

## Mathematics Curriculum; Intent, Implementation, Impact, St Dunstan's School 2021 - 2022

## St Dunstan's School Context

St Dunstan's cohort size is smaller than average. At the start of the year St Dunstan's had 398 students attending, this is 39.3% of the national average.

St Dunstan's has a higher proportion of students who are eligible for FSM (24.9%). This is higher than the average for state funded secondary schools (18.9%).

St Dunstan's has a more monocultural demographic than the national average (88.7% white British). The proportion of students with a first language, known or believed to be other than English, is 6.8% at St Dunstan's. This is far below the national average (19.3%).

Intent	Implementation	Impact	
The St Dunstan's mathematics curriculum intends to instil the St Dunstan's core values of Truth, Resilience, Awareness and Kindness (TRAK) as follows:	The long-term plan for eTach 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	<b>Mathematical Fluency</b> : Students' proficiency in the subject builds over time. The knowledge checker tasks indicate that students' fluency in answering particular skills improves with every task set.	
Truth: The curriculum intent is to give students the	securely in place.	<b>Problem-Solving</b> : Students' problem-solving ability improves over time. The Q+ challenge questions are answered with	
mathematical fluency and reasoning needed for them to make informed decisions in their future lives.	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	increasing proficiency. Students who do not attempt the Q+ questions attempt improvements in <i>purple pen</i> .	
<b>Resilience</b> : The curriculum intent is to develop students'	each concept.	<b>Misconceptions:</b> Students are aware of the key misconceptions that may arise during a particular topic. Students are able to articulate these misconceptions	
unfamiliar problems.	Again topics are sequenced to ensure that prior knowledge is required to access a unit. That specific prior knowledge is covered in the proceeding	Projetive Learning Environment: A relationship based on mutual	
<b>Awareness:</b> The curriculum intent is to make students aware of key <b>misconceptions</b> . Where there are cross curricular links or relevant career links students are to be made aware.	units. For example, students cover the lowest common multiple during Unit 3, this skill is required to add and subtract fractions which is covered in unit 9. Students cover substitution in Unit 6, this knowledge is required to plot functions, which is covered during Unit 8. For further details regarding the sequencing of learning please refer to the MET Curriculum	Positive Learning Environment: A relationship based on mutual respect is established between students and their teacher. Pupil voice indicates that students appreciate their teacher and learning walks indicate that lessons are calm and productive.	
·····	Мар.	<b>Progress</b> : 80% of KS3 students are meeting or exceeding their age related expectations.	
a deep appreciation of the patterns and relationships between numbers. Students will be rewarded for their	To ensure students do <b>not</b> forget key skills needed for future learning the department has implemented a starter system, a <i>LL/LT/LY</i> starter system		
positive contributions in lessons. A <i>positive learning environment</i> flourishes in the classrooms.	in the past are frequently revisited and stay relevant in student's minds.	80% of <i>PP</i> students are meeting or exceeding their age related expectation	
Key Stage 3:		80% of <b>boys</b> are meeting or exceeding their age related expectations.	



## Sequencing of learning

Our key stage 3 curriculum intends **to sequence knowledge** in a logical manner, which helps to promote good outcomes with our current cohort. For example, our current year 7 cohort has many students with **EHCPs**, who may potentially find the transition between primary school and secondary school difficult. To make this transition as smooth as possible we have chosen to sequence topics which have been touched on at primary school, early in year 7. For example, **Unit 1** is on sequences, functions and angles. The prior knowledge needed to access these topics is fairly robust in KS2 students and this gives students a solid base to their learning. Teachers can then build on these firm foundations in their lessons.

KS2 students often have a more varied experience of algebra and we have therefore chosen to sequence this topic in year 8 (**Unit 6**). This will allow more time for students to adjust to the demands of secondary school before covering that unit. Unit 1 also contains some of the soft skills needed to access Unit 6. For example, inverse operations are covered in Unit 1 in an informal manner. However in unit 6 inverse operations are then applied to solving equations in a formal manner.

Key Stage <b>2</b> Numeracy Fractions and Percentages Ratio and Proportion	Key Stage <b>3</b> Numeracy Indices Fractions Percentages Ratio and Proportion	Knowledge Check Weeklyon- stakes quiz on 10 kow concepts for this unit
Basic Algebra	Expressions and Equations Sequences and Functions Graphs	î
Measure Geometry	Units, Area and Volume Pythagoras and Trigonometry Angles	Attainment is measured th and holistic feedback on pr students and parents.
	Accurate Drawing Coordinates and Transformations Present Data	Revision Students helped to diagnose weaknesses and focus practice ass flu
Enhanced Curriculum	Probability	Image: a product of the second sec

Year <b>7</b>	Unit 1	Unit 2	Unit 3	Unit 4	Unit 5
	Sequences & Functions and Angles	Percentages and Units, Area & Volume	Numeracy	Presenting & Interpreting Data	Probability
Year <b>8</b>	Unit 6	Unit 7	Unit 8	Unit 9	Unit 10
	Expressions, Equations and Pythagoras	Indices and Transformations	Ratio and Graphs	Fractions and Accurate Drawing	Statistics and Probability
Year <b>9</b>	Unit 11	Unit 12	Unit 13	End of KS3 Assessment	
	Number	Geometry and Measure	Algebra	Fractions, Numeracy, Surds and Indices, Expressions & Equations and Graphs Accurate Drawing, Presenting and Interpreting Data	

The final term of Year 8 and the first three terms of Year 9 are used to consolidate and enrich understanding of the 4 branches of Key Stage 3 mathematics. The last 3 terms of year 9 focus on preparing for the transition to KS4. This process builds students ability to retain and organise their key stage 3 knowledge over a longer time frame.

