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| **A Level Mathematics** | |
| **Exam Board: Edexcel** | **Qualification Code:  9MA0** |
| **Subject overview:** | |
| **Combines well with** - Combines well with: Biology, Chemistry, Physics, Geography, Psychology, Business. | |
| Mathematics is historically a highly valued subject, studied by many famous scientists, philosophers and thinkers, from many different cultures and throughout time; so, to study it is to join a long list of intellectuals. It is an exciting and interesting subject. Mathematics is a highly valued tool for many disciplines such as science, economics, engineering, computing, and finance. The list is endless as Mathematics has become an integral part of almost every job, especially with the growth in the use of statistics to analyse data over the last century. Mathematics provides a general education in logical thought and problem solving, skills which are highly marketable. All modules are compulsory. Two thirds of the course will be pure maths, with mechanics and statistics having equal weighting in the final third. The Pure units build on your knowledge of graphs, trigonometry, and algebra. You will also study calculus which is a very powerful mathematical tool. In Statistics you will learn to interpret large data sets, consider.  statistical modelling and hypothesis testing and look at probability. All papers will contain a mix of question styles from short, single mark questions to multi-step problems. | |
| **Course outline including assessment method:** | |
| These qualifications are linear. Students will sit all the A-level examinations at the end of their A-level course.  Students will sit 3 x 2-hour examinations at the end of the two years course.  There is no coursework for A-level Mathematics which is 100% examinations.  Paper 1 and 2 are based on the Pure aspects of Mathematics and Paper 3 is based on Statistics and Mechanics. All 3 papers are equally weighted 100 marks each. | |
| **Pure Content Overview** | **Statistics & Mechanics Content Overview** |
| * Topic 1 – Proof * Topic 2 – Algebra and functions * Topic 3 – Coordinate geometry in the (x, y) plane * Topic 4 – Sequences and series * Topic 5 – Trigonometry * Topic 6 – Exponentials and logarithms * Topic 7 – Differentiation * Topic 8 – Integration * Topic 9 – Numerical methods * Topic 10 – Vectors | Section A: Statistics   * Topic 1 – Statistical sampling * Topic 2 – Data presentation and interpretation * Topic 3 – Probability * Topic 4 – Statistical distributions * Topic 5 – Statistical hypothesis testing   Section B: Mechanics   * Topic 6 – Quantities and units in mechanics * Topic 7 – Kinematics * Topic 8 – Forces and Newton’s laws * Topic 9 – Moments |
| **Resources and Facilities at TKAW:** | **Careers and Progression:** |
| The Mathematics Department at The Khalsa Academy can provide the textbooks and the purchase of a graphical calculator (a course requirement at TKAW) through us. | Many students who study the A-level route consider a career in the medical sciences, engineering, computer sciences, banking, accounting and finance. Other routes could be education. |
| **Entry Requirements:** | |
| All students must have a good grade 6 or above in the GCSE mathematics. Due to the high level of mathematical requirements for this qualification, all students must have at least a grade 7 in GCSE Mathematics. Due to the written communication requirement of this course, all students must have at least a grade 6 in GCSE English Language. | |
| Who to contact: | |
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