English Martyr's Mathematics Department Curriculum Statement.

The school is committed to ensuring that all students become excellent mathematicians, competent in number and mathematical reasoning. To achieve this, the school provides a sequenced curriculum, appropriate to the needs of all students, enabling each person to build their knowledge and develop it across the term and over the years.

The mathematics curriculum at English Martyrs aims to develop young people who::

- Enjoy their Mathematics lessons while feeling supported by their teacher
- Secure positive destinations beyond school in careers involving mathematics
- Take pride in their work by making sure presentation is of the highest standard every lesson
- Understand how mathematics is experienced and applied in everyday life
- Want to achieve highly.
- Have a positive growth mindset and become resilient, confident and responsible citizens.

Our mathematics curriculum provides opportunities for students to

- become fluent in the fundamentals of mathematics, including 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 persevering in seeking solutions

How we deliver the curriculum

The curriculum is taught formally in lessons and this is then consolidated by students completing one hour per week of homework on the Sparx Maths website. Teachers set homework based on what has been covered in class but students are also given questions which consolidate previous learning. Sparx is able to tailor homework to the needs of individual students to ensure that every student received one hour of homework based on their ability.

Retrieval practice happens at the start of every lesson where students undertake a brief task which consolidates previously learned material. Teachers plan these retrieval starters carefully and use them to test whole class areas of weakness. Sometimes these starters will be based on the feedback from the Sparx Homework.

The teacher then models the new idea for the lesson and students then work silently for 20 minutes on deliberate practice. The teacher then circulates and formative assessment is ongoing and then at the end of the lesson there will be a final activity involving the teacher checking understanding.

Summary of The English Martyrs T&L Routines

Retrieval	- To be completed in silence and independently - Personalised to suit learner needs - Use English Martyrs Retrieval proforma
Questioning	- Cold calling to be used for all questioning - No hands up - Questions are planned and pre-empted through planning
Modelling	- Modelling is done through a visualiser, or one note only - Teachers use Rosenshine's 'I do, we do, you do' framework - Teachers use board = paper when modelling
Practice	- Lasts a **minimum** of 15 minutes - Practice time is academically challenging. (Avoid repetitive questions where a learnt algorithm will get the answer - To be completed independently and in silence

The focus in year 7 and 8 is ensuring that students are fluent in basic number skills. This is why our curriculum maps for those years start with 'Number' topics.

We ensure that in year 7 and 8 we cover key topics from **Number; Ratio and Proportion, Algebra, Geometry and Measures as well as Handling Data**. In Year 7 and 8, KS3 students are given the opportunity to explore, problem solve and reason through mathematical investigation. Our curriculum also includes links to how different careers use each aspect of math's.

In years 9 to 11 students will be given the opportunity to build upon the work completed during Year 7 & 8, ensuring that students can find links between different topics and solve problems using a range of skills. Learning is developed and extended across Number, Ratio and Proportion, Algebra, Geometry and Measures

and Handling Data. Students will learn how mathematics can be used outside of the classroom and they will gain problem-solving skills that can be used across school.

In particular in years 9-11, we focus on the following skills:

Percentages, Proportion, Transformation, Area and Volume, Pythagoras or Trigonometry, Angle Reasoning. Algebra and Graphs, Harder Number Skills.

Every student of all abilities will cover all of the concepts above in each year from 9-11.

Mathematics Plan and Overview for Years 7-11

Year	LPA	MPA	HPA	VHPA*
7	Stage 6	Stage 7	Stage 8	Stage 9
↓	↓	↓	↓	↓
8	Stage 7	Stage 8	Stage 9	Stage 10
↓	↓	↓	↓	↓
9	Stage 8	Stage 9	Stage 10	Stage 11
↓	↓	↓	↓	↓
10	Stage 10F	Stage 10	Stage 11	Further Maths
↓	↓	↓	↓	↓
11	Stage 11F	Stage 11	Further Maths	AS LEVEL
Approximate % of students	28%	45%	20%	<1%

Curriculum Overview

- We have a 5-year curriculum plan for year Y7-11 which enables students to develop a rich knowledge base over time and apply this to increasingly demanding problem-solving tasks and investigations as well as enrichment activities.

- All students are taught in ability sets. Initially year 7 are taught in forms for 2 weeks while we give them a baseline assessment. Sets are then carefully constructed using this internal baseline test along with KS2 Scaled scores.

