KS3 Long Term Plan
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 Year 7 curriculum focuses on building deep conceptual understanding of the content that builds the foundation for learning for the next 5 years. We are developing teaching for mastery across year 7. This means our lessons will have a key focus on representation and structure, mathematical thinking, variation and fluency. Content will be taught in a coherent sequence of small steps to ensure concepts are well understood.

Our mathematics curriculum through Year 8 and Year 9 is broad and balanced, intended to cater for the needs of all our students and give them the fluency they need to tackle GCSE and beyond. The curriculum allows for teachers to flexibly choose the topics which need teaching in each unit, which can be differentiated at every level.

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 and skills 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.

- 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.

- communicate, justify, argue and prove using appropriate 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 mathematical reasoning, 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 (particularly with year 7), 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, building coherently on prior knowledge and linked with different areas of mathematics, so that students can see the subject as a whole. There is a lot of emphasis on multi-steps, challenging problems and training students to work towards perseverance with problems ready for GCSE and beyond.

Homework supports and further consolidates the learning that happens in class. It is set once a week and alternates between online and written, with online homework being interleaved and written homework reviewing the unit just studied. This enables students to vary their revision between units recently studied as well as different aspects of the course.

The coloured assessment booklets enable students to easily locate the relevant MathsWatch clips for any topics they have not fully understood in class and evaluate their homework tasks, identifying areas they need to study further independently.

After each assessment, students complete a personalised Question-Level-Analysis, and from this will have a piece of independent work set on topics that the students achieved poorly in. This is to best prepare them for KS4 when this process will be imbedded into their practice.

In year 7, 8 and 9 – teachers plan in collaboration to ensure consistency in approach. Starter focuses are allocated in the scheme of work, ensuring time is given to a combination of both interleaved and retrieval practice.

Students in St Paul's love maths as they know they are getting the highest quality mathematical education in class and they aspire to achieve the best possible grades from the beginning of their secondary education.

Term	Topics Covered	Skills/AOs/interleaved content	Assessment (date and nature of assessment)
Yr. 7 Autumn 1	Unit 1a: Sequences Unit 1b: Algebraic Notation Unit 1c: Equality and equivalence Overarching theme of promoting algebraic thinking.	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. Starter: Numeracy ninjas to develop mental maths and basic numeracy skills.	**Entry to Year 7 assessments (WB 20th September) – all three assessments are Non-Calculator.**
Yr. 7 Autumn 2	Unit 2: Working with numbers (types of number, indices, product of prime factors, HCF/LCM) Unit 3: Place value, decimals and standard form. Unit 4: Number Arithmetic	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. Starter: Numeracy ninjas to develop mental maths and basic numeracy skills.	**30th of November – Non-calculator paper (40 minutes)**
Yr. 7 Spring 1	Unit 5: Using equipment Unit 6: Fractions Unit 7: Percentages Unit 8: Expanding, factorising and solving	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. Starter: Interleaved to review Unit 1a through to Unit 4 (1 week on each). Booster lesson on 13th January to dedicate to content taught in Autumn 1)	
Yr. 7 Spring 2	Unit 8 continued Unit 9: Ratio and proportion Unit 10: Working with shapes	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. Starter: Two starters dedicated to units 1a to 8 in order of teaching. Mental maths starter once a week.	
Yr. 7 Summer 1	Unit 10 continued Unit 11: Angles Unit 12: Averages, Spread and data	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. Starter: First two weeks to review unit 1a to unit 5. Then	**24th April – Calculator paper (40 minutes)**

		4 weeks to review unit 6 to unit 10.	
Yr. 7 Summer 2	Unit 13: Probability Unit 14: Time, units and compound measure Unit 15: Co-ordinates and straight line graphs	Key skills taught in lessons using principles of mastery teaching to embed conceptual understanding. Knowledge extended to application to challenge. <u>Starter</u>: Used to review all taught units up to unit 14.	**W/b 26th of June or w/b 3rd of July**

Year 8 and 9			
Term	**Topics Covered**	**Skills/AOs/interleaved content**	**Assessment** (date and nature of assessment)
Yr. 8 and 9 Autumn 1	Types of Number, Powers, Standard Form Expressions, Sequences, Formulae Percentages Fractions Decimals, Rounding and Accuracy	Content taught initially focusing on skill development and then applying these skills to solve more complex problems. Interleaved starter focus: Expanding and Factorising Angles Averages and Spread Expressions, Sequences and Formulae Straight Line Graphs	
Yr. 8 and 9 Autumn 2	Ratio and Proportion Probabilty Expanding and Factorising	Content taught initially focusing on skill development and then applying these skills to solve more complex problems. Interleaved starter focus: Expressions, Equations and Inequalities Symmetry, Constructions and Loci Perimeter, Area, SA and Volume	**Year 9: WC 2nd November Non-calculator assessment 40 mins Calculator assessment 40 mins** **Year 8: WC 8th November Non-calculator assessment 40 mins Calculator assessment 40 mins**
Yr. 8 and 9 Spring 1	Angles Symmetry, Constructions and Loci Straight line graphs	Content taught initially focusing on skill development and then applying these skills to solve more complex problems. Interleaved starter focus: Displaying and Interpreting Data Shape, Transformations and Similarity Measure, Pythagoras and Trigonometry	**Year 9: WC 10th January Non-calculator assessment 60 mins Calculator assessment 60 mins**
Yr. 8 and 9 Spring 2	Straight line graphs (continued) Expressions, Equations and Inequalities Averages and Spread	Content taught initially focusing on skill development and then applying these skills to solve more complex problems.	**Year 8: WC 28th February Non-calculator assessment 60 mins Calculator assessment 60 mins**

	Perimeter, Area, Surface Area and Volume	Interleaved starter focus: Types of number, Powers and Standard Form Percentages Fractions	
Yr. 8 and 9 Summer 1	Perimeter, Area, Surface Area and Volume Displaying and Interpreting Data Shape, Transformations and Similarity Measure, Pythagoras and Trigonometry	Content taught initially focusing on skill development and then applying these skills to solve more complex problems. Interleaved starter focus: Decimals, Rounding and Accuracy Ratio and Proportion Probability	
Yr. 8 and 9 Summer 2	Measure, Pythagoras and Trigonometry (continued) Quadratics Revision	Content taught initially focusing on skill development and then applying these skills to solve more complex problems. Interleaved starter focus: Expanding and Factorising Angles Averages and Spread	**Year 8:** **W/b 26th of June or w/b 3rd of July** **Year 9:** **W/b 12th of June (2 papers)**