

# **SUBJECT: MATHEMATICS – Higher Pathway - Upper**

Year Group	Year 11						
Rationale	To be fully fluent i and act upon the f confidence in app	n mathematical thi eedback given aft lying knowledge to	inking, problem solv er mock and trial ex a AO2/AO3 style que	ing and communica ams. To further dev estions.	tion. To fine tune re relop resilience and	vision techniques to build student	
Topic/Skills	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2	
Knowledge	<ul> <li>Continue with missed content from EOY10</li> <li>Transform- ations</li> <li>Algebraic Proof</li> <li>Constructions &amp; Loci</li> </ul>	Congruency Circle Geometry Time Series Graphs Cubic & Exponential Graphs, Growth & Decay	<ul> <li>Actions from Mock Exam Analysis and Past Papers: Revise Key Areas</li> <li>Focus on any learning opportunities missed due to COVID-19 (varies for each specific class)</li> </ul>	<ul> <li>Actions from Trial Exam Analysis and Past Papers: Revise Key Areas</li> <li>Continue to work through key topics missed due to COVID-19.</li> </ul>	Revision		
Skills	Transformations Recognise, describe and draw rotations using a centre of rotation, angle and direction. Recognise, describe and draw reflections using a mirror line and its equation. Recognise, describe and draw translations using a column vector. Recognise, describe and draw enlargements using a column vector. Recognise, describe and draw enlargements using a centre of enlargement (and without) and a scale factor, including fractional and negative values. Describe the effect of combined transformations as a single transformation. Describe the changes and invariance achieved after combined transformations. <u>Algebraic Proof</u> Know how to represent odd, even and consecutive	Congruency Understand and use SSS, SAS, ASA and RHS conditions to prove the congruency of triangles using formal arguments. Verify conditions of congruency using constructions. Solve angle problems by first proving congruency. <u>Circle Geometry</u> Find the equation of a tangent to a circle at a given point, by finding the gradient of the radius that meets the circle at hat point. Find the equation of a tangent to a circle at that point. Find the equation of a tangent to a circle at a given point, by finding the gradient of the radius that meets the circle at a given point by finding the gradient of the line perpendicular to it or by using the given point.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Engage in revision and recap lessons focussing on key identified topics.		



integers	Time Series		
algebraically.	Graphs		
Solve 'show	Construct and		
that' style	interpret time-		
problems using	series graphs,		
consecutive	commenting		
integers,	on trends.		
squares, cubes,			
even and odd	Cubic &		
integers.	Exponential		
Solve formal	Graphs,		
proof questions	Growth &		
using	<u>Decay</u> Decay		
integers	Recognise a		
squares cubes	nuedratic		
even and odd	cubic		
integers as well	reciprocal		
as the	circle and		
expansion and	exponential		
simplification of	graph from its		
brackets.	shape.		
	Sketch graphs		
Constructions &	of simple cubic		
Loci	functions given		
Produce	as three linear		
standard ruler	expressions		
and compasses	and define the		
constructions:	function as a		
bisect a given	single		
a perpendicular	equalion by		
to a given line	brackets		
from/at a given	Recognise.		
point:	sketch and		
angles of 90°,	interpret		
60°, 45° and	graphs of the		
30°;	exponential		
a perpendicular	function $y =$		
bisector of a line	kx for positive		
segment.	values of k		
	and integer		
Construct when	values of x.		
SOIVING IOCI	Set up, solve		
problems.	and interpret		
bounded by a	arowth and		
circle and an	decav		
intersecting line;	problems.		
a given distance	•		
from a point;			
a given distance			
from a line;			
equal distances			
from two points;			
equal distances			
nom two line			
regions which			
may be defined			
by 'nearer to' or			
'greater than'.			
Find and			
describe regions			
which satisfy a			
combination of			
loci.			
Solve loci and			
constructions			
problems using			
and bearings			



