SUBJECT: MATHEMATICS – Advanced +

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.					
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Topic/Skills	▪ Transformations ▪ Algebraic Proof ▪ Constructions & Loci	▪ Congruency ▪ Circle Geometry ▪ Time Series Graphs ▪ Cubic & Exponential Graphs, Growth & Decay	▪ 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)	▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19.	▪ Revision	Revision
Knowledge	<u>Transformations</u> Pupils will describe and draw rotations using an angle, direction of turn and centre of rotation. Pupils will describe and draw reflections using a mirror line and its equation. Pupils will describe and draw translations using column vectors. Pupils will describe and draw enlargements using a scale factor including fractional and negative values and with/without a centre of enlargement. Pupils will know how to describe the effect of combined transformations as a single transformation and be able to describe the changes and invariance achieved after combined transformations. <u>Algebraic Proof</u> Pupils will know how to represent odd, even and consecutive integers algebraically.	<u>Congruency</u> Pupils will understand and know how to use the congruency conditions of SSS, SAS, ASA and RHS to prove the congruency of triangles. Pupils will be able to verify conditions of congruency using constructions. Pupils will be able to solve angle problems by first proving congruency. <u>Circle Geometry</u> Pupils will know how to find the equation of a tangent to a circle at a given point. Pupils will be able to find the equation of a tangent to a circle at a given point, finding the gradient of the line perpendicular to it or by using the given point. <u>Time Series Graphs</u> Pupils will be able to construct and interpret time-series graphs,	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independe nt learning, improving their full understand ing of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independe nt learning, improving their full understand ing of all topics. Complete internal exams and past papers.

	Pupils will be able to solve 'show that' style problems using consecutive integers, even & odd integers. Squares and cubes. Pupils will know how to solve formal proof questions using consecutive integers, even and odd integers squares & cubes as well as the expansion and simplification of brackets. <u>Constructions & Loci</u> Pupils will be able to produce standard ruler and compasses constructions. Pupils will know what to construct when solving loci problems. Pupils will be able to find and describe regions which satisfy a combination of loci and solve loci and constructions problems using scale drawings and bearings.	commenting on trends. <u>Cubic & Exponential Graphs, Growth & Decay</u> Pupils will recognise linear, quadratic, cubic, reciprocal, circle and exponential graphs from their shapes. Pupils will be able to sketch graphs of simple cubic functions given as three linear expressions and define the function as a single equation. Pupils will know and be able to, sketch/interpret graphs of the exponential function $y = k^x$ for positive values of k and integer values of x. Pupils will know how to set up, solve and interpret exponential growth and decay problems.				
Skills	<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	<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. <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.	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.	Engage in revision and recap lessons focussing on key identified topics.

	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 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. <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. 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	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. <u>Time Series Graphs</u> Construct and interpret time-series graphs, commenting on trends. <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.				

	combination of loci. Solve loci and constructions problems using scale drawings and bearings.					
Assessments Formative	Assessment 16 1 Open book End-of-topic quizzes. Regular use of whiteboards in lessons	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	
Assessments Summative	Mock exam Paper 1	Mock exam Papers 2 & 3	Trial Exams		GCSE Exams P1	GCSE Exams P2 & P3
Homework	Mathswatch: Assessment 16 revision Paper 1 Revision Shadow paper (set A)	Mock shadow paper 6 x half shadow papers Shadow Paper (set B)	Shadow paper (set C)	Mathswatch: Trial revision 6x half shadow papers Shadow Paper (set C)	Predicted papers 1,2,3	Predicted papers 2,3

