



# Core Mathematics

## Introduction

“Core Mathematics” is a Level 3 AS-equivalent in which students explore mathematical concepts through real life application. It is an opportunity to allow students with a grade 5 or above in their mathematics GCSE to continue developing skills that are complementary to other A Level courses such as:

- Business
- Psychology
- Sociology
- Criminology
- Geography

It is a recent course that was piloted in 2014 to be able to give more students an opportunity to continue their mathematics education beyond GCSE.

We have asked students for their comments on the course so far, some of which are below:

## Year 12

Students will begin to explore mathematical concepts that they are aware of from their GCSE content within real life contexts. Lessons involve rich discussion around these contexts, such as income tax and student loans, and lessons are often directed by student questions as the subject is ideally taught through inquiry and research. We as teachers facilitate this as student interest is a massive factor of engagement and retention.

We also encourage students to research answers to their own questions, but also to question what they find. It is an important life skill to be able to look at data you are presented (through the media and online outlets) and decide whether this is trustworthy or the conclusions drawn from this are fair. In the course, throughout each topic, we interleave opportunities for students to explore data, look for trends, and relate them to the global context at the time.

## Year 13

Students continue to build on the skills from year 12, with a view to them being able to analyse or criticise given data independently. They also explore the option module in year 13 - “Critical Path and Risk Analysis” - which is used throughout a series of professions and businesses to manage tasks and make decisions based on financial projections. We are



currently looking into opportunities to facilitate some external involvement with this aspect of the course so that students can discuss first hand with visitors who use this within their business and again enrich their experience of mathematics in global context.

In April of year 13, the preliminary material for the examination is released, which we will use in lessons to consolidate all ideas in the context of potential examination questions in order to prepare the students for their formal assessment. This is a collaborative approach in which teachers also network with other teachers on the course to come up with a variety of topics to explore.

### **What are the HW Expectations?**

From week 4 in term 1 HW will be set on a fortnightly basis. We would expect 2 hours to be spent on this homework and this may come in a variety of formats, for example, collaborating in a team to work on a presentation, doing primary or secondary research around a particular concept or mathematical tasks such as a worksheet.

### **How will I be assessed?**

Formal Assessment. The formal assessment will be sat in the summer examination season of year 13 and consists of 2 equally weighted papers:

Paper 1: 90 minutes, 60 marks

- 3.1 - Analysis of Data
- 3.2 - Maths for Personal Finance
- 3.3 - Estimation

Paper 2 (pathway B): 90 minutes, 60 marks

- 3.4 - Critical Analysis of Given Data and Models
- 3.8 - Critical Path and Risk Analysis
- 3.9 - Expectation
- 3.10 - Cost Benefit Analysis

Both papers have a “preliminary release material” linked to them that is released at the beginning of April. They will also be provided this in the examination, and some examination questions on both papers will relate to the preliminary material in some way. We will use this in class to explore potential topics and discussions around the information provided.

### **Informal assessments**

Termly milestones on topics that have been taught so far will assess a variety of content from the beginning of term. Nearing the PPE window we will also give students “preliminary material” that will relate to their given papers and explore this with them in class in year 12 so that, when their formal preliminary material is released in year 13 they will be familiar with how this is explored.



## What equipment/books do I need to be successful?

### Compulsory:

- A [scientific calculator](#). We recommend this most up to date model, as it performs more functions and is easier to navigate.
- All other stationery listed as essential equipment in the Hundred of Hoo parent handbook.

### Recommended:

- A laptop/chromebook device. A significant part of this course is designed around research, data analysis, spreadsheet skills and also collaborative working. Therefore it needs to be a device that has access to and easy navigation of Google Sheets, which is why we would not recommend a tablet.

We will endeavour to gain access to school facilities where possible, however IT access can be limited at certain times.

### Other useful links:

- [AQA specification at a glance](#)
- [AQA full specification](#)