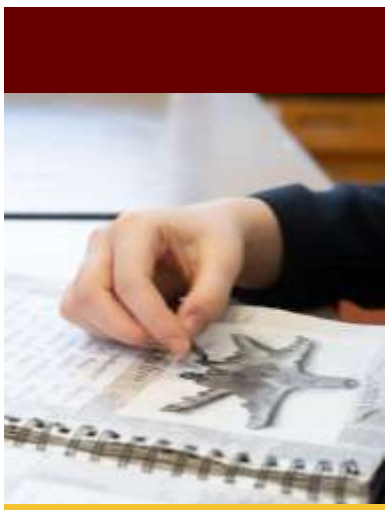
Maths Curriculum Booklet

2025-26

Subject Lead: Mr Conway



St Dunstan's School
GLASTONBURY

Subject Curriculum Intent:

The St Dunstan's mathematics curriculum intends to instil the St Dunstan's core values of Truth, Resilience, Ambition, Community, and Kindness (TRACK) as follows:

- **Truth**: The curriculum intent is to give students the ***mathematical fluency and reasoning*** needed for them to make informed decisions in their future lives.
- **Resilience**: The curriculum intent is to develop students' ***problem-solving*** abilities, where they apply key skills to unfamiliar problems.
- **Ambition**: The curriculum intent is to ensure that all learners are studying a ***challenging curriculum.*** Students flourish and achieve above expected outcomes because of this challenge.
- **Community:** The curriculum intent is to develop in students a deep appreciation of the patterns and relationships between numbers. We intend to supplement our in-class coverage of the curriculum, with visits from local companies to explain how mathematics is used in their local businesses, thus enriching the ***cultural capital*** of our students.
- **Kindness**: The intent for our implementation of the curriculum is to be delivered with pace, challenge and kindness. Students should be rewarded for their positive contributions in lessons. A ***positive learning environment*** flourishes in the classroom.

The curriculum at St Dunstan's meets, and at times exceeds, the national curriculum which consists of the following five golden threads:

- Number
- Algebra
- Geometry and measure
- Ratio, proportion and rates of change
- Probability and statistics

Our Key Stage 3 curriculum intends to develop in students a deep appreciation of the patterns and relationships between numbers and to provide a firm foundation with the tools of algebra, geometry, and statistics to enable students to solve problems in both abstract and real-world contexts. The curriculum builds on prior knowledge by consolidating concepts and standardising techniques learnt at Key Stage 2, developing, and enhancing understanding of all six areas of the secondary Mathematics curriculum and introducing new concepts such as Pythagoras and Trigonometry that provide essential foundations for KS4 Mathematics.

Our Key Stage 4 curriculum intends to continue the development of all the areas of the Mathematics curriculum encountered in Key Stage 3 with an additional strand covering vectors. In Key Stage 4 problem-solving and reasoning skills are further developed and refined up to, and in many cases, beyond the standard required in GCSE Mathematics examinations. Students in all year groups are encouraged to compete in local, trust, and national competitions, like the UKMT Maths Challenges.

Many students at St Dunstan's continue on to study A-level Mathematics and/or Further Mathematics at our local providers. Our curriculum provides them with all the necessary skills to be successful in these courses. We also recognise that for many other students who do not take mathematics beyond KS4, mathematics is a critical skill for many professions and opens a world of opportunities for children. Our curriculum provides all of our students with the knowledge and skills they will need to be successful in their future careers.

Maths Curriculum Implementation:

As St Dunstan's is a member of the MNSP Trust, the MNSP Scheme of Learning is followed, which is differentiated into 5 strands. The ambitious nature of this curriculum and the challenging level of the top strand has been a huge success at St Dunstan's and outcomes have increased significantly, particularly for our high ability students and those students eligible for the pupil premium funding.

Maths is set by ability in all year groups and students are assigned to sets initially by their Key Stage 2 Maths results. Students are set so that they can access work that is at the right level of challenge. Set lists are reviewed regularly and when a student is attaining well they are moved up a group.

Key Stage 3

The Long Term Plan for each year presents and groups concepts in a logical sequence that enables students to develop the knowledge needed to access concepts later in the year and in subsequent years. This process begins with a 4-week induction phase at the start of Year 7 where we ensure knowledge acquired at Key Stage 2 is refreshed and securely in place.