SUBJECT: MATHEMATICS – Advanced

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.					
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Topic/Unit	▪ Transformations ▪ Algebraic Proof ▪ Constructions & Loci	▪ Congruency ▪ Time Series Graphs ▪ Cubic, Exponential & Reciprocal Graphs	▪ 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).	▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19.	▪ Revision	Revision
Knowledge	<u>Transformations</u> Pupils will describe and draw rotations using an angle, direction of turn and centre of rotation. Pupils will describe and draw reflections using a mirror line and its equation. Pupils will describe and draw translations using column vectors. Pupils will describe and draw enlargements using a scale factor including fractional and negative values and with/without a centre of enlargement. Pupils will know how to describe the effect of combined transformations as a single transformation and be able to describe the changes and invariance achieved after combined transformations. <u>Algebraic Proof</u> Pupils will know how to represent odd, even and consecutive integers algebraically.	<u>Congruency</u> Pupils will understand and know how to use the congruency conditions of SSS, SAS, ASA and RHS to prove the congruency of triangles. Pupils will be able to verify conditions of congruency using constructions. Pupils will be able to solve angle problems by first proving congruency. <u>Time Series Graphs</u> Pupils will be able to construct and interpret time-series graphs, commenting on trends. <u>Cubic, Exponential & Reciprocal Graphs</u> Pupils will Recognise linear, quadratic, cubic, reciprocal, circle and exponential graphs from their shapes. Pupils will be able to sketch graphs of simple	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.

	<u>Constructions & Loci</u> Pupils will be able to produce standard ruler and compasses constructions. Pupils will know what to construct when solving loci problems. Pupils will be able to find and describe regions which satisfy a combination of loci and solve loci and constructions problems using scale drawings and bearings	cubic functions given as three linear expressions and define the function as a single equation. Pupils will recognise, sketch & interpret graphs of the exponential function $y = k^x$ for positive values of k and integer values of x. Pupils will be able to draw graphs of the reciprocal function $y = {}^{1}/_{x}$ using a table of values. Pupils will know for reciprocal graphs to state the value of x for which the equation is not defined.				

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. Algebraic Proof Know how to represent odd, even and consecutive 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. 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;	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. Time Series Graphs Construct and interpret time-series graphs, commenting on trends. Cubic, Exponential & Reciprocal Graphs 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. Draw graphs of the reciprocal function $y = {}^1/_x$ with x ≠ 0, using a table of values. For reciprocal graphs be able to state the value of x for which the equation is not defined.	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.	Engage in revision and recap lessons focussing on key identified topics.

	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; 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.					
Assessments Formative	Assessment 16 1 Open book End-of-topic quizzes. Regular use of whiteboards in lessons	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	
Assessments Summative	Mock exam Paper 1	Mock exam Papers 2 & 3	Trial Exams		GCSE Exams P1	GCSE Exams P2 & P3
Homework	Mathswatch: Assessment 16 revision Paper 1 Revision Shadow paper (set A)	Mock shadow paper 6 x half shadow papers Shadow Paper (set B)	Shadow paper (set C)	Mathswatch: Trial revision 6x half shadow papers Shadow Paper (set C)	Predicted papers 1,2,3	Predicted papers 2,3

SUBJECT: MATHEMATICS – Core +

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.					
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Topic/Unit	▪ Constructions & Loci ▪ Vectors	▪ Congruency ▪ Compound Measures	▪ 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).	▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19.	▪ Revision	▪ Revision
Knowledge	<u>Constructions & Loci</u> Pupils will be able to produce standard ruler and compasses constructions. Pupils will know how to use constructions to solve loci problems. Pupils will know how to find and describe regions which satisfy combinations of loci and be able to solve loci and constructions problems using scale drawings and bearings. <u>Vectors</u> Pupils will know how to use column vectors to describe vectors, to represent vectors graphically and identify which vectors are parallel. Pupils will be able to calculate, using column	<u>Congruency</u> Pupils will be able to identify by inspection, shapes that are congruent. Pupils will understand and use congruence criteria for triangles: SSS, SAS, ASA and RHS. <u>Compound Measures</u> Pupils will know how to use for calculations the compound measures of density, mass and volume, pressure, force and area and speed, distance and time. Pupils will be able to convert between metric speed measurement and use kinematics formulae to calculate speed and acceleration. Pupils will know how to use a calculator efficiently when working	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.

	vectors or diagrams, the sum or difference of two vectors and represent this as a single column vector or diagram. Pupils will be able to calculate the scalar multiple of a vector and give the answer as a single column vector or diagram. Pupils will know how to use algebra to represent vectors and simple vector sums or differences.	with units of time.				
Skills	<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	<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). <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	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.	Engage in revision and recap lessons focussing on key identified topics.

