St Mary's CE High School Curriculum Map 2022-23

Subject: Mathematics Higher tier
Year: 11

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT *Declarative / core / powerful Knowledge – 'Know What'*	**Sequences** **Quadratic graphs** **Equations of lines** **Regions** **Estimating gradients of curves/area under curves**	**Circle theorems** **Vector geometry** **Equations of circles**	**Algebraic proportion** **Quadratic formula** **Quadratic simultaneous equations** **Graphs of trigonometric functions** **Graph transformations** **Quadratic inequalities**	**Revision**	**Revision / Public exams**	**Revision / Public exams**
Intent	**These topics are taught together to help make links with sequences and graphs. Here, students extend their understanding of shapes of graphs ready to have an appreciation of transformed graphs in Spring 2**	**These topics cover the final areas of geometry yet to be covered. Students have already covered congruence and other equations in year 10, which will help with the understanding of these topics.**	**The year 11 curriculum finishes off with the most challenging areas of GCSE maths. Where students are not necessarily aiming for the highest grades, some of these topics could be interchanged with additional revision time.**			
Skills *Procedural Knowledge – 'Know How'*	Students need to be able to: Find missing terms of Fibonacci, geometric and quadratic style sequences	Students need to be able to: Use circle theorems to solve problems Add and subtract vectors	Students need to be able to: Solve problems using algebraic direct/inverse proportion Use the quadratic formula to solve quadratics	Students will spend this half term targeting key skills and strengthening weak areas	Students will spend this half term targeting key skills and strengthening weak areas	Students will spend this half term targeting key skills and strengthening weak areas

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	Find the position to term rule of a quadratic sequence	Find scalar multiples of vectors Form vector expressions Form complex proofs using vectors Solve problems using equations of circles	Sketch graphs of trigonometric functions Sketch graphs which have been translated or stretched in the y or x axis Recognise equations of transformed graphs			
Key Questions	What shape are we expecting for this graph? What is the equation of a line perpendicular to this one (through any point) Can you give another…	What lines can you highlight to help see which theorem to use? How can you categorise the theorems to help recognise them?	Which rules for graph transformations were intuitive? Which rules for graph transformations were not intuitive?			
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			
Links to careers/wider world	STEM, Graphic design,	Engineering, product design, STEM				