-	Finding	vocabulary.	
scheme of	<ul> <li>Solving equations (including quadratics)</li> </ul>	here for the first time. This is taught here after	completing the		gradients of	Writing	Students have two sets
	Sketch graphs (quadratics)	students have practised rearranging formulae	Quadratic formula	-	Algebraic	Although there is	of "Pre Public
work.	linear. cubic. reciprocal.	in year 10 and Year 9.	Roots		fractions	less extended	Examinations (PPEs)"
	trigonometric)	,	Turning point			writing in Maths,	in November and
	Completing the square	Students will also build on their knowledge of	Direct/Inverse			working out is key.	February.
For	Inequalities	trigonometry and Pythagoras by looking at 3D	Proportion				
	Transforming functions	problems. Exact trigonometric values will be	Inequalities			Students are	The examinations offer
students	Iteration	seen here and students will need to learn these	Vectors			encouraged to work	teachers a chance to
that may	Pre-calculus and area	off by heart or know now to derive them.	Proof			down the page by	assess the learning of
chat may	under a curve	The term finishes by looking at compound	Reciprocal			in two and working	areas of strength and
struggle,	Algebraic fractions	interest and depreciation. This builds on the	Cubic			in columns.	areas that need
andwhaca	Patio Broportion and Patos of	knowledge of percentage multipliers covered	Sine rule			Teachers look for	improvements.
and whose	Change	earlier in their school career.	Cosine rule			clear, concise and	
final tier	Growth and Decay		Segment			correct working out	After each
al a a : a : a :a	Compound Interest	Term 2:	Chord			that is easy for	examination, students
decision	Direct and Inverse	Term 2 starts by looking at the equations of	Tangent			students and others	will be given Question
may be	proportion	circles with the centre at the origin. Students	Radii			to follow.	Level Analysis sheets
may be	Gradients and Rates of	will use their knowledge of $y = 11x + c$ to be	Cyclic guadrilatoral			Eurthormoro whon	which link to maths
more	change	circles at a given point.	Gradient			the opportunity	on "HegartyMaths"
unknown						arises, teachers	which students can
	Geometry and Measures	Students then continue working through				may ask students to	then use to address
students	Frigonometry     Start values	algebra, including solving equations where re-				explain certain	their weakest areas.
will start on	Exact values     Vectors	arranging is required. Completing the square				concepts in their	
WIII Start Off	Geometric arguments and	and the Quadratic Formula are introduced here				own words. This	After the November
the Higher	proofs	as ways to solve quadratics. Students will be				may be after a	examination series,
	Sine and Cosine rules	intercents, deduce roots and finding turning				overlained a cortain	students are given a
tier scheme	Circle Theorems	points of quadratics.				concept to the class	papers in a plastic
of work						and wants students	wallet which also
	Revision	Students build on the work in Year 8 with				to narrate this in	contain the papers'
		direct and inverse proportion by using algebra				their own words.	answers. Students are
		to solve problems. Students are required to					advised and
						Oracy	encouraged to

If	form and solve equations themselves and also	Teachers should complete the 12
11	recognise graphs that illustrate proportion.	ensure that papers before the
appropriate,		students answer in February examination
atalator	I erm 3:	full, eloquent series in order to
	needed to solve linear inequalities in one or	should ask students
stage,	two variable and guadratic variables in one	to repeat these if <b>Pre/Post tests</b>
students	variable. Students are also needed to	they are not said At the beginning and
students	represent the solution set on a number line,	correctly. This is to end of each topic,
will drop	using set notation on a graph.	help build their students are given a
down to do	Students then look at vectors including the	public speaking Pre and Post test on
down to do	addition and subtraction of vectors, and using	help the whole
the	vectors to construct geometric arguments and	school literacy This is based on
	proofs.	programme. developments of
Foundation		cognitive science that
tier exam).	Students then need to recognise, sketch and	"primes" students'
	interpret graphs of linear functions, quadratic	brains for what they
	Students will also need to recognise	also offers teachers to
	trigonometric graphs and exponential	assess any prior
	functions.	learning from students
		and adapt their
	Term 4:	teaching sequence to
	Term 4 starts the term developing the sine rule	the needs of their
	and cosine rule. Students will be introduced to	individual students.
	area of a triangle, find missing sides or angles	The post tests also
	of a triangle.	allow students to build
		confidence as they can
	At this point in the term, students will also be	see that they have
	introduced to transforming functions and	learnt topics that they
	reflections of a given function. Students	may not have been
	guadratics and trigonometry by know which is	able to do in the past.
	why transformations of graphs is introduced	Although not the most
	here.	robust form of data to
		gather, it does help
	The students then move on to looking at	focus students on
	numerical methods including 'iteration' where	what they are about to
	formulas	iearn and where it fits within the
		mathematics
	The term concludes introducing students to	curriculum and what
	circle theorems, including applying and proving	examination questions
	the standard circle theorems.	on the topics look like.
	Term 5:	
L		

	Term 5 starts looking at gradients and rates of		
	change. Students look at interpreting the		
	gradient at a point on a curve and apply the		
	concepts of average and instantaneous rates of		
	change (gradients of chords and tangents) in		
	numerical, algebraic and graphical contexts.		
	The penultimate topic of the course is "pre-		
	calculus and area under a curve." Students		
	must calculate or estimate gradients of graphs		
	and areas under graphs (including quadratic		
	and non-linear graphs). Students must then		
	interpret the results in cases such as distance-		
	time graphs, velocity-time graphs and graphs in		
	financial contexts.		
	The final topic is algebraic fractions where		
	students will use all of their algebra skills to		
	date to solve problems. This is introduced here		
	as it incorporates a lot of previous topics that		
	students must be secure about, including		
	factorising quadratics and the four operations		
	with fractions.		
	The term concludes with revision.		
	Term 6:		
	Term 6 involves revision of topics identified		
	from the Question Level Analysis (QLAs) from		
	the February examination series. Teachers will		
	tailor lessons to address any gaps in students'		
	knowledge.		
	Students will also complete past paper		
	bookiets that they will be given to prepare		
	students for their examinations.		