

KS3 Long Term Plan 2020-2021

Subject: Maths



Statement of Intent

We believe that students deserve a creative and ambitious mathematics curriculum, rich in skills and knowledge, which ignites curiosity and prepares them well for everyday life and future employment.

Our mathematics curriculum at KS3 is broad and varied and intended to cater for the needs of all our students. The curriculum allows for choice and flexibility in topics and it can be differentiated at every level. At KS3 we place larger focus on consolidating and extending skills that students acquired in KS2.

Our maths curriculum is designed to enable students of all abilities to:

- become fluent in the fundamentals of mathematics, through varied and frequent practice with increasingly complex problems over time, so that pupils develop conceptual understanding and the ability to recall and apply knowledge rapidly and accurately.
- reason mathematically by following a line of enquiry, conjecturing relationships and generalisations, and developing an argument, justification or proof using mathematical language.
- can solve problems by applying their mathematics to a variety of routine and non-routine problems with increasing sophistication, including breaking down problems into a series of simpler steps and preserving in seeking solutions.
- can communicate, justify, argue and prove using mathematical vocabulary.
- develop their character, including resilience, confidence and independence, so that they contribute positively to the life of the school, their local community and the wider environment.

A high-quality mathematics education will therefore provide a foundation for understanding the world, the ability to reason mathematically, an appreciation of the beauty and power of mathematics, and a sense of enjoyment and curiosity about the subject. Our students will be very well prepared for future studies at GCSE, A Level, further education and higher education as well as essential skills for employment and apprenticeships.

Curriculum Statement of Implementation

Our schemes of work at KS3 are intended to develop the skills set out in the National Curriculum as well as to nurture a sense of curiosity about mathematics.

In year 7, 8 and 9 the mathematics curriculum is studied at a much slower pace. Where possible our pedagogy is underpinned by mastery approach to the teaching of mathematics for understanding, rather than a repetition of the process. We design our curriculum basing future teaching on the building blocks taught previously, so that students can easily form the links between different topics.

Concepts are broken down into small connected and structured steps and linked with different areas of mathematics, so that students can see it as a whole subject. There is a lot of emphasis on multi-steps, challenging problems and training students to work towards getting credit in every question.

Homework supports and further consolidates the learning that happens in class. It is set once a week and alternates between online and written, and it is always interleaved, which allows students to constantly revise different aspects of the course.

The yellow assessment booklets enable students to easily understand and find topics they study in class as well as evaluate their homework tasks and identify areas they need to study further at home. Each topic is linked to a Mathswatch clip, which means students always have a point of reference for independent study.

In year 7, 8 and 9 – teachers plan in collaboration to ensure consistency in approach. Each lesson starts with a mini-test, so that students get used to regular, low-stake testing.

Students in St Paul's love maths; it is often their favourite subject as they know they are getting a good deal in class and they aspire to achieve the best possible grades in it.

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 7 Autumn 1	Types of Numbers, Powers, Standard Form (12 lessons); Expressions and Formulae (10 lessons); Percentages (6 lessons)	Recapping and reviewing skills from KS2 using Eedi from Craig Barton pedagogy and skills check from Mathsbox	
Yr. 7 Autumn 2	Fractions (10 lessons); Decimals, Rounding and Accuracy (6 lessons); Ratio and Proportion (6 lessons)	Recapping and reviewing skills from KS2 using Eedi from Craig Barton pedagogy and skills check from Mathsbox	30th of November – Non-calculator paper (60 minutes)
Yr. 7 Spring 1	Ratio and Proportion (4 lessons); Probability (8 lessons); Expanding brackets and factorising (5 lessons); Angles (7 lessons)	FDP	
Yr. 7 Spring 2	Angles (4 lessons); Sequences (8 lessons); Equations, Expressions and Inequalities (8 lessons)		
Yr. 7 Summer 1	Averages & Spread (8 lessons); Area, Perimeter Surface Area and Volume (12 lessons)		
Yr. 7 Summer 2	Shapes, Transformations and Similarity (6 lessons); Revision of all content covered to date		21st of June - Non-calculator paper (60 minutes) 22nd of June – Calculator paper (60 minutes)
Yr. 8 Autumn 1	Types of Numbers, Powers and Standard Form (9 lessons); Expressions and Formulae (9 lessons); Percentages (8 lessons); Fractions (4 lessons)	Area, Perimeter, Surface Area and Volume and Straight line graphs; Expressions, Equations and Inequalities; Averages and Spread	
Yr. 8 Autumn 2	Continue with Fractions (3 lessons); Decimals, Rounding and Accuracy (6 lessons); Ratio and Proportion (6 lessons); Probability (8 lessons)	Continue with Averages and Spread; Displaying and Interpreting Data; Graphs, Transformations and Similarity; Pythagoras and Trigonometry	Assessment Week – 23rd November (1 calculator paper)
Yr. 8 Spring 1	Expanding brackets and factorising (8 lessons), Angles (8 lessons); Similarity, Constructions and Loci (6 lessons); Sequences (2 lessons)	Types of Numbers, Powers and Standard Form; Expressions and Formulae; Percentages; Fractions	
Yr. 8 Spring 2	Sequences (2 lessons), Straight line graphs (6 lessons), Expressions, formulae and Inequalities (8 lessons), Averages and Spread (2 lessons)	Fractions; Decimals, Rounding and Accuracy; Ratio and Proportion; Probability	
Yr. 8 Summer 1	Averages & Spread (7 lessons); Area, Perimeter, Surface Area and Volume (12 lessons);	Probability; Expanding brackets and factorising	
Yr. 8 Summer 2	Displaying and Interpreting data (8 lessons); Shapes, Transformation and	Angles; Similarity, Constructions and Loci;	28th of June – Non-calculator paper (60 minutes)

