BRANNEL SCHOOL
EXCELLENCE | CREATIVITY | COMMUNITY

Curriculum Summary Document

Year 10 – Computer Science

Module/Unit of Learning	Taught During	What will students learn?	How does this prepare students for success at GCSE?	Links to other Subjects
Unit 1: Computer Systems	Sept – Dec	Students study core Component 1 theory: CPU architecture, fetch-execute cycle, performance factors, embedded systems, primary and secondary storage, data units, binary/hex, image and sound representation, compression, networks and topologies, protocols, security threats, prevention methods, systems software and utility software, and legal, ethical, cultural and environmental impacts.	This unit directly mirrors OCR Component 1 content, building secure foundations for exam success. Students gain fluency with key terminology, data-representation skills, and structured understanding of computer systems essential for progress across KS4.	Maths Science PSHE
Programming Basics	Nov – Feb	Students develop foundational Python skills including variables, inputs/outputs, data types, arithmetic/Boolean operators, sequencing, selection, iteration and writing small programs. They build confidence through time2code challenges and learn procedures, functions and debugging.	This unit strengthens the practical programming fluency required for Component 2. Students begin applying computational thinking, producing small working programs, and building the accuracy and resilience needed for algorithmic problem-solving.	Maths Design Technology
Unit 2: Algorithms & Programming	Feb – July	Students study OCR Component 2 content: algorithms, flowcharts, pseudocode, trace tables, searching and sorting algorithms, programming fundamentals, robust programming, testing, Boolean logic, languages and IDE tools. They apply these through structured Python development and exam-style tasks.	This unit prepares students for GCSE success by combining algorithmic thinking with practical coding. Students learn to read, write, test and refine algorithms, apply exam-reference language, and develop robust solutions aligned to Component 2 requirements.	Maths Science