


SUBJECT: MATHEMATICS – Higher Pathway - Upper

Year Group	Year 11					
Rationale	To be fully fluent in mathematical thinking, problem solving and communication. To fine tune revision techniques and act upon the feedback given after mock and trial exams. To further develop resilience and to build student confidence in applying knowledge to AO2/AO3 style questions.					
Topic/Skills	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Knowledge	<ul style="list-style-type: none"> ▪ Continue with missed content from EOY10 ▪ Transformations ▪ Algebraic Proof ▪ Constructions & Loci 	Congruency <ul style="list-style-type: none"> ▪ Circle Geometry ▪ Time Series Graphs ▪ Cubic & Exponential Graphs, Growth & Decay 	<ul style="list-style-type: none"> ▪ Actions from Mock Exam Analysis and Past Papers: Revise Key Areas ▪ Focus on any learning opportunities missed due to COVID-19 (varies for each specific class) 	<ul style="list-style-type: none"> ▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19. 	<ul style="list-style-type: none"> ▪ Revision 	
Skills	<p><u>Transformations</u> 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.</p> <p><u>Algebraic Proof</u> Know how to represent odd, even and consecutive</p>	<p><u>Congruency</u> 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.</p> <p><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 that point. Find the equation of a tangent to a circle at a given point by finding the gradient of the line perpendicular to it or by using the given point.</p>	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.	



	<p>integers algebraically. Solve 'show that' style problems using consecutive 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.</p> <p><u>Constructions & 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.</p> <p>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 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.</p>	<p><u>Time Series Graphs</u> Construct and interpret time-series graphs, commenting on trends.</p> <p><u>Cubic & Exponential Graphs, Growth & Decay</u> Recognise a linear, quadratic, cubic, reciprocal, circle and exponential graph from its shape. Sketch graphs of simple cubic functions given as three linear expressions and define the 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. Set up, solve and interpret exponential growth and decay problems.</p>				
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St Edmund Arrowsmith **Catholic** High School: Curriculum (2022-23)



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


SUBJECT: MATHEMATICS – Higher Pathway - Lower

Year Group	Year 11					
Rationale	To be capable and confident in mathematical thinking, problem solving and communication. To fine tune revision techniques and act upon the feedback given after mock and trial exams. To further develop resilience and to build student confidence in applying knowledge to AO2/AO3 style questions.					
Topic/Unit	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Knowledge	<ul style="list-style-type: none"> ▪ Transformations ▪ Algebraic Proof ▪ Constructions & Loci 	<ul style="list-style-type: none"> ▪ Congruency ▪ Time Series ▪ Graphs ▪ Cubic, Exponential & Reciprocal Graphs 	<ul style="list-style-type: none"> ▪ Actions from Mock Exam Analysis and Past Papers: Revise Key Areas ▪ Focus on any learning opportunities missed due to COVID-19 (varies for each specific class). 	<ul style="list-style-type: none"> ▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19. 	<ul style="list-style-type: none"> ▪ Revision 	<ul style="list-style-type: none"> ▪
Skills	<p><u>Transformations</u> 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.</p> <p><u>Algebraic Proof</u> Know how to represent odd, even and consecutive integers algebraically. Solve 'show that' style problems using consecutive</p>	<p><u>Congruency</u> 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.</p> <p><u>Time Series Graphs</u> Construct and interpret time-series graphs, commenting on trends.</p> <p><u>Cubic, Exponential & Reciprocal Graphs</u> Recognise a linear, quadratic, cubic, reciprocal, circle and exponential graph from its shape. Sketch graphs of simple cubic functions given as three linear expressions and define the</p>	<p>Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.</p>	<p>Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.</p>	<p>Engage in revision and recap lessons focussing on key identified topics.</p>	



	<p>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.</p> <p><u>Constructions & 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.</p> <p>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 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.</p>	<p>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.</p>				
Assess-ments	Assessment 16	Mock Exams		Trial Exams	GCSE Exams P1	GCSE Exams P2 & P3
Homework	<p>Mathswatch : Higher upper Assessment 16</p> <p>Revision Shadow paper Set A 1A Set A 2A Set A 3A</p>	<p>Mock shadow paper 6 x half shadow papers 1A 1B 2A 2B 3A</p>	<p>Revision shadow paper Set C 1A Set C 1B Set C 2A Set C 2B Set C 3A Set C 3B</p>	<p>Trial shadow paper 6 x half shadow papers 1A 1B 2A 2B</p>	Predicted papers 1,2,3	Predicted papers 2,3

St Edmund Arrowsmith **Catholic** High School: Curriculum (2022-23)



	Shadow paper Set B 1A Set B 2A Set B 3A	3B		3A 3B		
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SUBJECT: MATHEMATICS – Foundation Pathway - Upper

Year Group	YEAR 11					
Rationale	To be capable and confident in mathematical thinking, problem solving and communication. To fine tune revision techniques and act upon the feedback given after mock and trial exams. To further develop resilience and to build student confidence in applying knowledge to AO2/AO3 style questions.					
Topic/Unit	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Knowledge	<ul style="list-style-type: none"> Constructions & Loci Vectors 	<ul style="list-style-type: none"> Congruency Compound Measures 	<ul style="list-style-type: none"> Actions from Mock Exam Analysis and Past Papers: Revise Key Areas Focus on any learning opportunities missed due to COVID-19 (varies for each specific class). 	<ul style="list-style-type: none"> Actions from Trial Exam Analysis and Past Papers: Revise Key Areas Continue to work through key topics missed due to COVID-19. 	<ul style="list-style-type: none"> Revision 	<ul style="list-style-type: none">
Skills	<p><u>Constructions & 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° 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 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.</p> <p><u>Vectors</u></p>	<p><u>Congruency</u> Identify, by eye, shapes that are congruent. Understand and use the basic congruence criteria for triangles: SSS, SAS, ASA and RHS (not proofs).</p> <p><u>Compound Measures</u> 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.</p>	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.	



