

COMPUTING GCSE

About the Course

The course provides students with a real, in-depth understanding of how computer technology works. Students will no doubt be familiar with the use of computers and other related technology from their ICT lessons and elsewhere. However, the course will give them an insight into what goes on 'behind the scenes', including computer programming, which many learners find absorbing.

This demanding course will typically require the application of logical and mathematical skills.

Fundamentals of computer systems

This topic introduces computer systems and provides a foundation for the remaining topics in this unit. Students will learn that the term 'Computer System' does not just mean the desktop at home but can include any system controlled by or including a processor.

Computing hardware

Students will be able to define the term hardware and have an understanding of many different types and how they operate.

Software

Students will be able to define the term software and have an understanding of the types and how they interact with the user and hardware.

Representation of data in computer systems

Students will understand how data is stored on a computer system and the different ways they can be represented.

Databases

Students will be able to understand, operate and create databases.

Computer communications and networking

Students will learn about the set-up and structure of networks and the Internet.

Programming

Students will gain an understanding of how to programme in different languages.

On this course, you will study three units:

Unit A451	Computer systems and programming
Written Paper 1 hour 30 mins 80 marks 40% of the qualification	You will learn how computers work and how they communicate with each other. You'll learn about the principles on which a processor operates and its relationship to memory and speed. You will find out how all computer processing is based on binary logic and how different things like sound and video can be stored in a computer. You will begin to understand some of the 'magic' that lies behind the internet – how an e-mail gets from one place to another and what those 'funny' 123.222.0.0 numbers have to do with it. You will also be learning some of the key techniques behind programming: how to express ideas in sequences of steps, how to approach solving problems and what the main tricks are to get your software code doing what you want.

Unit A452	Computer systems and programming
Controlled Assessment An investigative task Approx 20 hours 45 marks 30% of the qualification	Your research will have to be planned and be technically oriented - involving practical activities and investigations. You will have to write a report, showing what you've done and what you have discovered along the way.

Unit A453	Computer systems and programming
Controlled Assessment Approx 20 hours 45 marks 30% of the qualification	The tasks are progressively harder. Don't worry if you have never programmed before – we don't expect you to have. The whole point of these projects is to build up your confidence and skills so that, by the end of the course, you may be keen to progress to the professional programming carried out in A-level computer science courses. This unit will introduce you to the practical programming skills used by application developers, games programmers and web developers.

What skills will you need and learn?

In order to be successful in the course students will need to be able to solve problems independently. To help them with this they will develop skills in designing algorithms and computer programming. Students will also be able to evaluate the effectiveness and success of their solutions, as well as other people's, and the impact computer systems can have on society.

Exam Board OCR J275

Enquiries to Mr Mann

pmann@bristolcathedral.org.uk

