KS4 Long Term Plan 2020-2021
Subject: Maths (Higher and Fdn)
Exam Board: Edexcel

Curriculum Statement of Intent Maths

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 KS4 is broad and varied and intended to cater for the needs of all our students with topics ranging from grade 1 (for the lowest attainers) to grade 9 (for our brightest students). The curriculum allows for choice and flexibility in topics and it can be differentiated at every level. We aim to equip students in basic mathematical skills at KS3 and build on them and extend at KS4 thus allowing students to apply their knowledge in more challenging problems and secure the best grades they are capable of at GCSE.

Our maths curriculum will 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 A Level, further education and higher education as well as essential skills for employment and apprenticeships.

Curriculum Statement of Implementation

In year 10 the GCSE mathematics curriculum is studied at a slower pace with the focus on exam practice and interleaving in every lesson. 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 twice a week: online and written, and it is always interleaved, which allows students to constantly revise different aspects of the course.

The blue 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 10 – 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 10 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 – 20/11)	Equations and inequalities Shape, transformations and similarity Symmetry constructions and loci Straight line graphs	**N/A**
Yr 10 Autumn 2	Types of Numbers, Powers and Standard Form (10 lessons – 20/11) Expressions, Sequences and Compound Measures (10 lessons – 04/12) Probability (8 lessons 17/12)	Straight line graphs Displaying and interpretingt data Averages and Spread	**YEAR 10** **W/C 02/11 and 09/11** **Non-Calculator and Calculator** **1 hour each**
Yr 10 Spring 1	Expanding brackets and factorising (8 lessons - 14/01) 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	
Yr 10 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 10 Summer 1	Straight line graphs (10 lessons 14/05) Displaying and interpretingt data (7 lessons – 21/05)	Probability Expanding brackets and factorising	**Y10 Mocks** **1 x 1.5 hour Non-Calculator** **1 x 1.5 hour Calculator**
Yr 10 Summer 2	Averages and Spread (10 lessons – 16/06) Trig and Pythag (8 lessons – 01/07) Quadratics (6 lessons – 15/07)	Area perimeter surface area and volume Angles Equations and inequalities	

Term	**Topics Covered** (Date completed by and number of lessons)	**Skills/AOs/interleaved content**	**Assessment** (date and nature of assessment)
Yr 10 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 lesson – 23/10)	Equations, Inequalities and Functions Transformations, Similarity, Constructions, Loci and Vectors Straight Line Graphs	
Yr 10 Autumn 2	Types of Numbers, Powers, SF and Surds (10 lessons – 27/11) Probability (9 lessons – 10/12) Expanding Brackets and Factorising (8 lessons – 07/01)	Displaying and Interpreting data Quadratics, Equations and Graphs Averages and Spread	**YEAR 10** **W/C 02/11 and 09/11** **Non-Calculator and Calculator** **1 hour each**
Yr 10 Spring 1	Expanding Brackets and Factorising (8 lessons continued – 07/01) 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	
Yr 10 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 – 07/05)	Ratio and Proportion Expressions, Sequences, Formulae and Compound Measures Types of Numbers, Powers, SF and Surds	
Yr 10 Summer 1	Straight Line Graphs (10 lessons continued – 07/05) Displaying and Interpreting data (8 lessons – 19/05)	Types of Numbers, Powers, SF and Surds Probability Expanding Brackets and Factorising	**Y10 Mocks** **1 x 1.5 hour Non-Calculator** **1 x 1.5 hour Calculator**
Yr 10 Summer 2	Quadratics, Equations and Graphs (12 lessons – 11/06) Averages and Spread (10 lessons – 25/06) Trigonometry and Pythagoras (10 lessons – 12/07)	Perimeter, Area, Surface Area, Volume with Algebra Angles	