



ICT - Computer Studies and Computer Science

Homework

Homework is set for all groups including GCSE once every two weeks, students are given a booklet with the homework for the term in them to take home. The students in KS3 are expected to complete the Booklet throughout the term and handed back on the last week of the half term. The Computer suite is open at least two lunches per week if students need help or just access to a PC.

At GCSE the students are given the Booklet but are expected to complete them fortnightly. The work must be handwritten and submitted in on the Friday of Week B.

Key Stage 3

All students study Computer Studies at Key Stage 3. Students are assessed through both written and practical assessments as well as peer and self-assessment. Students will be reminded each year of the safety issues around using the internet, Cyberbullying, Sexting and their E-Footprint.

Year 7

Students will follow a programme of study that will investigate ways to use technology safely, modelling to analyse and interrogate data using a variety of functions and formulas. They will use Scratch and other software to develop coding for games and introduce the concept of flow charts. Students will combine a range of applications to provide a solution to a chosen problem demonstrating how work can be developed. Students will also start to learn how a computer works, looking at binary and machine code and very basic Logic Gates

Year 8

Students will continue to develop programming skills using a variety of languages. Programming languages will be used to solve simple problems. Students will use a variety of software to plan, create, test and evaluate a solution to a defined problem. They will what is inside a computer and how it works. Students will be taught the purpose of binary and hexadecimal numbers, how they work and be able to convert between binary, hexadecimal and decimal.

Students will take Options during Year 8 that allows them to choose to study Computer Science in Year 9.

Year 9

Students will develop their programming skills and develop more advance skills to solve a variety of computational problems. Students look at in depth at the moral, social and ethical use of computers and this will include all the relevant law. They will investigate hardware and software components that make up computer systems, and how each element works. They will learn how instructions are stored and executed within a computer system.

Students will look at the treats to computers both from Cyberattacks and viruses/malware etc. Students will learn Python to a high level and undertake a Mock None Examined Assessment on their abilities to solve problems using Python. The Students will undertake a mock NEA using Python, this will teach them the Plan/Develop/Test cycle for a project.

Content

There are three components, two examined components (01 and 02) weighted at 40% each and a non-exam assessment (03) weighted at 20% that is assessed by the teacher and externally moderated by OCR (NEA). Students must obtain a pass grade in each component to pass the course.

GCSE 9-11 Computer Science

Content Overview	Assessment Overview	
Computer systems <ul style="list-style-type: none"> • Systems Architecture • Memory • Storage • Wired and wireless networks • Network topologies, protocols and layers • System security • System software • Ethical, legal, cultural and environmental concerns 	Computer systems (01) 80 marks 1 hour and 30 minutes Written paper (no calculators allowed)	40% of total GCSE
Computational thinking, algorithms and programming <ul style="list-style-type: none"> • Algorithms * • Programming techniques • Producing robust programs • Computational logic • Translators and facilities of languages • Data representation 	Computational thinking, algorithms and programming (02) 80 marks 1 hour and 30 minutes Written paper (no calculators allowed)	40% of total GCSE
Programming project ** <ul style="list-style-type: none"> • Programming techniques • Analysis • Design • Development • Testing and evaluation and conclusions 	Programming project (03/04) 40 marks Totalling 20 hours Non-Exam Assessment	20% of total GCSE

* Algorithm questions are not exclusive to Component 02 and can be assessed in all components.

**Indicates inclusion of synoptic assessment.

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