Assessmen	Assessment 16	Mock Exams		Trial Exams	GCSE Exams	GCSE Exams
ts					P1	P2 & P3
	Mathswatch:	Mock shadow	Shadow paper	Trial shadow	Predicted	Predicted
Homework	Higher upper	paper		paper	papers 1,2,3	papers 2,3
	Assessment 16	6 x half	Set B 1A	6x half shadow		
	revision	shadow	Set B 1B	papers		
		papers	Set B 2A			
	Shadow paper		Set B 2B	1A		
	Set A 1A	1A	Set B 3A	1B		
	Set A 1B	1B	Set B 3B	2A		
	Set A 2A	2A		2B		
	Set A 2B	2B		3A		
	Set A 3A	3A		3B		
	Set A 3B	3B				



# **SUBJECT: MATHEMATICS – Higher Pathway - Lower**

Rationale       To be capable and confidence in mathematical thinking, problem solving and communication. To fine tune revision to huld student confidence in applying two-knowledge to AG2/AG3 style questions.       To be capable and confidence in applying two-knowledge to AG2/AG3 style questions.       Summer Term       Summer Term       Summer Term         To be capable and confidence in applying two-knowledge       • Transformations       • Congruency       • Actions from       • Actions from       • Revision       • Revision         Autumn Term 1       • Constructions       • Constructions       • Constructions       • Constructions       • Revision       • Revision         Constructions       • Constructions       • Constructions       • Constructions       • Revision       • Revision         Skills       Transformations using a constructions using a constructions using a constructions on groupercy of transformations on groupercy of transformations and recap lessons focussing on key identified topics.       • Complete internal work intercept lessons focussing on key identified topics.       Engape in revision and recap lessons focussing on key identified topics.         Recognise, describe and draw reflections using a continue vertice of rotations of transformations as a stale factor, including for thermal work interpret time-recap lessons focussing on key identified topics.       Engape in revision and recap lessons focussing on key identified topics.         Skills       Transformations as a single transformations as a single transformatins topy terms by terms by terems by terms by t	Year Group	Year 11					
Topic/Unit       Autumn Term       Autumn Term       Spring Term 1       Spring Term 2       Summer Term       Summer Term <th>Rationale</th> <th>To be capable and on techniques and act build student confide</th> <th>confident in mathe upon the feedback ence in applying ki</th> <th>matical thinking, proble given after mock and nowledge to AO2/AO3</th> <th>m solving and con trial exams. To fur style questions.</th> <th>nmunication. To ther develop res</th> <th>fine tune revision ilience and to</th>	Rationale	To be capable and on techniques and act build student confide	confident in mathe upon the feedback ence in applying ki	matical thinking, proble given after mock and nowledge to AO2/AO3	m solving and con trial exams. To fur style questions.	nmunication. To ther develop res	fine tune revision ilience and to
Knowledge       * Transformations       * Congruency       * Adgebraic Profile       * Revision       * Revision         • Algebraic Profile       • Congruency       * Revision       * Revision       * Revision         • Constructions & Loci       • Congruency       • Congruency       * Revision       * Revision         • Constructions & Loci       • Congruency       • Congruency       * Revise Revise Key Areas       * Adaptatic Network Evan Analysis and Past Revise Revise Revi	Topic/Unit	Autumn Term 1	Autumn Term	Spring Term 1 Sp	ring Term 2 S	Summer Term	Summer Term 2
Skills     Transformations     Congruency Understand describe and draw rotations using a entree of rotation, angle and direction     Complete internal exams and past papers.     Complete avans and past papers.     Complete avans and past papers.     Engage in revision and recap     Engage in revision and recap       angle and describe and draw reflections using a mirror line and its equation.     SAS, ASA and conditions to prove the congruency of transless using a column vector.     Complete internal exams and past papers.     Complete avans and past papers.     Engage in revision and recap lessons focussing on key identified topics.       Recognise, describe and draw translations using a column vector.     Congruency translations using a column vector.     Complete avans and past papers.     Complete avans and past papers.     Engage in revision and recap       Necognise, describe and draw translations using using a centre of enlargements using a centre of enlargement (and megative values. Describe the effect of combined transformations a snigle transformations a single transformations a single transformations a single transformations cobic, reciprocal transformations     Complete avans a single     Complete completers transformations constructions.     Complete completers transformations cobic, reciprocal transformation     Cubic, reciprocal transformations     Cubic, reciprocal transformation     Cubic, reciprocal transformation     Cubic, reciprocal transformation     Cubic, reciprocal transformation     Cubic, reciprocal transformation     Exponential & transformation	Knowledge	<ul> <li>Transformations</li> <li>Algebraic Proof</li> <li>Constructions &amp; Loci</li> </ul>	<ul> <li>Congruency</li> <li>Time Series Graphs</li> <li>Cubic, Exponential &amp; Reciprocal Graphs</li> </ul>	<ul> <li>Actions from Mock Exam Analysis and Past Papers: Revise Key Areas</li> <li>Focus on any learning opportunities missed due to COVID-19 (varies for each specific class).</li> </ul>	<ul> <li>Actions from Trial Exam Analysis and Past Papers: Revise Key Areas</li> <li>Continue to work</li> <li>through key topics missed due to COVID- 19.</li> </ul>	<ul> <li>Revision</li> </ul>	•
even and       shape.         consecutive       Sketch graphs         integers       of simple cubic         algebraically.       functions given         Solve 'show that'       as three linear         style problems       expressions	Skills	Transformations Recognise, describe and draw rotations using a centre of rotation, angle and direction. Recognise, describe and draw reflections using a mirror line and its equation. Recognise, describe and draw translations using a column vector. Recognise, describe and draw enlargements using a centre of enlargement (and without) and a scale factor, including fractional and negative values. Describe the effect of combined transformations as a single transformation. Describe the changes and invariance achieved after combined transformations. <u>Algebraic Proof</u> Know how to represent odd, even and consecutive integers algebraically. Solve 'show that' style problems	Congruency Understand and use SSS, SAS, ASA and RHS conditions to prove the congruency of triangles using formal arguments. Verify conditions of congruency using constructions. Solve angle problems by first proving congruency. <u>Time Series Graphs</u> Construct and interpret time- series graphs, commenting on trends. <u>Cubic, Exponential &amp;</u> <u>Recognise a</u> linear, quadratic, cubic, reciprocal, circle and exponential graph from its shape. Sketch graphs of simple cubic functions given as three linear expressions	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Engage in revision and recap lessons focussing on key identified topics.	