In Years 7 and 8 all areas of the curriculum are covered over 9 units with each topic enriched through mastery lessons which consolidate recall and retention and enable a deeper exploration of problem solving with each concept. In Year 9, students recap and consolidate their learning and are then provided with stretch and challenge in preparation for their GCSE content. This consolidation in learning helps students to build their knowledge and skills, whilst providing a valuable opportunity to 'knit together' the mathematical strands.

Key Stage 4

The Key Stage 4 curriculum is divided into 3 carefully assembled modules of mutually reinforcing concepts. The first Year 10 module concludes with a fortnight of revision before a comprehensive assessment split over 3 45 minute papers (1 non-calculator, 2 calculator). Year 10 finishes with assessment through 2 full-length (90 minute) papers (1 non-calculator, 1 calculator) to begin to get students used to long format exams. Year 11 begins with a module of work explicitly focused on developing problem solving and application of knowledge to GCSE exam questions. Lesson resources are interspersed with content explaining the relevance of Mathematics topic to a broad range of further study and careers. A full set of mock GCSE papers is taken in November of Year 11, followed by a term of reviewing these mocks and revising before another set of mock GCSEs in March.

Progress is monitored through the same cycle of homework, feedback and follow-up work as Key Stage 3. Attainment is measured through tri-termly cycle of revision, assessment and holistic feedback on progress through MET reports emailed to students and parents. In

addition, a mid-unit assessment is used at the start of Years 10 and 11 to help students in the transition from KS3 style assessments to KS4 style assessments, and onto full-length (90 minute) GCSE papers.

Allocated Curriculum Time:

Year Group	Y7	Y8	Y9	Y10	Y11
Fortnightly lesson allocation (60 minutes lessons)	8	8	8	8	7

Curriculum Plan: Year 7

Term	Curriculum Foci Areas	Assessment Criteria
1	**Unit 0: Induction – Recap of KS2 Learning** • KS2 subject knowledge is reviewed and students tackle more sophisticated problems than students encountered at KS2. • Knowledge focus; Fractions, Percentages, Area & Perimeter, Sequences. • Expectations of students' mathematical reasoning are increased and they are expected to communicate like a mathematician. **Unit 1: Sequences, Functions and Angles** • Students learn to recognise patterns, continue sequences and progress to find general rules for sequences and using these rules to solve problems. Students use function machines with numbers and expressions and begin writing and simplifying expressions.	**1st Assessment: Unit - Induction** 45 minute written assessment.
2	**Unit 1: Sequences, Functions and Angles (cont.)** • Students develop their knowledge of angles rules from KS2 and present geometric arguments for their answers. **Unit 2: Percentages and Units, Area and Volume** • Students learn to find percentages, and tackle percentage increase and decrease problems, compound interest and repeated percentage change. • Students learn strategies for tackling these problems with or without a calculator and to be able to tackle more complex, real life problems.	**2nd Assessment: Unit 1** 45 minute written assessment.

3	**Unit 2 Percentages and Units, Area and Volume (cont.)** • Students recap the metric conversions for weight, capacity and length. • Students tackle Area & Volume problems, looking at increasingly complex shapes and how these may appear in unfamiliar contexts. **Unit 3: Numeracy** • Students develop their numerical understanding, securing their abilities at written methods; with an emphasis on securing accuracy in all calculations.	**3rd Assessment: Unit 2 45 minute written assessment.**
4	**Unit 3: Numeracy (cont.)** • Students learn to identify the properties of numbers and use these to solve problems. • Students begin to explore rounding and the accuracy of solutions and are introduced to how reliable estimates can be made.	**4th Assessment: Unit 3** 45 minute written assessment.
5	**Unit 4: Present and Interpret Data** • Students learn how to use tables to organise different types of data and which charts and graphs are appropriate to present each type of data. • Students learn to interpret graphs and charts and calculate averages.	**5th Assessment: End of Year Assessment** 45 minute written assessment.
6	**Unit 5: Probability** • Students learn how to describe and calculate probabilities for single and combined events. • Students develop their ability to organise their thinking using diagrams and tables to help aid their probability calculations.	**6th Assessment: Unit 4 and Unit 5** a 45 minute written assessment for both units combined.

Curriculum Plan: Year 8

Term	Curriculum Foci Areas	Assessment Criteria
1	**Unit 6: Expressions, Equations and Pythagoras** • Students are introduced to formal algebra and learn to create and simplify expressions. Students also learn to solve equations and inequalities of progressive difficulty. • Students have their first introduction to Pythagoras' Theorem and how this can be used to find missing sides in right angle triangles. Some will progress to more complex problems and trigonometry.	**1st Assessment: Unit 6** 45 minute written assessment.

