

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



Subject: Mathematics

Year: 8

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 2 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 six mathematical strands of: Number and Ratio, Algebra, Geometry and Measures, Statistics and Probability

	Autumn 1	Autumn 2	Spring 1	Spring 2	Summer 1	Summer 2
CONTENT <i>Declarative / core / powerful Knowledge – 'Know What'</i>	Algebra: Brackets and Expressions	Number Properties and Fractions	Estimation and Circles	Angles and Polygons	Probability	Ratio and Proportion
Intent	Algebra is the language of maths. As the complexity of problems increase, as does the knowledge of algebra. This half term is vital for manipulating algebra in more advanced settings.	The skills involving indices, factors and multiples will give students the skills to be able to manipulate fractions. These skills will also be necessary in other topics in the future	As the results to calculations become more complex, a new rounding strategy is needed. Rounding to significant figures will be useful for work with circles. This topic will prepare students for working in 3D.	This half term builds on the year 7 work on angles. These skills will be important when working with shapes where angles give us insights into a shapes properties (such as lengths in a triangle)	This half term will be students first insights into probability and prepares students to work in more advanced cases of probability in future years.	Many other areas of maths work in direct proportion/in a ratio. This topic will prepare student for working with ratio in other contexts such as similar shapes.
Skills <i>Procedural Knowledge – 'Know How'</i>	Students will be able to: Expand brackets Solve equations involving brackets Find the Gradient of a line Read and interpret real life graphs	Students will be able to: Multiply and divide expressions using the laws of indices Use the "power of power" rule Recognise prime numbers up to 97	Students will be able to: Round a number to a certain number of significant figures Estimate calculations Find the upper and lower bound of a rounded number	Students will be able to: Use the rules for angles contained within parallel lines Know the properties of the special quadrilaterals and solve angle problems	Students will be able to: Clear misconceptions on probability formed by experiences in "the real world" Find probability of single events in words and in numbers Find an experimental probability	Students will be able to: Simplify ratios Form and manipulate ratios Use ratios to solve problems Use a scaling method to solve problems in direct

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	that covers all the content taught within the half term.	that covers all the content taught within the half term.	that covers all the content taught within the half term.	that covers all the content taught within the half term.	that covers all the content taught within the half term.	that covers all the content taught within the half term.
Links to careers/wider world		Calculating the largest possible shares for an amount Supermarket discounts Having a data sense when giving as fractions	Calculating RPMs of wheels/engines Planning designs involving circles	Angles have a number of applications in STEM	Probability emphasises that "gut instinct" is no replacement for being calculated, and it is good decision making to go with the most likely outcomes over the long run	Changing the quantities in a recipe to fit the number of people you are serving Art and scale drawings