

## **Maths Department - Curriculum Statement**

### **Intent**

We aim to create the very best Mathematicians at Norlington School. We challenge students to think, act and speak like those working in the field would. We do this by quality first teaching which ensures students understand underlying Mathematical principles and can apply them in a variety of familiar and unfamiliar contexts. We teach content in its totality and constantly refer to the 'why' questions, encouraging students to make connections between ideas and topics.

Our curriculum at Norlington School goes far beyond what is taught in lessons, for whilst we want students to achieve the best examination results, we believe our curriculum goes beyond what is examinable. As a department we offer opportunities for individual and team competition through the UKMT in years 7, 8, 9, 10 and 12/13 and the Mayor of London 'Count on Us' in years 7, 8 and 9. Gifted pupils in take part in the Maths Feast in year 10. We provide access to Maths inspiration events for our highest achieving KS4 students. KS5 students also have access to problem solving courses and STEP courses provided through the AMSP and University College London.

Our Mathematics curriculum forms a backbone to our vision statement. Examples of how our curriculum supports this are by providing real stretch and challenge and opportunities for collaborative thinking, as well as space for independent thought and creative solutions. Students are explicitly taught strategies to solve problems and are encouraged by teacher modelling to be able to express themselves in Mathematical language. As a knowledge engaged curriculum we believe that knowledge underpins and enables the application of skills; both are entwined. As a department we define the powerful knowledge our students need and help them recall it by use of topic checklists (on cycle sheets) and in some cases knowledge organisers. Students have individual workbooks for recording model solutions and engage in regular diagnostic quizzes through MyMaths and Hegarty Maths.

Further rationale behind our curriculum design includes trying to make learning stick by having an interleaved curriculum. The six main areas of number, algebra, ratio, geometry, probability and statistics are taught across several cycles. Each time students revisit an area, they are exposed to more complex content, building on what they have already learnt. We ensure the level of challenge is high enough for the most able, with scaffold and support available for students who need it. As a result, by equipping students with the tools to be an outstanding mathematician we are also providing more opportunities to be successful at sixth form, university and beyond.

### **Implementation**

At Norlington School we follow the Pearson Edexcel scheme of work which has been adapted to fit the school 6-week cycle structure. Pupils in KS3 follow either Pi, Theta or Delta strands which initially is based upon SATs, an internal entry test, FFT and regular assessment data. This is monitored closely after each cycle to ensure pupils are studying the most suitable stream. By the end of year 9 all pupils cover the KS3 National Curriculum, just at a different pace. The most able are challenged to investigate and think deeply about a topic, whilst teachers of the less able dedicate more time to developing fluency through rigour and practice. At KS4 pupils follow either the Foundation or Higher tier with the aim of developing fluency, reasoning and excellent problem-solving skills.

Collaborative curriculum planning lies at the heart of what we do in the department. As a team we are constantly updating and reviewing our schemes of work and resources to ensure they are suitable for the increasing ability of our cohort. There is a key focus on embedding challenge, metacognition, memory techniques and literacy into our departmental curriculum. Alongside our schemes of work, we are developing knowledge organisers at KS3 and KS4. This is enabling us to define the core knowledge our students need to master.

In Mathematics we also implement our curriculum through using a variety of teaching approaches and tasks such as treasure hunts, relay tasks, competitive activities and problem solving as well as more traditional skills practice and skill checkers. Key skills and knowledge are constantly revisited, and key terminology is regularly embedded within lessons and in the written work that our students produce. Students are challenged to build on fundamental concepts by structured extension activities.

As a team we strive to deliver outstanding lessons through our wealth of pedagogical knowledge and teaching experience. Currently the team is comprised of HoD, KS3 2iC, KS5 2iC, two experienced teachers and 2 NQTs. All staff either have a maths or mathematical degree and or have recently completed a subject knowledge enhancement course. This is further reinforced through exam exposure, marking and moderation. Mathematical themes are explored in each department meeting to help refresh and improve teacher's ideas of what it means to both do and teach mathematics.

## **Impact**

At Norlington School, curriculum leaders think hard about how to maximise the impact of feedback on pupil progress while ensuring teacher workload is not too high. Checkpoint testing after a unit and end of topic testing after a cycle allow teachers to identify points that individual students need to improve and will intervene as required. Pupils are engaged in the assessment process through peer marking and identifying strengths and area for improvement in their own work. With the termly cumulative assessments, in addition to being formative, results are compared with students from across classes and thus give the teacher an idea of how well the student is performing in relation to a larger group; this enables us to broadly know if each individual student's progress matches, exceeds or is under where we'd like it to be. In turn, this lets us know if the quality of teaching the class is receiving is in line with our ethos of preparing students for success at university and beyond.

Across a series of lessons pupils confidently recall prior knowledge and demonstrate skills in applying learnt knowledge in another context at another time. Pupils are able to recognise and make connections between interleaved mathematical concepts and take pride in the completion of their work both in school and at home.

We are confident in the Mathematics department that our curriculum is having an impact thorough analysis of the school GCSE results. Maths APS and P8 is consistently one of the highest for all subjects in the school and the Maths residual continues to be positive indicating students achieve high grades in Maths compared to their other subjects. Maths continues to be the most popular option in KS5 with almost 20 students choosing it as one of their A-Level subjects in 2019/20. We also continue to have a healthy take up for A-Level Further Maths. Sixth form students like to give back to the department by helping to mentor and support students in KS3 and KS4. Departmental quality assurance shows students taking pride in their work in Mathematics and enjoying the level of challenge and variety of learning activities.