2	**Unit 7: Indices and Transformations** • Students learn the laws on indices and how standard form can simplify calculations with very large and very small values. • Students learn to perform the 4 transformations to shapes on a coordinate grid and describe which transformation has occurred.	**2nd Assessment: Unit 7** 45 minute written assessment.
3	**Unit 8: Ratio and Graphs** • Students learn what a ratio is, how they can be simplified and how ratios can be used to solve problems, including real life problems. • Students investigate different types of graphs. Beginning with real life graphs and progressing to visual interpretations of the algebra concepts studied in unit 6.	
4	**Unit 8: Ratio and Graphs (cont.)** • Students investigate different types of graphs. Beginning with real life graphs and progressing to visual interpretations of the algebra concepts studied in U6. **Unit 9: Fractions and Accurate Drawing** • Students revise and strengthen their fractions knowledge from KS2, progressing their understanding to be able to deal with mixed numbers and perform the four operations with fractions. • Students deepen their understanding of percentages building on their knowledge from Y7 to look at more complex problems, including reverse percentages and compound interest.	**3rd Assessment: Unit 8** 45 minute written assessment.
5	**Unit 9: Fractions and Accurate Drawing (cont.)** • Students are introduced to the formal ruler and compass construction methods and how to use these to solve geometric problems. • Students are also introduced to map scales, scale drawings and plans and elevations.	**4th Assessment: Unit 9** 45 minute written assessment. **5th Assessment: End of Year Assessment** 45 minute written assessment.
6	**Unit 10: Statistics & Probability** • Students deepen their understanding of averages from Y7 to be able to calculate averages from tables or graphs, use averages to find missing pieces of data and compare data sets. • Students build on their Y7 knowledge of charts and graphs to look at more complex representations of data, such as pie charts and scatter graphs.	**6th Assessment: Unit 10** 45 minute written assessment.

	• Students aim to have a more fluent understanding of the key probability concepts and be better able to apply these to real life situations.	

Curriculum Plan: Year 9

Term	Curriculum Foci Areas	Assessment Criteria
1	**Unit 11 - Number and Ratio** • Students revise number content covered in Y7 and Y8, progressing to more complex concepts such as: reverse percentage problems, calculations in standard form and upper and lower bounds. • Students revisit ratio topics covered in Y8 and develop their understanding to solve more complex problems including combined ratios.	**1st Assessment: Unit 11** 45 minute written assessment.
2	**Unit 12 - Geometry and Measure** • Students build on their knowledge of units and area from Y8 and tacking more complex problems in 3D and involving parts of circles. • Students study compound measures; speed, density and pressure and begin to solve problems using these. • Students develop their understanding of right-angled triangles and trigonometry, working on problems with multiple steps.	**2nd Assessment: Unit 12** 45 minute written assessment.
3	**Unit 13 - Algebra** • Students consolidate their understanding of formal algebra notation with a focus on writing expressions and equations using conventional notation. • Students solve equations and inequalities involving quadratic expressions and rearrange formulas. • Students learn to find general rules for sequences, including quadratic sequences and use these to solve problems.	**3rd Assessment: Unit 13** 45 minute written assessment.
4	**End of KS3 Assessment** • Students consolidate their fractions knowledge, focusing on more complex calculations with mixed numbers and converting between fractions and recurring decimals. • Students recap the ruler and compass constructions and solve loci problems. • Students develop their angles knowledge including angles in polygons and circle theorems, with a focus on providing full geometric arguments.	

5	**End of KS3 Assessment (cont.)** • Students develop their indices knowledge, performing calculations in standard form, evaluating fractional and negative indices and estimating powers and roots. • Students solve more complex equations than earlier in the year, using the quadratic formula and tackling problems which arise from geometric facts. • Students develop their knowledge of graphs, looking more deeply at graphs of curves, rates of change and direct and inverse proportion.	**4th Assessment: End of KS3 Mid-term Assessment** 45 minute written assessment.
6	**End of KS3 Assessment (cont.)** • Students develop their understanding of statistics, including estimating averages from grouped data and using combined means • Students draw and interpreting more complex graphs, understanding the difference between interpolation and extrapolation and make more precise estimates from graphs. • Revision and preparation for end of KS3 assessment.	**5th Assessment: End of KS3 Assessment** 2 x 45 minute written assessment.

