The Numeracy Pathway at Northampton School for Girls

Our goal is for every student to leave Northampton School for Girls numerically fluent. Numeracy skills are vital for success both within and beyond the classroom. All teachers recognise the importance of raising the standard of numeracy skills and are responsible for teaching numeracy across the curriculum. Our Numeracy Pathway has been tailored to ensure all students have the support and challenge required to enable them to have a rich network of mathematical knowledge and the confidence to problem solve. The impact will be students of all abilities will achieve academic success across the curriculum, as well as in their personal and professional lives in the future.

Understanding Numeracy

As well as being able to manipulate numbers by adding, subtracting, multiplying and dividing, numeracy encompasses the ability to understand and work with numbers effectively in various contexts. It includes skills such as mental arithmetic, estimation, problem-solving, and financial literacy. Developing numeracy skills is essential for tasks such as budgeting, interpreting data, and making informed decisions. To support staff, students and parents we have published our NSG Calculation Guidance which models each skill and how it will be taught in lessons. It also highlights the shared language that is used across the curriculum in relation to numeracy. This is to minimise confusion and misconceptions surrounding key mathematical skills in different subjects (ASE, 2016).

Numeracy skills, much like being able to read and write or having digital literacy, are indispensable in the modern world. Whether in managing personal finances, pursuing careers in STEM fields, or engaging in critical thinking, numeracy forms the foundation for success. By fostering numeracy skills, we will empower our students to navigate the complexities of today's society with confidence.

Promoting a positive attitude towards numeracy across our school community

We aim to encourage confidence and an eagerness to engage with numerical challenges among all of our students. By fostering a culture of numeracy across the school community through numeracy-themed events, competitions, and awareness campaigns students will feel confident to overcome any barriers they might have when it comes to numeracy and maths, approaching numeracy with interest, competence and a ‘can do’ attitude.

Parental involvement is actively encouraged through resources and workshops aimed at supporting a positive attitude to numeracy at home. Please see our ‘Guide to supporting numeracy at home’.

Our Tiered Approach to Supporting Numeracy

At NSG, we employ a multifaceted approach to supporting numeracy, tailored to meet the diverse needs of all of our students. We do this through our tiered approach, as recommended by the Education Endowment Foundation. Quality first teaching across all areas of the curriculum will aid in reducing the need for additional support but we recognise that some students will require additional structured, targeted support to make the required progress. We ensure that students receive the appropriate level of support by accurately assessing their numeracy levels and assigning our Wave 1, 2 or 3 provision accordingly.

Assessing numeracy levels and early identification at Key Transition Points

We identify students who require additional support through assessments, including baseline assessments and standardised tests. These are carried out at least twice each year and are tracked by Heads of Faculty and the Numeracy Lead. We are committed to ensuring that we provide our students with support at key transition points as research shows students are more likely to experience gaps in numeracy (Evangelou, M et al, 2008).

We recognise that there are three key transition points for our students and we use the assessments outlined below to ensure Early Intervention can be provided (EEF Improving Mathematics in Key Stage 2 and 3*).*

KS2 into KS3: In Year 7 students sit GL assessments and, when used as a baseline tool, these can significantly contribute to numeracy intervention by providing valuable insights into students' mathematical abilities. Teachers use this data to identify strengths and weaknesses, set goals, and measure progress in class. GL test data also guides teaching strategies and resources, enabling tailored interventions that cater to individual needs. This works alongside our SEND mapping provision and we are committed to ensuring early identification if learning needs are highlighted.

KS3 into KS4: Across all subjects, students' success through assessments are tracked throughout the year. At the beginning of KS4, the Head of Academic Standards, Head of Maths and Numeracy Lead will use this data, along with student assessment GL data, to identify students who are in need of further support.

