Computing

Year 9, 10 and 11

GCSE Computer Science – OCR

The study of Computer Science is undertaken in years 10 and 11, building on the foundations built in year 9. The assessment takes place in the normal exam window at the end of year 11.

The students in year 10 and 11 follow the GCSE OCR Computer Science Syllabus. This is a 9 to 1 course and the course code is J276.

We undertake work so that at the end of year 11 students will

- Understand and apply the fundamental principles and concepts of Computer Science, including abstraction, decomposition, logic, algorithms, and data representation
- Analyse problems in computational terms through practical experience of solving such problems, including designing, writing and debugging programs
- Think creatively, innovatively, analytically, logically and critically
- Understand the components that make up digital systems, and how they communicate with one another and with other systems
- Understand the impacts of digital technology to the individual and to wider society
- Apply mathematical skills relevant to Computer Science

The subject has 3 main elements, two are examined by formal written papers both being 40% of the overall grade each. The papers each have 80 marks and are 1 and a half hours long.

The first paper is on Computer Systems and is traditional computing theory, the second paper is on Computational thinking, algorithms and programming and tests the pupils ability to problem solve using computers as a tool.

The third element is a 20 hour controlled assessment, this is sat in the first few months of year 11. This counts for the final 20% of the overall exam grade.

Post 16

GCE Computer Science – OCR

At post 16 students study the OCR Computer Science course (course code H446), it is a natural progression for those who have studies GCSE Computing yet is designed in a way to make it accessible to those who have not.

The course is a two year course with all examinations being sat at the end of the second year of study.

We undertake work so that at the end of year 13 the students will have

- An understanding of and ability to apply the fundamental principles and concepts of computer science including; abstraction, decomposition, logic, algorithms and data representation
- The ability to analyse problems in computational terms through practical experience of solving such problems including writing programs to do so
- The capacity for thinking creatively, innovatively, analytically, logically and critically
- The capacity to see relationships between different aspects of computer science

- Mathematical skills
- The ability to articulate the individual (moral), social (ethical), legal and cultural opportunities and risks of digital technology

The subject has three main elements, two are examined by formal written exam and the third is a free choice project.

Paper one is on Computer Systems and tests traditional computing theory, this is worth 40% of the overall grade, it is 2 hours 30 min and is a hand written paper.

Paper two is on Algorithms and Programming and tests the pupil's ability to program, this is also worth 40% of the overall grade, it is 2 hours 30 min and is a hand written paper.

The free choice project is 20 % of the total marks, many pupils find this aspect very enjoyable.

Programming Languages

At both Key stages we mainly program with Visual Basic in Visual Studio a free and very powerful programming language that is used to produce very professional looking programs to work on Windows PCs.

In order to support the syllabus we will also teach several other languages to a lesser extent, these include SQL, Python, Haskill, Prolog, HTML and Bash Scripting.

VLE – The Virtual Learning Environment

Both courses are fully supported with an in-depth VLE containing worksheets, all course notes, videos, examples and past exam papers.

Staff

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Links

GCSE Computer Science - http://www.ocr.org.uk/qualifications/gcse-computer-science-j276-from-2016/

GCE Computer Science - http://www.ocr.org.uk/qualifications/as-a-level-gce-computer-science-h046-h446-from-2015/