Progress is monitored through a 2/3 weekly cycle of homework, feedback and follow-up work.



In addition, knowledge development is tracked through each unit with a *knowledge check* covering key concepts. These knowledge check tasks cover the same knowledge on each task. This consolidation has a repetitive edge however it helps improve student recall.



Attainment is measured through a termly cycle of revision, assessment and holistic feedback on progress through MET reports emailed to students and parents.

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**Cross curricular:** Our students can confidently apply their fluency and reasoning in mathematics to the other subjects where there is a commonality of skill. Where there are differences between subjects, for example, lines of best fit, students are aware of these differences.



The curriculum is fully differentiated into five overlapping syllabi enabling students to spend more time on the concepts they need to secure to We recognise that our current demographic at St make the most progress. Frequent opportunities to transition between Dunstan's has a higher rate of disadvantaged students classes ensure rapid progress is recognised and sustained so that there than the national average. Our curriculum intends to is appropriate and continuous challenge for all. promote strong outcomes with this cohort by fostering a spirit of aspiration and academic excellence. At key stage Star Star\* 3 our curriculum not only includes all aspects stated on the national curriculum, it also exceeds the national R-M+ / M M- / R+ R E+ / E / E Flight Path Exceeding All / Exceeding Most Exceeding Some Developing All *curriculum.* For example, our high ability year 9 students Meeting Most Meeting Some / Meeting All Developing Most are given the opportunity to solve simultaneous equations, which doesn't appear explicitly on the national curriculum Plus, and Plus+ syllabi support HAP students with all topics studied at greater depth. UKMT team and individual challenges help foster an enthusiasm for rich problem solving and further Mathematical study. St Dunstan's has a more monocultural demographic than the national average. We intend to complement our in **Q**<sup>+</sup> challenge guestions are built into all syllabi and homework providing class curriculum with assemblies, PSHE sessions and an ever-present opportunity to test understanding beyond the main school trips (COVID permitting). That highlights the objective. contributions a diverse range of mathematicians has had Star\* syllabus supports students with weaker numerical skills including on the subject. The intent here is to expose students to the some **SEND** with a higher emphasis on core numeracy and life skills. achievements of people from other cultures and help foster a sense of tolerance. The Key Stage 4 curriculum Key Stage **4** The Key Stage 4 curriculum is divided into 3 carefully assembled Mathematical Fluency: Students' proficiency in the subject builds intends to continue the modules of mutually reinforcing concepts. The year 10 modules last for 3 over time. The homework activities, weekly tens and summative terms each. Year 11 commences with a module of work explicitly development of all the areas of assessments, indicate that students' fluency in answering Fractions focussed on developing problem solving and application of knowledge to the mathematics curriculum particular skills improves with every task set. Ratio and Proportion encountered in Kev Stage 3 GCSE exam questions. with an additional strand Sequences and Functions Key Stage 4 Assessment 1 Key Stage 4 Assessment 2 covering vectors. Graphs Year **10** Percentages and Ratio Problem-Solving: Students' problem-solving ability improves Vectors Further Equations and Sequences Key Stage In 4 Pythagoras & Trigonometry, Transformations and Angle Reasoning over time. The Q+ challenge questions are answered with Units, Area and Volume Charts & Graphs and Probabilit problem-solving and Pythagoras and Trigonometry increasing proficiency. Students who do not attempt the Q+ Angles Key Stage 4 Assessment 3 reasoning skills are further questions attempt improvements in *purple pen*. Accurate Drawing Revision and Exam Year **11** ites and Transform Algebraic and Geometric Problem Sol developed and refined up to, Preparation ication of knowledge to GCSE style and in many cases, beyond questions Present Data Misconceptions: Students are aware of the key misconceptions the standard required in GCSE that may arise during a particular topic. Students are able to Lesson resources are interspersed with content explaining the relevance Mathematics examinations. articulate these misconceptions. of Mathematics topic to a broad range of further study and careers. The curriculum recognises the pivotal role that Progress is monitored through a fortnightly cycle of homework, feedback Mathematics plays in facilitating success in many Key Positive Learning Environment: A relationship based on mutual and follow-up work as at Key Stage 3. Stage 5 subjects. respect is established between students and their teacher. Pupil



The curriculum also recognises that in many cases GCSE Mathematics will be the final Mathematics qualification most students pursue and that the *core numeracy*, *problem-solving, systematic deduction, critical reasoning* and ability to *interpret statistics* acquired in Key Stage 4 are crucial to future employability and quality of life.

St Dunstan's has a *higher proportion* of children eligible for *FSM* than the national average. The curriculum intends to enrich our students with experiences that will broaden their *cultural capital*. In addition, in Year 11, students build confidence and familiarity with exam style questions through *Weekly Ten* worksheets covering 10 key exam concepts.



Attainment is measured through tri-termly cycle of revision, assessment and holistic feedback on progress through MET reports emailed to students and parents.



Differentiation of the curriculum into 5 overlapping syllabi continues with opportunities for students to transition between syllabi after each assessment. In Year 11 the syllabi build toward Foundation or Higher tier GCSE entry. Star Star\* S S J Higher Foundation Key Stage 4 Grade Grade Grade Grade Grade Target 8/9 6/7 5/6 4/5 3/4

All support for HAP, PP and SEND continues with a series of intervention sessions.



voice indicates that students appreciate their teacher and learning walks indicate that lessons are calm and productive.

GCSE Outcomes:

Grade 7+: 17% Grade 5+: 48% Grade 4+: 17% P8 (all students) +0.3

P8 (*PP students*) +0.1, students achieve better than the national average, the gap between them and their non-PP peers closes.