KS4 into KS5: Upon admission to the sixth form, students are given tailored advice and support with reference to career goals and their chosen courses. Where a student has chosen a subject that requires high numeracy ability, such as Maths and Science, teachers and Heads of Faculty will advise and support on a case-by-case basis. Students in the sixth form will receive the same experience on the NSG Numeracy Pathway and will receive subject specific guidance from teachers.

The NSG Numeracy Pathway

Attainment in Maths	Banding	Actions
Above Expected	Referred to High Achieving Scholars Programme	• Students are provided with learning opportunities in class to be stretched and challenged thus further improving their numerical abilities. • High performing maths students will be given the opportunity to study for the Level 2 Certificate in Further Mathematics • Students are targeted by their Head of Academic Standards to enter Scholars and other extra-curricular opportunities for further challenge. • The Head of Maths will select students to compete in National Competitions such as the UK Maths Challenge.
Expected	Wave 1	Quality First Teaching • Numeracy is embedded across all subjects in the curriculum • Teachers receive dedicated training and support to integrate numeracy skills into their lessons effectively from our highly skilled 'numeracy across the curriculum' lead • Teachers, Students and Parents have access to the NSG Calculation Guidance which outlines our shared language and use of numerical methods • Consistent methodologies ensure that numeracy is reinforced across the curriculum using the NSG Calculation Guidance • Teachers employ expert modelling of techniques and methods using the NSG Calculation Guidance • Numerical techniques are revisited regularly, in lesson and home learning, to support quick recall and the ability to apply numeracy skills to an ever widening range of contexts
-1 below expected	Wave 2	• Targeted assistance within lessons • The regular assessments outlined above will identify students falling below the expected level for numeracy by 1 level • Maths teachers will employ expert modelling of techniques and methods, providing scaffolding for numerical tasks as necessary to meet the needs of target students • Through the maths setting process, students with low numeracy levels will be placed in a smaller maths group allowing a high frequency of one to one teacher interaction and feedback • Targeted areas of support and suggested strategies will be provided for all teaching staff from all curriculum areas through the use of the Provision Map and the NSG Calculation Guidance • Teachers across the curriculum will prioritise these students for feedback on numerical tasks • Technology-enhanced learning tools, such as educational software and online resources, will be used to supplement classroom instruction
-2 below expected	Wave 3	• Targeted assistance in small tuition groups • Students will work on key numerical skills, outlined above in 'Understanding Numeracy' in small intervention groups for a period of time • Students will learn and practise the key numeracy skills that will allow them to access their learning in line with their peers • Platforms like Renaissance Star Maths facilitate assessment, progress monitoring, and personalised learning experiences • Working alongside the SEND provision, students may receive additional classroom support from a learning support assistant if they have a special educational need

A student's progress through the pathway will be tracked and monitored by Head of Maths, Head of Academic Standards and Numeracy Lead.
Example: *Student A is predicted an 8 by the end of year 11. In year 10 they are currently at a 7. This means they are on track to hit that predicted grade. They receive Wave 1 support.* *Student B is currently at a 6, and thus is a grade behind where they should be meaning they will receive Wave 2 intervention*

Further Reading

DfE Literacy and numeracy catch up strategies 2018

https://fft.org.uk/

Evangelou, M., Taggart, B., Sylva, K., Melhuish, E., Sammons, P., Siraj-Blatchford, I. (2008) What makes a successful transition from primary to secondary school? Effective Pre-school, Primary and Secondary Education 3-14 Project (EPPSE 3-14) London England: Department for Children, Schools & Families

Peter Henderson et al. (2017). *EEF Improving Mathematics in Key Stage 2 and 3*. [Online]. EEF. Last Updated: 2022. Available at: https://educationendowmentfoundation.org.uk/education-evidence/guidance-reports/maths-ks-2-3 [Accessed 16 September 2024].

Richard Boohan, Richard Needham. (2016). The Language of Mathematics in Science. [Online]. ASE. Last Updated: 2016. Available at: https://www.ase.org.uk/mathsinscience [Accessed 17 September 2024].