	integers, squares, cubes, even and odd integers. Solve formal proof questions using consecutive integers, squares, cubes, even and odd integers, as well as the expansion and simplification of brackets. <u>Constructions &amp;</u> <u>Loci</u> Produce standard ruler and compasses constructions: bisect a given line or angle; a perpendicular to a given line from/at a given point; angles of 90°, 60°, 45° and 30°; a perpendicular bisector of a line segment. Construct when solving loci problems: a region bounded by a circle and an intersecting line;	function as a single equation by expanding the brackets. Recognise, sketch and interpret graphs of the exponential function $y = k^x$ for positive values of k and integer values of x. Draw graphs of the reciprocal function $y = 1/x$ with $x \neq 0$ , using a table of values. For reciprocal graphs be able to state the value of x for which the equation is not defined.				
	from two line segments; regions which may be defined by 'nearer to' or 'greater than'. Find and describe regions which satisfy a combination of loci. Solve loci and constructions problems using scale drawings and bearings					
Assess- ments	Assessment 16	Mock Exams		Trial Exams	GCSE Exams	GCSE Exams P2 & P3
Homework	Mathswatch : Higher upper Assessment 16 Revision Shadow paper Set A 1A Set A 2A Set A 3A	Mock shadow paper 6 x half shadow papers 1A 1B 2A 2B 3A	Revision shadow paper Set C 1A Set C 1B Set C 2A Set C 2B Set C 3A Set C 3B	Trial shadow paper 6 x half shadow papers 1A 1B 2A 2B	Predicted papers 1,2,3	Predicted papers 2,3

