Curriculum Map 2021/2022

ST MARY'S CE HIGH SCHOOL

YEAR 11 MATHS FOUNDATION

Mathematics is an interconnected subject in which students need to be able to move fluently between representations of mathematical ideas. The programme of study is organised into apparently distinct domains, but students should build on key stage 3 and connections across mathematical ideas to develop fluency, mathematical reasoning and competence in solving increasingly sophisticated problems. They should also apply their mathematical knowledge in science, geography, computing and other subjects.

The curriculum is taught through the mathematical strands of: Number and Ratio, Algebra, Geometry and Measures, Statistics and Probability

	Autumn 1a	Autumn 1b	Spring 2a	Spring 2b	Summer 3a	Summer 3b
CONTENT *Declarative / core / powerful Knowledge – 'Know What'*	**Recovery Curriculum in preparation for Year 11** **Ratio and Proportion** **Pythagoras**	**Area, Triangles and 3D shape**	**Position vectors, probability and statistics**	**Angles, number and working with compound measure**	**Revision and public exams**	**Revision and public exams**
Intent	Ratio and proportion is a large part of the GCSE and links with other areas of the curriculum.	Collecting similar themed topics together such as all work on triangles will enable students to compare and contrast which strategy to use for which situation when working with triangles.	Working with probability will allow for the practice of other similar themes covered earlier in the year.	Covering all type of angle questions will allow students to compare and contrast using which rules for which situation is most suitable		
Skills	Students need to be able to:	Students need to be able to:	Students need to be able to:	Students need to be able to:	Students will spend this half term targeting key skills	Students will spend this half term targeting key skills

Procedural Knowledge – 'Know How'	Understand ratio and its link to multiplication Solve ratio problems and reduce them to the simplest form Missing the missing length given 2 sides of a right angled triangle Apply Pythagoras in context	Find the area and perimeter of rectangles, parallelograms, trapeziums and circles Use angle rules involving triangles Find the area and perimeter in triangles Use Pythagoras including in "hidden" cases Use Trigonometry Find the surface area of prisms Find the Volume of Prisms	Add, subtract, multiply and divide vectors Write a vector expression from a diagram in simple cases Find the probability of single events Use a suitable diagram for mutually exclusive events (sample space, tree diagram) Use a suitable diagram for non-mutually exclusive events (two way table, Venn diagram) Understand and use Set notation in simple cases Find the average or range from a list or table Draw and interpret bar charts, pictograms, frequency polygons	Use angle rules involving straight lines, vertically opposite angles, angles in parallel lines, angles involving special quadrilaterals Use exterior and interior angles of polygons. Find the highest common factor and lowest common multiple of two numbers Use the four operations with fractions Solve problems involving speed distance and time.	and strengthening weak areas	and strengthening weak areas

Key Questions	Can the rule of Pythagoras be used on any triangle? Do ratios only have 2 parts?	Can you show how the formula for the area of a trapezium is formed? Do you always multiply the two lengths seen to find the area of a triangle?	Why do we use diagrams to help us calculate the probability of multiple events?	Can you show why the exterior angles of a polygon sum to 360 degrees? What is the common mistake when working with speed distance time calculations?		
Assessment	Students will be assessed through class retrieval quizzes, written exam questions taken from GCSE papers	Students will be assessed through class retrieval quizzes, written exam questions taken from GCSE papers	Students will be assessed through class retrieval quizzes, written exam questions taken from GCSE papers	Students will be assessed through class retrieval quizzes, written exam questions taken from GCSE papers		
Links to careers/wider world	Altering recipes to suit the quantity of people catering for Converting currency Converting units	Finding the amount of tiles needed to tile a wall Buying enough paint to paint a wall Buying enough border to fit around a room	Making decisions based on the chances of it happening	Calculating journey times Calculating other problems with compound measures such as population density, flow rate, cost per kg		