MATHEMATICS

Curriculum Vision Statement

"We will always have STEM with us. Some things will drop out of the public eye and go away, but there will always be science, engineering, and technology. And there will always, always be mathematics".

Katherine Johnson

NORTHAMPTON SCHOOL FOR GIRLS

Vision

At Northampton School for Girls (NSG) we believe Mathematics is a universal language that can be used to explain the world around us. The study of Mathematics will enable our students to make sense of everyday situations, to forge links between topics and establish connections in a real-life context. Mathematics fosters curiosity, equipping students with various strategies to tackle problems, and it empowers students with the resilience to take risks. Mathematics is logical thinking, reasoning, intuition, analysis, construction, generalisation and beauty. It provides our students with the knowledge and cultural capital they will need to succeed in life.

The six areas of mathematics taught are:

- Number
- Algebra
- Ratio, proportion and rates of change
- Geometry and measures
- Probability
- Statistics

We teach students to become actively involved with the learning process in order to enable them to make the best progress possible. They are taught strategies to reflect on their work, addressing misconceptions and making improvements to their understanding. We use strategies such as questioning, retrieval practice, spaced learning, metacognition and in class practise to engage and develop our students as mathematicians. The career possibilities with Mathematics are endless. Some examples where you can use your Mathematics qualification are with CGI Film Design, App Development, designing spacecraft, Motorsport Engineering, distribution networks, researching diseases and rates of spread. For more information on all the amazing opportunities with Mathematics please look at this website.

https://www.mathscareers.org.uk/



Implementation

Measuring data

PROGRAMME OF STUDY FOR YEAR 7	PROGRAMME OF STUDY FOR YEAR 8
Number and the number system	Number and the number system
Counting and comparing	Calculating
Calculating	Visualising and constructing
Visualising and constructing	Understanding risk
 Investigating properties of shapes 	Algebraic proficiency
Algebraic proficiency	• Exploring fractions, decimals and percentages
• Exploring fractions, decimals and percentages	Proportional reasoning
Proportional reasoning	Patterns in algebra
Measuring space	Investigating angles
Patterns in algebra	Calculating fractions decimals and percentages
Investigating angles	 Solving equations and inequalities
Calculating fractions, decimals and percentages	Calculating space
 Solving equations and inequalities 	Using algebra to visualise
Calculating space	Further probability
 Checking, approximating and estimating 	Presentation of data
Mathematical movement	Measuring data
Presentation of data	

For more information on the GCSE content please go to the following website. https://www.aqa.org.uk/subjects/mathematics/gcse/mathematics-8300/subject-content



Assessment

Students in Year 7 and 8 are assessed termly on both knowledge, understanding and their application of skills, through a range of assessments. Throughout KS4, students are assessed after every topic. Assessments are used to address common misconceptions, provide bespoke feedback and to track progress throughout each Key Stage.

Independent Learning

Home Learning is set using Hegarty Mathematics each week. Home Learning tasks are based on the units covered in the previous half term, giving the students further opportunity to develop their understanding of the concepts covered in those units as well as revising material already learned.