Mathematics

ACADEMIC PATHWAY YEAR 3 - YEAR 13

Bedford Modern School.

Introduction

Facility with numbers and mathematical processes are a vital part of everyday life. To work with computers, carry out projects in the home, invest money, select financial projects and even to do the weekly food shopping, a sound set of mathematical skills are essential. Mathematics is also a requirement in many professions including medicine and veterinary medicine, engineering, science and technology, finance, computing and teaching.

JUNIOR SCHOOL YEAR 3 AND 4

Children are set for Maths according to ability but all cover the same work and sit the same exam at the end of the year. Place value underlies all the work together with times tables knowledge and number bonds. Consolidation of the four rules and application through practical maths and investigations are worked on in both years. Topics include fractions; data handling; multiples and factors; and shape and measure. Top sets are given the opportunity to apply and extend their knowledge.

JUNIOR SCHOOL YEAR 5 AND 6

Children are set for Maths according to ability but all cover the same work and sit the same exam at the end of the year. Children consolidate the four rules and the work done in previous years. In addition they cover topics such as percentages; averages; probability; algebra and sequences; ratio and proportion; and extending knowledge on properties of number. The top sets in both years are extended with investigation work and in addition, enter the Primary Maths Challenge, a national competition for the most able mathematicians in the country.

SENIOR SCHOOL YEAR 7 AND 8

Year 7 and 8 students are taught in sets according to their ability. The curriculum further develops their numeracy skills while adding to their algebra, geometry and statistics knowledge. There are tests at the end of each topic.

The UK Junior Maths Challenge competition stretches the more able Mathematicians and, for those who are successful, there is the opportunity to take part in the UKMT Mentoring scheme.

A weekly Maths Club runs at lunchtime for those with a passion for the subject.

SENIOR SCHOOL YEAR 9 TO 11

Students sit the Edexcel International GCSE which offers a balanced curriculum that prepares students for studying Mathematics at level 3 while providing access to all levels of ability.

Top set students sit the exam at the end of year 10 and take the Additional Mathematics FSMQ (Level 3) in the summer of year 11.

Assessments take place every half term to provide students, staff and parents with regular feedback.

The UK Intermediate Maths Challenge competition stretches the more able students and the UKMT Mentoring scheme is available to those that qualify.

SIXTH FORM

Mathematics is offered as an AS/A Level, and Further Mathematics AS/A Level is an option for the most able students.

Students are able to take part in the UK Senior Maths Challenge competition, with the opportunity to progress to national and international levels of challenge. There is also a Team Maths Challenge event with Regional heats at the Centre for Mathematical Sciences in Cambridge, and the opportunity to qualify for the National Finals.

Students have the opportunity to attend the Open University Christmas Maths lecture each year.

STEP/MAT support is provided for those applying to study Mathematics or a Maths-related degree at Oxbridge and other universities that require it.

Lloyd Chapman 1999-2006
Postdoctoral Research Fellow in Mathematical Epidemiology

"I really enjoyed maths lessons at BMS. There was a small group of us doing both Maths and Further Maths and we all got on well and had a lot of fun in lessons. The teaching was great and definitely played a big part in me deciding to study maths at university. After I left BMS in 2006 I was lucky enough to secure a place at University of Oxford to study maths."

"By the time I reached my fourth year and had specialised in applied courses in fluid mechanics and mathematical biology I really wanted to carry on studying and do a PhD. As I was really interested in maths and medicine, I applied to do a PhD on an interdisciplinary doctoral training programme in life sciences at Oxford."

"After 4 years of my PhD, I felt that I hadn't succeeded in doing something directly useful in the world of health and wasn't sure if I wanted to carry on in academic research. However, I had completed a short internship with an organisation called 'Giving What We Can' which researches and promotes cost-effective charities working on alleviating poverty in developing countries and had developed an interest in neglected tropical diseases, which a number of the charities recommended by Giving What We Can fight against."

"Neglected tropical diseases disproportionately affect poor people living in developing countries, and cause a massive amount of suffering. At around the same time I learned of an international consortium of research groups modelling neglected tropical diseases with the aim of helping eliminate 10 neglected tropical diseases by 2020. Postdoctoral research positions for four of the diseases were advertised by the University of Warwick and after applying I was lucky to be offered the position to model visceral leishmaniasis, the world's second most deadly parasitic disease after malaria. I started the job in May this year straight after finishing my PhD and have since travelled to India, where 80% of the world's cases of the disease are. I'm really enjoying it, and I'm very glad and grateful to have been inspired to study maths by BMS."