

SUMMER WORK COMPUTER SCIENCE

Head Of Department
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Exam Board AQA

Specification:
7517

COURSE DETAILS

EXAMINATION

The course is examined at the end of Year 13 by 2 exams (1 written 1 on screen). In addition, there is a non-examined assessment (NEA) worth 20% of the final grade completed during the course.

Unit 1:

This unit focuses on programming using standard programming concepts such as definite and indefinite iteration with conditions, use of arithmetic, relational and Boolean operations. Students will also program using an object-oriented method. Students will also develop their knowledge of the theoretical side of computer science ranging from fundamentals of programming to the theory of computation (abstraction, decomposition, composition and automation). This unit will also include the fundamentals of algorithms and the skills learnt whilst studying the systematic approach to problem solving.

Unit 2:

This unit focuses on fundamentals of data representation such as natural, rational, irrational, real and ordinal numbers plus different number systems used by computers to represent data. Networking and the Internet. Fundamentals of computer systems includes hardware, software and programming languages as well as computer organization and architecture and consequences of Computing in society. This unit also includes fundamentals of databases, big data and the fundamentals of functional programming.

Unit 3: Non-Exam Assessment: The computing practical project

The non-exam assessment assesses a student's ability to use the knowledge and skills gained through the course to solve or investigate a practical problem. Students will be expected to follow a systematic approach to problem solving. When creating the project, a student will analyse, design, create and test a program to solve a problem, this could be a website with dynamic content and a database back-end, a mobile app, an application for artificial intelligence, a computer game or something completely different.

In preparation for starting 'A' level computing in Year 12, it is important that you have a good understanding of the concepts taught at GCSE.

We are doing the AQA 'A' Level 7517- [AQA webpage with spec is here](#)

We also need you to be at a reasonable standard of Python programming, as this is the language that we will use for most of the A level. We feel that it is more beneficial for you to develop a better understanding of 1 language, rather than having a shallow understanding of 2 or 3.

Please review the GCSE materials via BBC Bitesize here:

[Computer Systems](#)

[Fundamentals of networks](#)

[Fundamentals of Cyber-security](#)

[Fundamentals of Data representation](#)

[Fundamentals of Algorithms](#)

[Programming Constructs](#)

[Programming techniques](#)

Code as much as you can of this [in Python using Trinket](#) (without AI help) as this will let us see the level of your ability and give you a chance to refresh your memory. Copy the code and paste it into a word document with a screenshot of what it is doing and share the link to your solution as well. Email the word document and link to jsumsion1@gordons.school before the start of year12.