



## Mossbourne KS3 Curriculum Overview - Maths

### Introduction

All students at Mossbourne secondary academies work towards sitting their GCSE maths at the end of their year 11. This qualification uses three broad assessment objectives to grade students, resulting in an integer numeric grade ranging from 1 (the lowest) to 9 (the highest). The three assessment objectives and the percentage weighting that each takes in the exams is shown in the table below.

Assessment Objective		Percentage Weighting
AO1	Use and apply standard techniques	40-50%
AO2	Reason, interpret and communicate mathematically	25-30%
AO3	Solve problems within mathematics and other contexts	25-30%

Since reforms were introduced in 2015 and first examined in 2017, there has been a greater emphasis on the second two assessment objectives and therefore a greater need for all students to be able to demonstrate reasoning skills and solve problems. It is important that students are supported to develop these skills throughout all years of their maths education as they need to be interwoven and developed in relation to all topic areas including number, ratio and proportion, algebra, geometry and measure, statistics and probability.

We also believe that these skills, alongside the focus on knowledge, without which those skills would be meaningless, differentiate between a student who has been taught Maths and a student who has learned to think like a mathematician. That quantitative, analytical style of thought is something we believe that all students who leave a Mossbourne academy should be equipped with.

The basis for the key stage 3 curriculum is a focus on 'depth over breadth' in order to ensure teachers and students give adequate focus to these reasoning and problem-solving skills. The approach to be taken is one which gives students and teachers time to fully engage with and understand topics, instead of moving on and covering more content too soon.

The KS3 curriculum will run for 6 terms across both Years 7 and 8, allowing for a smooth transition into KS4. The six topic areas have been specifically selected to prepare students in as strong a way as possible in numeracy, reasoning and problem solving to begin the GCSE courses. The year 9 scheme of work builds on concepts of number, algebra, data handling and geometry introduced and explored in years 7 and 8. Each term will focus on the following core topics as shown below:

#### Year 7

1. Number 1 – Number properties and FDP
2. Algebra 1- Expressions, equations and formulae
3. Data Handling and Probability

#### Year 8

1. Number 2 – Ratio and Proportion
2. Shape and Measure – Shape properties and Geometry
3. Algebra 2 – Further algebraic manipulation and number patterns

The core topics of number and algebra are introduced in Year 7 but revisited and extended in Year 8. This allows teachers the time to work on the basics and build a strong foundation for their students. If they were to cover all of number and algebra in one year, it may lead to confusion once the more complex ideas are introduced, hence the decision to spread this out.

### Assessment Structure

At the start of Year 7, all students will sit a baseline arithmetic test to check they are suitably set and give teachers a better idea of their ability from primary school. There will then be 6 assessments in Year 7 and 6 in Year 8, one every half term, which total 50 marks each. The marks for each half term will be added together at the end of the full term and students will receive a termly score /100. Each test will be completed in a single lesson (55 minutes). The only exception is the final paper of each year, which is sat during the off-timetable exam weeks. This assessment will be 80 marks and take 90 minutes to complete.

Each assessment will have a 60:40 split between the content learnt that term and any previous content taught in the curriculum. Also, all but one of the assessments are non-calculator papers. We believe that students need to improve their arithmetic skills at this stage rather than relying on their calculators.

### Oracy and Key Words

In order to improve student oracy during KS3, there is a focus on key words in the curriculum. This will allow students to access topics more easily and become fluent in the language of formal mathematics.

In term of Key words, each of our SOWs contain all the key words for that topic. Furthermore, each student will receive a knowledge organiser for the term containing all the key words from the SOW. Students will be expected to learn these key words and use them with ease each lesson. Below is an example of a knowledge organiser from year 7:

<b>Year 7 – Term 3 Probability and Data Handling</b>	
<b>Key words: Probability</b>	
<b>Experimental probability</b> - Experimental probability is the ratio of the number of times an event occurs to the total number of trials or times the activity is performed.	
<b>Theoretical probability</b> - calculated by dividing the number of favourable outcomes by the total possible number of outcomes.	
<b>Frequency</b> – amount of which something occurs over a given period of time or sample.	
<b>Biased</b> – A systematic error which makes all values wrong by a certain amount.	
<b>Probability Scale and Language</b>	
Probability is the chance of something happening. It is measured on a scale from 0 to 1. If a probability is 0 it is impossible and if it is 1 the probability is certain.	