

Introduction:

In Year 9 a number of IGCSE topics are introduced to familiarise the students with the demands and expectations of the Cambridge IGCSE course, which is designed for all pupils to gain;

- The development of their mathematical knowledge
- Confidence, by developing a feel for numbers, patterns and relationships
- An ability to consider and solve problems and present and interpret results
- Skills in communication and reasoning using mathematical concepts
- A solid foundation for further study

Within the department our aim is to give all pupils the opportunity to develop their potential to the full, and to achieve this our students will be taught in mixed attainment classes and encouraged to work at a pace which is appropriate for them. The personalised SPARX online homework system further supports pupils in learning at an appropriately challenging level for them.

We put a high emphasis on effort, participation and questioning "why?". Mistakes are embraced and encouraged as part of the learning process, and we strive to cultivate a safe and engaging environment for all students to reach their potential. The Mathematics team has carefully planned differentiated resources to ensure that every child has the same opportunities to make progress, and that appropriate support and challenge is available in every lesson.

Content:

In Year 9 students review and build on the content introduced in the Year 7 and 8 curriculum and continue to work on developing mathematical skills in all four of the key areas; Number, Geometry, Algebra, Probability and Statistics. New more challenging IGCSE topics are also introduced, and students start to familiarise themselves with how content is examined at this level.

Number

Number Properties, Order of Operations and Rounding Directed Number Fractions, Decimals and Percentages Approximations, Estimation & Calculator Use Law of Indices with Number Standard Form Ratio, Proportion & Map Scales Financial Maths (Simple & Compound Interest) Time and Rate

Geometry

Angle Properties Angles in Polygons Area and Perimeter Circles, Sectors and Arcs Pythagoras' Theorem Trigonometry & 3D Trigonometry Bearings Angles of Elevation & Depression Scale Drawing Transformations

Algebra

Simplifying Expressions and Substitution Expanding Brackets and Factorising Laws of Indices with Algebra Forming and Solving Linear Equations Forming and Solving Simultaneous Linear Equations Rearranging Formulae Straight Line Graphs

Probability and Statistics

Types of Data Frequency Tables Pictograms, Bar Charts, Pie Charts Averages & Spread Probability, Relative Frequency, Independent and Mutually Exclusive Events Probability with Tree Diagrams

Skills:

Pupils are examined on AO1 and AO2 skills in the Mathematics IGCSE. AO1 marks are rewarded for demonstrating knowledge and understanding of mathematical techniques, AO2 marks are rewarded for 2 analysing, interpreting and communicating their knowledge mathematically

A full breakdown of all the skills taught within the IGCSE syllabus can be found below

https://www.cambridgeinternational.org/Images/663105-2025-2027-syllabus.pdf

Homework:

Homework is set on a weekly basis on the Sparx platform which will consist of 60% of the current topic being studied in class, and 40% of consolidation of previous topics and topics which the individual

student has underperformed on in past homework. Sparx homework is personalised to challenge each child at the appropriate level. We encourage pupils to complete their homework independently so that their performance can be used for them to self assess their own progress on a topic and hence inform their revision requirements before a formal test. If a student finds they are unable to attempt a question they should watch the video attached to the question and try another question which will be generated for them. Students are expected to write down all of their working during homework, and they will need to write down the bookwork code for each question, failure to do so will result in failure of a bookwork check.

Assessment:

Pupils receive five, forty minute, periods a week for Mathematics. Formative assessment is ongoing within the classroom every lesson, and is also informed by homework tasks.

Pupils will be formally tested once per term. All assessments will test material cumulatively to help students to build their knowledge and memory of the content in line with findings from recent educational research.

Average time spent each homework:

Pupils are expected to spend approximately 1 hour per week minimum to complete the compulsory Sparx homework tasks. Optional XP Boost and Target tasks are available for further practice and extension respectively.

Resources and Materials:

In addition to the online Sparx platform for homework, lessons students will have access to the full IGCSE textbook published by Oxford University Press, specifically for the Cambridge IGCSE syllabus, via the online Kerboodle platform.

Revision material, extra exercises and links for all topics are made available via Google Classroom throughout the year.

In lessons, resources include use of the course textbook, Google Classroom, printed handouts and a wealth of activities and tasks created by the Mathematics team. Extension tasks, along with the departmental Monthly Challenges, are always available and can be collected by the pupils to use for enrichment or revision purposes.