	Similarity (8 lessons); Pythagoras and Trigonometry (8 lessons)	Sequences; Straight line graphs	29th of June – Calculator paper (60 minutes)
--	---	---------------------------------	--

Year 9 Foundation Finishing and reviewing KS3 and preparing students for KS4			
Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 9 Autumn 1	Decimals Percentages and Fractions (15 lessons – 23/09) Rounding and Accuracy (8 lessons - 06/10) Ratio and proportion (8 lessons 16/10) Types of Numbers, Powers and Standard Form (10 lessons – 06/11)	Equations and inequalities Shape, transformations and similarity Symmetry constructions and loci Straight line graphs	
Yr. 9 Autumn 2	Types of Numbers, Powers and Standard Form (10 lessons – 06/11) Expressions, Sequences and Compound Measures (10 lessons – 30/11) Probability (8 lessons 10/12)	Straight line graphs Displaying and interpreting data Averages and Spread	YEAR 9 W/C 16/11 Non-Calculator and Calculator 1 hour each
Yr. 9 Spring 1	Expanding brackets and factorising (8 lessons - 08/01) Area perimeter surface area and volume (15 lessons – 05/02) Angles (7 lessons – 24/02)	Trig and Pythag Quadratics Decimals Percentages and Fractions Rounding and Accuracy	YEAR 9 W/C 18/01 Non-Calculator and Calculator 1 hour each
Yr. 9 Spring 2	Equations and inequalities (10 lessons -10/3) Shape, transformations and similarity (10 lessons -24/03) Symmetry constructions and loci (6 lessons 01/04)	Ratio and proportion Types of Numbers, Powers and Standard Form Expressions, Sequences and Compound Measures	
Yr. 9 Summer 1	Straight line graphs (10 lessons 30/05) Displaying and interpreting data (7 lessons – 11/05)	Probability Expanding brackets and factorising	YEAR 9 W/C 14/06 Non-Calculator and Calculator 1 hour each
Yr. 9 Summer 2	Averages and Spread (10 lessons – 04/06) Trig and Pythag (8 lessons – 18/06) Quadratics (6 lessons – 01/07)	Area perimeter surface area and volume Angles Equations and inequalities	

Year 9 Higher Finishing and reviewing KS3 and preparing students for KS4

Term	Topics Covered (Date completed by and number of lessons)	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 9 Autumn 1	Percentages, Fractions, Decimals and Accuracy (15 lessons – 23/09) Ratio and Proportion (10 lessons – 08/10) Expressions, Sequences, Formulae and Compound Measures (10 lessons – 23/10)	Equations, Inequalities and Functions Transformations, Similarity, Constructions, Loci and Vectors Straight Line Graphs	
Yr. 9 Autumn 2	Types of Numbers, Powers, SF and Surds (10 lessons – 13/11) Probability (9 lessons – 04/12) Expanding Brackets and Factorising (8 lessons – 17/12)	Displaying and Interpreting data Quadratics, Equations and Graphs Averages and Spread	YEAR 9 W/C 16/11 Non-Calculator and Calculator 1 hour each
Yr. 9 Spring 1	Perimeter, Area, Surface Area, Volume with Algebra (15 lessons – 29/01) Angles (10 lessons – 12/02)	Averages and Spread Trigonometry and Pythagoras Percentages, Fractions, Decimals and Accuracy	YEAR 9 W/C 18/01 Non-Calculator and Calculator 1 hour each
Yr. 9 Spring 2	Equations, Inequalities and Functions (12 lessons – 09/03) Transformations, Similarity, Constructions, Loci and Vectors (13 lessons – 26/03) Straight Line Graphs (10 lessons – 23/04)	Ratio and Proportion Expressions, Sequences, Formulae and Compound Measures Types of Numbers, Powers, SF and Surds	
Yr. 9 Summer 1	Displaying and Interpreting data (8 lessons – 05/05) Quadratics, Equations and Graphs (12 lessons – 21/05)	Types of Numbers, Powers, SF and Surds Probability Expanding Brackets and Factorising	YEAR 9 W/C 14/06 Non-Calculator and Calculator 1 hour each
Yr. 9 Summer 2	Averages and Spread (10 lessons – 16/06) Trigonometry and Pythagoras (10 lessons – 07/07)	Perimeter, Area, Surface Area, Volume with Algebra Angles	