	'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. <u>Vectors</u> 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.	with elements of time.				
Assessments Formative	Assessment 16 1 Open book End-of-topic quizzes. Regular use of whiteboards in lessons	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	
Assessments Summative	Mock exam Paper 1	Mock exam Papers 2 & 3	Trial Exams		GCSE Exams P1	GCSE Exams P2 & P3

Homework	Mathswatch: Assessment 16 revision Paper 1 Revision Shadow paper (set A)	Mock shadow paper 6 x half shadow papers Shadow Paper (set B)	Shadow paper (set C)	Mathswatch: Trial revision 6x half shadow papers Shadow Paper (set C)	Predicted papers 1,2,3	Predicted papers 2,3

MATHEMATICS: Curriculum map – Core

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.					
	Autumn Term 1	**Autumn Term 2**	**Spring Term 1**	**Spring Term 2**	**Summer Term 1**	**Summer Term 2**
Topic/Unit	▪ Constructions & Loci ▪ Factors, Multiples & Primes revisit ▪ Using Pythagoras' Theorem	▪ Compound Measures ▪ Averages, Range & Tables ▪ Fractions & Mixed Numbers	▪ 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).	▪ Actions from Trial Exam Analysis and Past Papers: Revise Key Areas ▪ Continue to work through key topics missed due to COVID-19.	▪ Revision	▪ Revision
Knowledge	<u>Constructions & Loci</u> Pupils will be able to produce standard ruler and compasses constructions. Pupils will know how to use constructions to solve loci problems. Pupils will know how to find and describe regions which satisfy combinations of loci and be able to solve loci and constructions problems using scale drawings and bearings. <u>Factors, Multiples & Primes revisit</u> Pupils will be able to list all numbers that can be made from given sets of digits, define and identify factors, multiples and prime numbers, list all factors of a number systematically and list multiples of integers. Pupils will know how to write a number in prime factor form including using index notation.	<u>Compound Measures</u> Pupils will know and use the compound measures of density, mass and volume; pressure, force and area; speed, distance and time, all in simple cases. Pupils will be able to read values from a scale and use calculators efficiently when working with units of time. <u>Averages, Range & Tables</u> Pupils will be able to calculate the mean, mode, median and range from small data sets and from a frequency table. Pupils will develop their understanding of how to find the class interval containing the median and mode and how to find an estimated mean in a	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will engage in recapping lessons and revision sessions focussing on key identified topics through QLA's, efforts in Mock & Trial exams and pupils independent needs & requests. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.	Pupils will continue their revision lessons remaining focussed on their independent learning, improving their full understanding of all topics. Complete internal exams and past papers.

	Pupils will be able to find common factors and common multiples of two numbers. Pupils will know how to find the LCM and HCF including using Venn diagrams or listing. Pupils will be able to solve simple problems using the HCF, LCM or prime numbers. <u>Using Pythagoras' Theorem</u> Pupils will know how to use Pythagoras' theorem to find missing lengths for a hypotenuse and other shorter side in given right angle triangles. Pupils will know how to write an answer to a Pythagoras question using a calculator in surd form. Pupils will be able to justify whether a triangle is right-angled and calculate the length of a line segment on a co-ordinate grid using Pythagoras' theorem.	grouped frequency table. <u>Fractions & Mixed Numbers</u> Pupils will know how to write a fraction in its simplest form and find equivalent fractions. Pupils will be able to convert between improper fractions and mixed numbers. Pupils will know how to use the four rules of arithmetic with fractions including mixed numbers. Pupils will know how to multiply and divide an integer by a fraction and be able to find the reciprocal of an integer or a fraction.				
Skills	<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	<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	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.	Engage in revision and recap lessons focussing on key identified topics.

	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. <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. 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. <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. Give an answer to a Pythagoras	with elements of time. Read values from a speedometer. <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. Find an estimated mean from a grouped frequency table. <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.				

	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.					
Assessments Formative	Assessment 16 1 Open book End-of-topic quizzes. Regular use of whiteboards in lessons	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	End-of-topic quizzes. Regular use of whiteboards in lessons.	
Assessments Summative	Mock exam Paper 1	Mock exam Papers 2 & 3	Trial Exams		GCSE Exams P1	GCSE Exams P2 & P3
Homework	Mathswatch: Assessment 16 revision Paper 1 Revision Shadow paper (set A)	Mock shadow paper 6 x half shadow papers Shadow Paper (set B)	Shadow paper (set C)	Mathswatch: Trial revision 6x half shadow papers Shadow Paper (set C)	Predicted papers 1,2,3	Predicted papers 2,3