Mathematics

The Staffordshire University Academy mathematics department aims to ensure every child is able to understand and solve a range of mathematical problems they may be faced with in an ever-evolving, modern, world. We aim to change the widely held view that mathematics is boring, irrelevant and hard to exciting, relevant and easy.

Key Stage 3

Lessons in Year 7 to 9 involve the development of fluency in the fundamentals of mathematics, with a focus on a deeper understanding of topics. Lessons are taught using a mastery approach to learning, with many skills introduced by the use of concrete apparatus to aid fluency in answering questions. Skills are further developed to ensure students can reason mathematically and solve problems by applying their mathematical knowledge.

Term	Topics covered
Autumn 1	Investigating number systems, Pattern sniffing, Solving calculation problems
Autumn 2	Solving calculation problems (cont.), Generalising arithmetic, Exploring shape
Spring 1	Exploring shape (cont.), Reasoning with measures, Discovering equivalence
Spring 2	Discovering equivalence (cont.), Reasoning with fractions, Solving problems with numbers
Summer 1	Solving problems with numbers (cont.), Investigating statistics
Summer2	Visualising shape, Proportional reasoning, Describing position, Measuring and estimating

To be successful students need to develop their understanding and knowledge of the mathematical and numerical concepts outlined. To achieve this students need to be open to, and accepting of, new and sometimes unfamiliar concepts.

Key Stage 4

Students will study the Pearson GCSE (9-1) Mathematics course. GCSE mathematics continues to build on topics students have already learned during their time with us, with the topics covered continuing to be based around number, ratio & proportion, algebra, geometry and statistics. There is a particular emphasis on developing lifelong skills in numeracy, the ability to communicate mathematically, and problem solving in new contexts.

Students will have covered the scheme of work by the end of Year 10, enabling us to spend Year 11 targeting key areas of understanding to ensure that all students achieve the best results possible. There will be a formal, three paper, PPE (mock) at the end of Year 10 along with a further two full PPEs during Year 11 in order to effectively track and monitor their progress on key topics.

The final qualification is 100% examination based with two possible tiers of entry: Higher tier, grades 9 – 4, or Foundation tier, grades 5 – 1. Each consist of three 1hr 30min papers, one non-calculator and two calculator.

The summer 2020 GCSE examination dates are 19 May, 4 June and 8 June.

Key Stage 5

Post 16 students have the opportunity to study the Pearson A-Level mathematics course. The modules contain a wide array of topics including, but not restricted to, the following:

Algebra and Functions
Coordinate Geometry
Differentiation
Integration
Sequences and Series
Trigonometry
Exponentials and Logarithms
Forces and Vectors
Probability Distributions and Hypothesis Testing

Students will study Pure 1 and Statistics & Mechanics 1 in Year 12, then Pure 2 and Statistics & Mechanics 2 in Year 13. The final qualification is 100% examination based and consists of three 2hr papers, two Pure and one Statistics & Mechanics. Calculators are allowed in both papers.

The summer 2020 GCE examination dates are 3 June, 10 June and 12 June.

Members of the department

Director of Teaching and Learning (Mathematics)
Mrs Teresa Smith – Lead Practitioner
Mr Brijmohan Azad – Teacher of maths
Mr Ian Kirk – Head of Year 11 / Teacher of maths
Mrs Joy Rollins – Teacher of maths / Intervention teacher
Mr Chris Shepherd – Head of Year 7 / Teacher of maths
Mr Scott Williams – Director of Inclusion / Teacher of maths
Mr Martin Disley – Unqualified trainee teacher of maths