Curriculum Plan: Year 10 Mathematics
Exam Board: Edexcel - Specification:1MA1

Term	Curriculum Foci Areas Assessment Criteria	Assessment Criteria
1	**KS4 Assessment 1** • Students revise their percentages knowledge with a focus on solving problems involving repeated percentage change, compound interest and reverse percentages. • Students recap their knowledge of transformations progressing to enlargements and combined transformations. • Students extend their knowledge of solving and simplifying to look at simultaneous equations, algebraic fractions and complex linear and quadratic equations.	**KS4 Assessment 1 Mid-term Assessment** 45 minute written assessment.
2	**KS4 Assessment 1 (cont.)** • Students learn to solve graphical problems using parallel and perpendicular gradients of lines, and find points of intersection. • Students develop their knowledge of trigonometry to solve problems involving multiple steps and non-right-angled triangles. • Students consolidate their understanding of sequences and using Nth term rules to generalise linear and quadratic sequences. • Students develop their knowledge of ratio, solving problems using exchange rate, combined ratio and a mixture of ratio and fractions, decimals and percentages.	

3	**KS4 Assessment 1 (cont.)** • Students develop their knowledge of angles, focussing on parallel lines, polygons and congruence. • Students are introduced to the idea of sampling, the different types of sampling and why it may be necessary to obtain a sample. • Students use a variety of diagrams to organise their probability thinking and solve problems where a combination of events occur.	**KS4 Assessment 1** 3 x 45 minute written assessments.
4	**KS4 Assessment 2** • Students develop their numeracy, performing all calculations accurately, including with decimals, and improve their understanding of accuracy using bounds. Some will learn to calculate combinations of events and prove statements about divisibility. • Students consolidate their understanding of indices, simplifying where index laws need to be applied multiple times and evaluating negative and fractional indices.	
5	**KS4 Assessment 2 (cont.)** • Students develop their understanding of inequalities, showing these on a number line and solving them. • Students develop their knowledge of graphs, looking at more complex graphs than they have previously studied. Some will be introduced to functions and learn to calculate area under a graph.	
6	**KS4 Assessment 2 (cont.)** • Students extend their knowledge of units, area and volume to look at more complex shapes than they previously studied. Some will be introduced to vectors. • Students develop their understanding of probability and statistics, approach to calculating averages and interpreting graphs.	**Year 10 Mock Exams** 2 x 90 minute written assessments.

Curriculum Plan: Year 11 Mathematics
Exam Board: Edexcel - Specification:1MA1

Term	Curriculum Foci Areas Assessment Criteria	Assessment Criteria
1	**KS4 Assessment 3** • Students will investigate representations that can be applied across multiple problem solving questions such as: the use of tables to solve mean, or compound measure problems, and the use of ratio representations in multiple contexts (including polygon angles and similar triangles). • Students will extend their knowledge of algebraic manipulation, including factorising and solving quadratic equations, as well as use of elimination	**KS4 Baseline Assessment** 45 minute written assessment. Taken very early in Term 1 to ascertain what has been retained from Year 10.

	and substitution methods for solving simultaneous equations.	
2 **3**	**KS4 Assessment 3 + Revision** • Students will be provided with full Question Level Analysis (QLA) for the KS$ Assessment 3 Mid-term Assessment. • Students will be given personalised areas for development from the QLA. • Each class will revise content based on the QLA. **Revision** • Students will be provided with full Question Level Analysis (QLA) for the Mock Exam 1. • Students will be given personalised areas for development from the QLA. • Each class will revise content based on the QLA. • Students complete practice exam questions in class and for homework.	**Year 11 November Mock Exams** 3 x 90 minute written assessments.
4	**Revision** • Students will be provided with full Question Level Analysis (QLA) for the Mock Exam 2. • Students will be given personalised areas for development from the QLA. • Each class will revise content based on the QLA.	**Year 11 March Mock Exams** 3 x 90 minute written assessments.
5	**Revision and Exams** • Final exam preparation involving practice example questions and MET Revision workbooks which provide exam preparation corresponding to each area for development highlighted on the students' MET reports.	

Mathematics Final Assessment Structure:

Component	Weighting	Content	Proposed Date of Examination
r 1	33.3%	Non-Calculator 1 hour 30 minutes	May/June of Year 11

r 2	33.3%	Calculator 1 hour 30 minutes	May/June of Year 11
r 3	33.3%	Calculator 1 hour 30 minutes	May/June of Year 11

Please see exam board websites for up to date information:
https://qualifications.pearson.com/en/qualifications/edexcel-gcses/mathematics-2015.html