Maths Curriculum Summary

KS3 curriculum

Introduction

In keeping with the aims stated above our KS3 Curriculum in mathematics is designed to introduce the content and skills of the National Curriculum while maintaining an enthusiasm for mathematics.

In our experience on arrival at this school a student's technical skills are heavily influenced by the ability and enthusiasm of their primary school teacher and they are not necessarily a reflection of their innate ability. As a consequence in year 7 there is no setting by ability or performance. During this important first year of secondary school mathematics all students are brought up to a high minimum standard while allowing already competent students to refine their skills on problem solving and fluency.

By the end of year 7 a noticeable differential is apparent between students whose comprehension of a new skill is almost instantaneous and those who require time to develop those skills. To support the learning of all students, setting is introduced in year 8 so students may be taught in a class appropriate to their pace of comprehension. As these are still foundation years to us the content studied by all students is entirely the same.

We believe strongly in the National Curriculum's aim of ensuring that a student's skills in the application of mathematics are improved during KS3 as well as teaching them an increasing set of mathematical skills. This is accomplished by encouraging fluency with the techniques available, encouraging a systematic approach to problem solving and a continual reinforcement of the importance of presenting their work as a well reasoned logical argument based on evidence.

All students are entered for the national maths competition the Junior Mathematics Challenge organised by the UKMT. We have many students make it through to the subsequent qualifying rounds and we support them in this.

National Curriculum: Click here

The list of mathematical skills contained within the KS3 National Curriculum for mathematics is wholly contained within the KS4 National Curriculum. To be specific there are no ideas or skills taught in year 7 or 8 which are not required for GCSE or A level. As a consequence it is sensible to treat years 7 to 11 as a 5 year programme of study which continually introduces, extends and refines student understanding. That being said with the exception of a few topics the vast majority of the KS3 curriculum is covered entirely within the first 2 years of study at this school. We do extend algebraic skills well beyond KS3 during this time.

Year 7

Topics covered	Principal resources
To understand the family of numbers;	Assorted classroom text books, worksheets, Mymaths, Kerboodle online Foundation GSCE text book
To extend rational numbers to equivalent fractions and their use for comparing fractions.	
To switch between terminating decimals and fractions.	
Core numeracy skills review	
Introducing Algebra	
4 operations with negative numbers	
Solving simple linear equations	
Equivalent Fractions and addition/subtraction	
Percentage Multipliers and increase/decrease	
Simple Angle Rules	
Angles in parallel lines including vocabulary.	
Triangles and Proof	
Co-ordinate in 4 quadrants and quadrilaterals	
Simple Substitution	
Basic Straight Line Skills	
Basic Index Laws	
Order Of Operations (BIDMAS)	
Basic Bracket Skills	
Area and Perimeter of compound shapes	
Equation of a straight line	
Patterns and Sequences	
Rounding decimal numbers	
Reflectional and rotational symmetries of shapes	
Metric system and switching between units of SI units	
Using Ratio	
Primes, Factors, Multiple, LCM and HCF	
Circles Properties	
Compounds shapes - Area	
Pythagoras' Theorem	

Special Numbers and Patterns	

Year 8

Topic	Principal resources
To learn and use the rules of positive integer indices now adding the rules for division	Assorted classroom text books, worksheets, Mymaths, Kerboodle online Foundation GSCE text book
Recap of simplifying	
Multiplying binomials	
Making and solving more complicated equations	
Fundamental construction skills	
Correlation	
Bearings and constructions	
Percentage changes	
The meaning of $y = mx + c$	
Multiplying and dividing fractions	
Negative Indices	
Extending Making and Solving Equations	
Applying Pythagoras	
Using Standard Form	
Using Fractions	
Repeated Percentage Changes	
Solving inequations	
Simple transformations	
Grouped Frequency Tables	
Cumulative Frequency graphs	
Finding Dimensions given Volume or Area	
Recognise a quadratic curve	
The Maths of Taxation	
Introductory trigonometry	