
MATHEMATICS A*(HEAD OF DEPARTMENT – Mr Chris Blood)*

Why Study Mathematics A?

Mathematics is an integral part of a general education. It is important in making informed decisions on everyday issues such as:

- choosing between loan repayment schedules or insurance plans
- interpreting information in the media
- reading maps or house plans
- estimating quantities of materials

In Mathematics A, the skills needed to make decisions that affect students' everyday lives are provided. These skills are also called on in other subjects and provide a good general background for many areas of tertiary study.

The study of Mathematics A will emphasise the development of positive attitudes towards a student's involvement in mathematics. An approach involving problem solving and applications, working systematically and logically, and communicating with and about mathematics encourage this development.

What do students study?

Mathematics A consists of core and elective topics.

Core topics are:

- Managing money I and II – bank interest, credit cards, loans, taxation, budgeting, investments
- Elements of applied geometry – simple trigonometry, area and volume, latitude, longitude and time zones
- Linking two and three dimensions-scale drawings and plans, estimation of quantities and costings
- Data collection and presentation-graphical and tabular presentations, simple methods for describing and summarising data
- Maps and compasses involving either navigation or land measurement-practical use of a variety of maps, compass bearings, orienteering, navigation, site plans
- Exploring and understanding data-summary statistics, simple probability, interpretation of reports in the media.

The elective topic chosen by the school is "Introduction to models for data."

What do students do?

Students will participate in a wide range of activities such as:

- investigating the efficient use of credit cards or the cost and upkeep of a swimming pool
- designing a large car park or an optimum sprinkler system for a home garden
- examining how statistics are used in the media, for example, in advertising or in weather reports
- following an orienteering path and reading maps.

How are students assessed?

Assessment will involve questions that determine competence in three main categories – Knowledge and Procedures, Mathematical Modelling and Problem Solving and Communication and Justification. Each category is of equal importance. Questions will be given over four key contexts. These are the contexts of Application (life related), Technology (all Mathematical tools including graphic calculations and computers), Initiative (the opportunity to be creative or show insight) and Complexity (from simple single step tasks to complex multi-step tasks).

Students are graded in each objective in each of the four semesters. In each semester there will be a class test, an alternative assessment task (report, research, investigation etc.), a modelling and problem solving task and an end of semester examination, though the class test and problem solving tasks are merged, in semester four of Year 12.

- Class tests will use two or more sections of Knowledge and Procedures and about three Modelling and Problem Solving items. They may occur about mid-semester.
- Alternative Assessment tasks will assess some Knowledge and Procedures and Modelling and Problem Solving in the context of the items. They may occur at any convenient time in the semester.
- (Modelling and) Problem Solving tasks will not directly assess Knowledge and Procedures and will use about three items. They may occur in the mid-term stage of the second term in the semester.
- End of semester assessment tasks will use three sections of Knowledge and Procedures and about three Modelling and Problem Solving items. These will take place in the formal examination period at the end of each semester.

The College provides an assessment calendar for students to indicate the exact time of assessment tasks in each semester. Revision is provided to assist with content and analysis.

Grading advice is available in the work programme, or from your son's teacher.

How can parents help?

Parents can help by offering encouragement, support and providing a suitable learning environment.

As the topics are predominantly life-related, parents can encourage students to discuss their work. Such discussion will assist the understanding of the topic and enables the student to draw on the personal experiences of family members.

The student can be expected to acquire a considerable degree of proficiency in a variety of skills, such as estimation, use of technology, application of formulae, table reading and arithmetic calculation through the study of Mathematics A. Like any skills, these need to be practised to be mastered. Students should be encouraged to practise and so maintain these skills.