



COMPUTER SCIENCE - KS5

Year 12

Half Term 1

All about the processor: what it is, different types and how they work. Different input, output and storage technologies and an introduction to operating systems.

Computational thinking: how we solve problems and the tools available to us.

Programming concepts including an introduction to Visual Studio.

Half Term 2

More on operating systems, how they manage the computer system.

From program to application: how we generate applications.

Computational methods: data structures and lots more programming, including assembly language in Little Man Computer.

Half Term 3

Software development and programming languages: an introduction to object oriented coding.

Standard algorithms: searching and sorting, measuring the efficiency of algorithms.

Half Term 4

Compression, encryption and hashing, networks.

Coding up encryption and hashing algorithms.

Developing an object oriented approach.

Half Term 5

Data type, floating point numbers, web technologies.

Data structures: graphs and trees. Traversal of graphs and trees.

Half Term 6

Moral, ethical and legal issues. Boolean logic.

Tracing programs, debugging and recursive programs.

An introduction to the major project.

Year 13

Half Term 1

Legal and ethical issues relating to computing: data protection laws, computer misuse, Copyright, Regulation of Investigatory Powers Act. Types of computer language: object orientated, pseudocode, polymorphism.

Project analysis: problem identification, research of solutions, creation of success criteria.

Half Term 2

Solution design: problem decomposition, algorithms, user interface design, data structure design and validation.

Half Term 3

Processor architecture, multicore and parallel systems, memory management by the operating system and the use of pipelining by the CPU and GPU.

Testing design, and creation of user interface and program code. Ongoing developmental testing and evidence collation.

Half Term 4

Continuing creation of program code for proposed solution, testing documentation and development evidence. Review and final testing of solution, and evaluation. Completion of final documentation.

Half Term 5

Revision of previous content, exam practice, modelling long form 'essay' style answers to optimize marks.

Revision of previous content, exam question practice, detailed step by step guide of modelling algorithm answers, writing and reading machine code and step by step analysis of code snippets with trace tables.

Half Term 6

Exam.





BTEC ICT - KS5

Year 12

Half Term 1

The concepts and implications of the use of, and relationships among, the devices that form IT systems.
Introduction to databases, normalisation.

Half Term 2

The concepts, process and implications of transferring data within and between IT systems.
Setting up databases and validation rules.

Half Term 3

The implications for individuals and organisations of using online IT systems.
The issues and implications of storing and transmitting information in digital form.
Queries and reports.

Half Term 4

The uses, issues and implications of IT systems and their impact on individuals and organisations.
Input forms, structure testing and evaluation.

Half Term 5

The concepts, impacts and implications of issues resulting from the use of IT systems.
Revision.

Half Term 6

Using social media in business, developments in social media, how businesses can use social media to support their business aims.

Year 13

Half Term 1

Introduction to website development, key characteristics of effective design. Features of social media websites tailored to business needs, business uses of social media risks and issues.

Half Term 2

Evaluative report of two websites. Using social media in business.

Half Term 3

Principles of website development: client brief and design. Develop a plan to use social media in a business to meet the requirements, social media planning processes, business requirements, content planning and publishing, developing an online community, developing a social media policy reviewing and refining plans.

Half Term 4

Website implementation. Implement the use of social media in a business, creating accounts and profiles, content creation and publication, implementation of online community building, data gathering and analysis.

Half Term 5

Structure testing, evaluation and documentation. Using social media in business.

Half Term 6