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Shadow paper Set B 1A Set B 2A Set B 3A	3B		3A 3B		



#### **SUBJECT: MATHEMATICS – Foundation Pathway - Upper**

Year Group	YEAR 11					
Rationale	To be capable and o techniques and act	confident in mathe	matical thinking, proble c given after mock and t	m solving and con trial exams. To fur	nmunication. To ther develop res	fine tune revision ilience and to
Topic/Unit	build student confide	ence in applying k Autumn Term	nowledge to AO2/AO3 Spring Term 1	style questions. Spring Term	Summer	Summer Term
Kasada las	- Osestrustises 9	2		2	Term 1	2
Knowledge	Constructions & Loci     Vectors	Congruency     Compound     Measures	<ul> <li>Actions from Mock Exam Analysis and Past Papers: Revise Key Areas</li> <li>Focus on any learning opportunities missed due to COVID-19 (varies for each specific class).</li> </ul>	<ul> <li>Actions from Trial Exam Analysis and Past Papers: Revise Key Areas</li> <li>Continue to work through key topics missed due to COVID- 19.</li> </ul>	Revision	•
Skills	Constructions & Loci Produce standard ruler and compasses constructions: bisect a given line or angle; a perpendicular to a given line from/at a given point; angles of 90° and 45°, a perpendicular bisector of a line segment. Construct when solving loci problems: a region bounded by a circle and an intersecting line; a given distance from a point; a given distance from a line; equal distances from two points; equal distances from two points; regions which may be defined by 'nearer to' or 'greater than'. Find and describe regions which satisfy a combination of loci. Solve loci and constructions problems using scale drawings and bearings.	Congruency Identify, by eye, shapes that are congruent. Understand and use the basic congruence criteria for triangles: SSS, SAS, ASA and RHS (not proofs). Compound Measures Understand and use in calculations the compound measures of: density, mass and volume; pressure, force and area; speed, distance and time. Convert between metric speed measurements With given formulae and variables, use kinematics formulae to calculate speed and acceleration. Use calculators efficiently when working with elements of time.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Engage in revision and recap lessons focussing on key identified topics.	



	Use column vectors to describe vectors. Represent vectors graphically from given column vectors. Identify column vectors which are parallel. Calculate using column vectors or diagrams the sum or difference of two vectors and represent this as a single column vector or diagram. Calculate using column vectors the scalar multiple of a vector and give the answer as a single column vector or diagram. Use simple algebra to represent vectors and simple vector sums or differences.					
Assess- ments	Assessment 16	Mock Exams		Trial Exams	GCSE Exams P1	GCSE Exams P2 & P3
Homework	Mathswatch: Foundation upper assessment 16 revision assignment Set A 1A Set A 1B Set A 2A Set A 2B Set A 3A Set A 3B	Mock shadow paper 6 x half shadow papers 1A 1B 2A 2B 3A 3B	Revision shadow paper Set C 1A Set C 1B Set C 2A Set C 2B Set C 3A Set C 3B	Trial shadow paper 6 x half shadow papers 1A 1B 2A 2B 3A 3B	Predicted papers 1,2,3	Predicted papers 2,3