	<p>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.</p>					
Assess-ments	Assessment 16	Mock Exams		Trial Exams	GCSE Exams P1	GCSE Exams P2 & P3
Homework	<p>Mathswatch: Foundation upper assessment 16 revision assignment</p> <p>Set A 1A Set A 1B Set A 2A Set A 2B Set A 3A Set A 3B</p>	<p>Mock shadow paper 6 x half shadow papers</p> <p>1A 1B 2A 2B 3A 3B</p>	<p>Revision shadow paper</p> <p>Set C 1A Set C 1B Set C 2A Set C 2B Set C 3A Set C 3B</p>	<p>Trial shadow paper</p> <p>6 x half shadow papers</p> <p>1A 1B 2A 2B 3A 3B</p>	Predicted papers 1,2,3	Predicted papers 2,3


MATHEMATICS: Curriculum map – Foundation Pathway - Lower

Year Group	Year 11					
Rationale	To be capable and confident in mathematical thinking, problem solving and communication. To fine tune revision techniques and act upon the feedback given after mock and trial exams. To further develop resilience and to build student confidence in applying knowledge to AO2/AO3 style questions.					
Topic/Unit	Autumn Term 1	Autumn Term 2	Spring Term 1	Spring Term 2	Summer Term 1	Summer Term 2
Knowledge	<ul style="list-style-type: none"> ▪ Constructions & Loci ▪ Factors, Multiples & Primes revisit ▪ Using Pythagoras' Theorem 	<ul style="list-style-type: none"> ▪ Compound Measures ▪ Averages, Range & Tables ▪ Fractions & Mixed Numbers 	<ul style="list-style-type: none"> ▪ Actions from Mock Exam Analysis and Past Papers: Revise Key Areas ▪ Focus on any learning opportunities missed due to COVID-19 (varies for each specific class). 	<ul style="list-style-type: none"> ▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19. 	<ul style="list-style-type: none"> ▪ Revision 	<ul style="list-style-type: none"> ▪
Skills	<p><u>Constructions & Loci</u> 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 line segments; regions which may be defined by 'nearer to' or 'greater than'. Find and describe regions which satisfy a combination of simple loci.</p> <p><u>Factors, Multiples & Primes revisit</u> List all numbers that can be made from given sets of digits. Define and identify factors, multiples and prime numbers.</p>	<p><u>Compound Measures</u> 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.</p> <p><u>Averages, Range & 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.</p>	<p>Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.</p>	<p>Complete internal exams and past papers. Engage in revision and recap lessons focussing on key identified topics.</p>	<p>Engage in revision and recap lessons focussing on key identified topics.</p>	



	<p>List all factors of a number systematically. List multiples of integers. Write a number in prime factor form including using index notation. Find common factors and common multiples of two numbers. Find the LCM and HCF including using Venn diagrams or listing. Solve simple problems using the HCF, LCM or prime numbers.</p> <p><u>Using Pythagoras' Theorem</u> Understand and use Pythagoras' theorem to find missing lengths in given right angle triangles – for a hypotenuse and other shorter side.</p> <p>Give an answer to a Pythagoras question in surd form. Justify whether a triangle is right-angled using Pythagoras' theorem. Calculate the length of a line segment on a co-ordinate grid.</p>	<p>Find an estimated mean from a grouped frequency table.</p> <p><u>Fractions & Mixed Numbers</u> Write a fraction in its simplest form and find equivalent fractions. Convert between improper fractions and mixed numbers. Add and subtract fractions including mixed numbers. Multiply and divide an integer by a fraction. Multiply and divide fractions including mixed numbers. Find the reciprocal of an integer or a fraction.</p>				
Assess-ments	Assessment 16	Mock Exams		Trial Exams	GCSE Exams P1	GCSE Exams P2 & P3
Homework	<p>Foundation lower assessment 16 revision assignment</p> <p>Revision Shadow paper Set A 1A Set A 2A Set A 3A</p> <p>Shadow paper Set B 1A Set B 2A Set B 3A</p>	<p>Mock shadow paper 6 x half shadow papers</p> <p>1A 1B 2A 2B 3A 3B</p>	<p>Revision shadow paper</p> <p>Set C 1A Set C 1B Set C 2A Set C 2B Set C 3A Set C 3B</p>	<p>Trial shadow paper</p> <p>6 x half shadow papers 1A 1B 2A 2B 3A 3B</p>	<p>Predicted papers 1,2,3</p>	<p>Predicted paper 1,2</p>