



Computing

Key Stage 4 (Years 10 and 11)

At Key Stage 4, students can choose GCSE Computer Science or Digital Information Technology.

Computer Science

Qualification AQA GCSE Computer Science (8525).

Unit	Topic	What students learn	Term
Year 10			
Paper 1	3.2 Programming concepts	Reading and writing code: data types, variables and constants, programming constructs, Boolean operators, random numbers, arrays and records.	Autumn 1
Paper 1	3.1 Fundamentals of algorithms	Developing algorithms with pseudocode, flowcharts and code; linear and binary search; merge and bubble sort.	Autumn 2
Paper 2	3.3 Data representation	Number bases and binary; how computers represent numbers, text, images and sound; compression.	Spring 1
Paper 2	3.4 Computer systems	Hardware and software, Boolean logic, types of programming language, the CPU, memory and storage.	Spring 2
Paper 1	3.1 and 3.2 recap	Revisiting programming, adding arrays and subroutines.	Summer 1
Assessment	Year 10 mock exam	Mock examination.	Summer 2
Year 11			
Paper 2	3.5 Fundamentals of computer networks	How devices link together in networks; types of network and network protocols.	Autumn 1
Paper 2	3.6 Cyber security	Keeping computer systems and networks safe; threats including social engineering; detecting and preventing threats.	Autumn 2
Paper 2	3.7 Databases and SQL	Using SQL to retrieve, insert, edit and delete data in a relational database.	Spring 1
Paper 2	3.8 Ethical, environmental and legal impacts of digital technology	The impacts and risks of digital technology on society, including cyber security, hacking, wireless networking and autonomous vehicles.	Spring 2
Revision	Paper 1 and Paper 2	Structured revision of all content before the final exams.	Summer 1

Digital Information Technology

Qualification OCR Cambridge National in IT, Level 1/2 (J836).

Unit	Topic	What students learn	Term
Year 10			
R050	Topic Area 1: Design tools	Design tools such as mind maps and flowcharts, used in later computing study and in the workplace.	Autumn 1
R050	Topic Area 2: Human–computer interfaces in everyday life	How the interfaces of everyday electronic devices work and are designed.	Autumn 1
R050	Topic Area 3: Data and testing	How digital products are tested, preparing for work and further study in computing.	Spring 1
R070	Augmented reality theory	Augmented reality theory, including a practice assignment.	Spring 1
R070	Coursework 1	Completing the R070 coursework assignment (submitted by 1 May).	Spring 2
R050	Topic Area 4: Cyber security and legislation	Online threats, cyber security and the law, supporting safe online practice.	Summer 1
R050	Topic Area 5: Digital communications	The hardware and software used for digital communication.	Summer 1
R050	Topic Area 6: Internet of Everything	How networked devices beyond computers are changing people's lives.	Summer 1
Assessment	Year 10 mock exam	Mock examination.	To be confirmed
R060	R060 preparation	Practising with Excel to prepare for the R060 spreadsheet assignment.	Summer 2
Year 11			
R060	Spreadsheet theory	Spreadsheet theory, including a practice assignment.	Autumn 1
R060	Coursework 2	Completing the R060 coursework assignment (submitted by 1 December).	Autumn 2
R050	Recap of exam content	Revisiting Topic Areas 1–6 ahead of the R050 exam.	Spring 1
R060 / R070	Coursework resubmission	Improving R060 and redoing R070 where needed (resubmission by 1 May).	Spring 2
R050	Revision	Final preparation for the R050 exam.	Spring 2
Assessment	Final exam	R050 examination.	Summer 1