# **MATHEMATICS:** Curriculum map – Foundation Pathway - Lower

Year Group	Year 11					
Rationale	To be capable and o techniques and act	confident in mathe upon the feedback	matical thinking, prob given after mock and	lem solving and cor d trial exams. To fur	nmunication. To ther develop res	fine tune revision ilience and to
Topic/Unit	Autumn Term 1	Autumn Term	Spring Term 1	Spring Term 2	Summer	Summer Term
Knowledge	<ul> <li>Constructions &amp; Loci</li> <li>Factors, Multiples &amp; Primes revisit</li> <li>Using Pythagoras' Theorem</li> </ul>	<ul> <li>Compound Measures</li> <li>Averages, Range &amp; Tables</li> <li>Fractions &amp; Mixed Numbers</li> </ul>	<ul> <li>Actions from Mock Exam Analysis and Past Papers: Revise Key Areas</li> <li>Focus on any learning opportunities missed due to COVID-19 (varies for each specific class).</li> </ul>	<ul> <li>Actions from Trial Exam Analysis and Past Papers: Revise Key Areas</li> <li>Continue to work through key topics missed due to COVID-19.</li> </ul>	Revision	-
Skills	Constructions & Loci Produce standard ruler and compasses constructions: bisect a given angle; angles of 90° and 45°, a perpendicular bisector of a line segment. Construct when solving simple loci problems: a region bounded by a circle and an intersecting line; a given distance from a point; a given distance from a line; equal distances from two points; equal distances from two points; equal distances from two line segments; regions which may be defined by 'nearer to' or 'greater than'. Find and describe regions which satisfy a combination of simple loci. <u>Factors, Multiples &amp; Primes revisit</u> List all numbers that can be made from given sets of digits. Define and identify factors, multiples and prime numbers.	Compound Measures Understand and use in calculations the compound measures of: density, mass and volume; pressure, force and area; speed, distance and time, all in simple cases. Use calculators efficiently when working with elements of time. Read values from a speedometer. <u>Averages.</u> <u>Range &amp; Tables</u> Calculate the mean, mode, median and range from small data sets. Find the median, mode and mean from a frequency table. Find the class interval containing the median and mode in a grouped frequency table.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.	Engage in revision and recap lessons focussing on key identified topics.	



	List all factors of a	Find an				
	number	estimated				
	List multiples of	drouped				
	integers	frequency				
	Write a number in	table				
	prime factor form					
	including using	Fractions &				
	index notation.	Mixed				
	Find common	Numbers				
	factors and	Write a				
	common multiples	fraction in its				
	of two numbers.	simplest form				
	Find the LCM and	and find				
	HCF including	equivalent				
	using venn	fractions.				
	listing	between				
	Solve simple	improper				
	problems using	fractions and				
	the HCF, LCM or	mixed				
	prime numbers.	numbers.				
		Add and				
	Using Pythagoras'	subtract				
	<u>I heorem</u>	tractions				
	Understand and	including				
	theorem to find	numbers				
	missing lengths in	Multiply and				
	given right angle	divide an				
	triangles – for a	integer by a				
	hypotenuse and	fraction.				
	other shorter side.	Multiply and				
		divide fractions				
	Give an answer to	including				
	a Pythagoras	mixed				
	question in surd	numbers.				
	form.	Find the				
	triangle is right	necipiocal of				
	analed using	fraction				
	Pythagoras'	naction.				
	theorem.					
	Calculate the					
	length of a line					
	segment on a co-					
	ordinate grid.					
Assess-	Assessment 16	Mock Exams		Trial Exams	GCSE	GCSE Exams
ments					Exams	P2 & P3
Homework	Foundation lower	Mock shadow	Revision shadow	Trial shadow	Predicted	Predicted paper
	assessment 16	paper	paper	paper	papers 1,2,3	1,2
	revision	6 x half				
	assignment	shadow	Set C 1A	6 x half shadow		
		papers	Set C 1B	papers		
	Revision Shadow		Set C 2A	1A		
	paper	1A 1B	Set C 2B	1B		
	Set A 1A	1B	Set C 3A	2A 2P		
	Set A 2A	2A 2B	Set C 3B	2D 3A		
	JELA JA	3A		3B		
	Shadow paper Set	3B				
	B 1A					
	Set B 2A					
	Set B 3A					