Stage 6	Stage 7	0	Stage 9
7LPA	**7MPA, 8LPA**	**7HPA, 8MPA, 9LPA**	**8HPA, 9MPA,**
Number System S6 CL	Number System 1 S7	Number System 1 S8	Indices 1 S9 / 10F
Number System S6 CL	Number System 2 S7 CL	Number System 1 S8	Standard Form S9 / 10F CL
Calculating 1 S6	Number System 2 S7 CL	Calculating S8	Sequences 1 S9 / 10F CL
Calculating 2 S6	Calculating 1 S7	Algebra 1 S8	Constructions 1 S9 / 10F CL
Algebra 1 S6 CL	Calculating 1 S7	Algebra 1 S8	Similarity & Congruence 1 S9/10F
Algebra 1 S6 CL	Checking & Est S7 CL	Pythagoras 1	Pythagoras 2 S9 CL
Test	Test	Test	Test
Half term	Half term	Half term	Half term
FDP 1 S6 CL	Statistics 1 S7 CL	Geometry 1 S8	Trigonometry 1 CL
FDP 1 S6 CL	Statistics 1 S7 CL	Geometry 1 S8	Revise Angles (2 lessons)
Shape 1 S6 CL	Statistics 2 S7 CL	FDP 1 S8	Circle Theorems 1
Checking and Est S6 CL	Statistics 2 S7 CL	Sequences 1 S8	FDP 1 S9 Reverse and compound %
Area and Perimeter S6 CL	Algebra 1 S7 CL	Constructions 1 S8	Probablility 2 Stage 9/10F CL
Area and Perimeter S6 CL	Algebra 1 S7 CL	Constructions 1 S8	Algebra 1 S9/ 2 10F (2 brackets 1) CL
Test	Test	Test	Test
Probability S6 CL	Algebra 2 S7 CL	Ratio and Proportion S8	Algebra 1 S9/ 2 10F (2 brackets 1) CL
Review	Review	Review	Rounding and Estimation S9/10F CL
Christmas	Christmas	Christmas	Christmas
Christmas	Christmas	Christmas	Christmas

Assessment Structure

The principal is that the minimum requirement for a year 6 is to follow the stage 6 curriculum and is aimed at students identified by primary school data as working below expected level.

Stage 7 therefore represents the level of work required by any Middle Attaining Year 7 to go on and achieve GCSE successfully (Grade 5+) at Higher Tier in Year 11. The scheme of work provides opportunity for topics to be taught in depth with links to NRICH enrichment activities and problem solving activities designed through various Maths Hubs.

Every half term students in years 7-9 will sit a Synoptic Test (see description below). Students will also be given a mini assessment part way through each half term.

Years 10 and 11 follow a similar structure but they sit mock exams in November/December and February/March which replace their Synoptic Tests.

When teacher mark mock exams they will give students a ‘QLA’ (Question Level Analysis’. This is a colour coded sheet which informs them which topics they performed well on and which topics they need to improve on. It is linked to Sparx Maths.

Basic Skills Tests

Basic skills tests are done fortnightly. These are “Low Stakes” tests and although they have some contribution towards informing Assessment B and C, the aim of these tests is to ensure students are practicing their basic skills and identifying areas of weakness regularly.

Synoptic Tests.

These tests are completed once every half term and help inform teachers about current progress and helps them predict a more accurate assessment grade.

The Synoptic Tests at each grade follow the same structure and teachers mark these tests and identify 'next steps' for students and then lead feedback lessons where students have the opportunity to

Mathematicians (Enrichment)

Students in the top sets will be given the opportunity to enter the Maths Challenge every year which is a national maths competition where they can win bronze, silver or gold certificates.

Additionally we work closely with the AMSP who provide opportunities for trips, for example some year 9 students spend a day at the National Space Centre learning about maths in space.

All top set students will be given the opportunity to study a second GCSE in a mathematical subject – **GCSE Statistics**. This is taught within maths lesson time, once per fortnight in year 9 and weekly in year 10. They sit this exam at the end of year 10.

Additionally, selected top set year 11 students are invited to pursue **GCSE Further Maths**. This is currently an after school lesson and students sit the exam at the end of year 11.

This means that for our most able students, they have the opportunity to leave us with 3 GCSE's in mathematical subjects.

GCSE

Students will be entered for either the Foundation tier or Higher tier.

Students will sit 3 papers: 1 Non Calculator and 2 Calculator papers.

Each paper is 1hour 30 minutes long.

Students need to consistently demonstrate across year 8 and 9 that they are working at a grade 4/5 level at least to be considered for the Higher tier paper.

This data, along with the results from the two mock exam series in year 10, aswell as general effort in class and with homework will help inform the final decision on tier of entry so that this can be confirmed by the end of year 10.

Intervention

Where the timetable allows, we are sometimes able to provide some additional intervention for specific students. Additionally, in year 11 we will provide intervention in registration to help students either secure a grade 4, grade 5 or grade 7. We pick these students based on mock exam data.

Literacy

Maths teachers are committed to ensuring excellent mathematical literacy. We employ a variety of strategies such as: students write a key word box and a definition when a key mathematical word is introduced, students have the visual stimulus of 20 key words for each Key Stage identified on posters with an image around the department, literacy tasks in retrieval starters such as writing definitions or practicing reasoning sentences.