

GCSE specifications to Computer Science Accelerator course map

Introduction

This document demonstrates how the courses for the Computer Science Accelerator maps to the GCSE computer science specifications for first delivery in September 2020.

[OCR \(J277\)](#)

[Pearson Edexcel \(1CP2\)](#)

[AQA \(8525\)](#)

OCR (J277)

1. Computer systems (J277/01)	Online	Face-to-face/Remote
1.1 - Systems architecture	How computers work: demystifying computation Understanding computer systems Design and prototype embedded computer systems	An introduction to computer systems, networking and security Computer systems: input, output and storage Computer processors
1.2 - Memory and storage	Representing data with images and sound: bringing data to life Understanding computer systems How computers work: demystifying computation Introduction to web development	An introduction to computer systems, networking and security An introduction to algorithms, programming and data Computer systems: input, output and storage

	Understanding maths and logic in computer science	
1.3 – Computer networks, connections and protocols	An introduction to computer networking for teachers Introduction to encryption and cryptography	An introduction to computer systems, networking and security Fundamentals of computer networks
1.4 – Network security	Introduction to encryption and cryptography Introduction to cybersecurity for teachers Impact of technology: how to lead classroom discussions	An introduction to computer systems, networking and security The internet and cyber security
1.5 – Systems software	Understanding computer systems	An introduction to computer systems, networking and security
1.6 – Ethical, legal, cultural and environmental impacts of digital technology	Impact of technology: how to lead classroom discussions Introduction to cybersecurity for teachers	Higher attainment in GCSE computer science – meeting the challenge of exams

2. Computational thinking, algorithms and programming (J277/02)	Online	Face-to-face/Remote
2.1 – Algorithms	Design and prototype embedded computer systems Programming 101: An introduction to Python for educators Programming 102: Think like a computer	An introduction to algorithms, programming and data Representing algorithms using flowcharts and pseudocode Search and sort algorithms

	scientist Programming 103: Saving and structuring data Programming with GUIs Object-oriented programming in Python: create your own adventure game	
2.2 - Programming fundamentals	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Object-oriented programming in Python: create your own adventure game Understanding maths and logic in computer science Understanding computer systems Introduction to databases and SQL	An introduction to algorithms, programming and data Python programming constructs: sequencing, selection & iteration Python programming: working with data Higher attainment in GCSE computer science – meeting the challenge of exams
2.3 - Producing robust programs	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Design and prototype embedded computer systems	Python programming constructs: sequencing, selection & iteration Python programming: working with data Higher attainment in GCSE computer science – meeting the challenge of exams
2.4 - Boolean logic	How computers work: demystifying computation	An introduction to algorithms, programming and data

	Understanding maths and logic in computer science	
2.5 - Programming languages and Integrated Development Environments	Programming 101: An introduction to Python for educators How computers work: demystifying computation	An introduction to algorithms, programming and data Python programming constructs: sequencing, selection & iteration Python programming: working with data

Pearson Edexcel (1CP2)

Principles of Computer Science (1CP2/01)	Online	Face-to-face/Remote
1 - Computational thinking	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Design and prototype embedded computer systems Object-oriented programming in Python: create your own adventure game Understanding maths and logic in computer science How computers work: demystifying computation	An introduction to algorithms, programming and data Representing algorithms using flowcharts and pseudocode Search and sort algorithms Higher attainment in GCSE computer science – meeting the challenge of exams
2 - Data	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist How computers work: demystifying computation Understanding maths and logic in computer science Representing data with images and sound: bringing data to life	An introduction to algorithms, programming and data Computer systems: input, output and storage

	Design and prototype embedded computer systems	
3 - Computers	How computers work: demystifying computation Understanding computer systems Design and prototype embedded computer systems Introduction to cybersecurity for teachers	An introduction to computer systems, networking and security Computer systems: input, output and storage Computer processors
4 - Networks	An introduction to computer networking for teachers Introduction to cybersecurity for teachers Impact of technology: how to lead classroom discussions	An introduction to computer systems, networking and security Fundamentals of computer networks
5 - Issues and impact	Introduction to cybersecurity for teachers Impact of technology: how to lead classroom discussions	The internet and cyber security Higher attainment in GCSE computer science – meeting the challenge of exams

Application of Computational Thinking (ICP2/02)	Online	Face-to-face/Remote
6.1 - Develop code	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data	An introduction to algorithms, programming and data Python programming constructs: sequencing, selection & iteration Python programming: working with data Higher attainment in GCSE computer

	Design and prototype embedded computer systems Object-oriented programming in Python: create your own adventure game	science — meeting the challenge of exams
6.2 - Constructs	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Object-oriented programming in Python: create your own adventure game	An introduction to algorithms, programming and data Python programming constructs: sequencing, selection & iteration Python programming: working with data
6.3 - Data types and structures	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Object-oriented programming in Python: create your own adventure game	An introduction to algorithms, programming and data Python programming: working with data
6.4 - Input/output	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data	Python programming constructs: sequencing, selection & iteration
6.5 - Operators	Understanding maths and logic in computer science	Python programming constructs: sequencing, selection & iteration

		Python programming: working with data
6.6 - Subprograms	Programming 102: Think like a computer scientist Programming 103: Saving and structuring data	Python programming: working with data

AQA (8525)

Paper 1: Computational thinking and programming skills	Online	Face-to-face/Remote
3.1 - Fundamentals of algorithms	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Object-oriented programming in Python: create your own adventure game	An introduction to algorithms, programming and data Representing algorithms using flowcharts and pseudocode Search and sort algorithms Higher attainment in GCSE computer science – meeting the challenge of exams
3.2 - Programming	Programming 101: An introduction to Python for educators Programming 102: Think like a computer scientist Programming 103: Saving and structuring data Object-oriented programming in Python: create your own adventure game Design and prototype embedded computer systems Understanding maths and logic in computer science Networking with Python: socket programming for communication	An introduction to algorithms, programming and data Python programming constructs: sequencing, selection & iteration Python programming: working with data Higher attainment in GCSE computer science – meeting the challenge of exams

Paper 2: Computing concepts	Online	Face-to-face/Remote
3.3 - Fundamentals of data representation	Representing data with images and sound: bringing data to life Understanding maths and logic in computer science How computers work: demystifying computation	An introduction to algorithms, programming and data Computer systems: input, output and storage
3.4 - Computer systems	Understanding computer systems Understanding maths and logic in computer science How computers work: demystifying computation	An introduction to computer systems, networking and security Computer systems: input, output and storage Computer processors
3.5 - Fundamentals of computer networks	An introduction to computer networking for teachers Impact of technology: how to lead classroom discussions Introduction to encryption and cryptography Introduction to cybersecurity for teachers	An introduction to computer systems, networking and security Fundamentals of computer networks The internet and cyber security
3.6 - Cyber security	Introduction to cybersecurity for teachers Impact of technology: how to lead classroom discussions	An introduction to computer systems, networking and security The internet and cyber security
3.7 - Relational databases and structured query language (SQL)	Introduction to databases and SQL	
3.8 - Ethical, legal and environmental impacts of digital technology on wider	Introduction to cybersecurity for teachers Impact of technology: how to lead	Higher attainment in GCSE computer science – meeting the challenge of

society, including issues of privacy	classroom discussions	exams
--------------------------------------	---------------------------------------	-----------------------