

COMPUTING

KEY STAGES 3 & 4 | CURRICULUM | 2026–27

BACON'S COLLEGE • Curriculum Leader • Mr Alemu

A broad digital education: understand, create and use technology responsibly.

KEY STAGE 3 | COMPUTING

01 | Curriculum intent

At Bacon's College, our Key Stage 3 Computing curriculum aims to equip students with the knowledge, understanding and practical skills required to become confident, competent and responsible users of technology.

Our curriculum provides students with opportunities to learn, understand and apply the fundamental principles of Computer Science, information technology and digital literacy. Through a broad and engaging programme of study, students develop the skills required to navigate an increasingly digital world, preparing them for further education, future employment and everyday life.

Computing extends beyond simply learning how to use a computer or write a program. It involves understanding how technology works, recognising its impact on society and developing the ability to use digital tools creatively, critically and responsibly.

Students are encouraged to become computational thinkers who can identify, analyse and solve problems through logical reasoning, abstraction, decomposition and algorithmic thinking. Through practical programming activities, students develop their ability to design, create, test and refine digital solutions while building resilience, independence and confidence in their problem-solving abilities.

Alongside the fundamental principles of Computer Science, our curriculum places increasing emphasis on the wider applications of Computing. Students develop their digital literacy through the effective use of software, digital communication, data handling and creative digital production. They are encouraged to explore how emerging technologies, including artificial intelligence, are transforming the ways in which individuals communicate, work and interact with the world.

Throughout Key Stage 3, students develop an understanding of online safety, digital citizenship and the ethical implications of technology. They learn to recognise potential online risks, evaluate the reliability of digital information, protect their personal information and make informed decisions when using digital platforms.

Our curriculum also encourages creativity and innovation by providing students with opportunities to design and produce digital products. Through activities such as programming, digital graphics and interactive media, students learn to apply their knowledge to practical situations and develop transferable skills that extend beyond the Computing classroom.

We recognise that students enter secondary education with different levels of digital knowledge, experience and confidence. Our curriculum is designed to provide all students with access to the fundamental principles of Computing while offering appropriate support and challenge to enable them to develop their knowledge and skills.

A central aim of our KS3 curriculum is to provide students with a broad foundation that enables them to make informed decisions about their future studies. Students are introduced to key concepts and practical applications that support progression into both GCSE Computer Science and Cambridge National Creative iMedia at Key Stage 4.

Through Computer Science, students develop their understanding of computer systems, computational thinking, algorithms and programming. Through Creative iMedia, students explore digital design, visual communication, media production and the creative application of technology.

By the end of Key Stage 3, students should have developed the knowledge, practical experience and confidence required to pursue either qualification according to their interests, aspirations and individual strengths.

Ultimately, our ambition is to develop students who are not simply consumers of technology, but who possess the knowledge, creativity and confidence to understand, question and create digital solutions that can positively influence their lives and the wider world.

02 | Curriculum development: from Computer Science to Computing

Our Key Stage 3 curriculum is being developed to reflect a broader approach to Computing, incorporating the fundamental principles of Computer Science alongside digital literacy, creative digital production, data literacy and the responsible use of emerging technologies.

This direction reflects United Learning's guidance, which encourages schools to retain programming and computational thinking while broadening students' experiences of digital technology and its real-world applications.

Curriculum area	Proposed development
Computer Science	Retain the fundamental principles of computer systems, computational thinking, algorithms and programming.
Digital literacy	Develop students' confidence in using digital tools, managing information and communicating effectively.
Creative digital production	Introduce opportunities to create digital graphics, interactive media, animations and other digital products.
Artificial intelligence	Develop an understanding of AI, its applications, limitations and responsible use.
Data literacy	Develop students' ability to collect, organise, analyse and interpret data.
Digital citizenship	Explore online safety, misinformation, privacy, digital footprints and the ethical implications of technology.

The intention is to develop a curriculum in which theoretical knowledge is reinforced through practical application, enabling students to understand not only how technology works but also how it can be used to solve problems and create meaningful digital products.

03 | Curriculum implementation

Our Key Stage 3 Computing curriculum is structured to provide students with a progressive learning experience across Years 7, 8 and 9. The curriculum will introduce fundamental digital skills and computational thinking before developing students' understanding of computer systems, programming, creative digital production and emerging technologies. As students progress through Key Stage 3, they will be encouraged to apply their knowledge with increasing independence, creativity and confidence.

KS3 curriculum journey

Year group	Curriculum focus	Intended progression
Year 7: Discovering Computing	Digital literacy, online safety, digital communication, block-based programming, computational thinking, artificial intelligence and introductory creative digital production.	Students develop confidence in using digital technology effectively and responsibly while beginning to understand how computers can be used to solve problems.
Year 8: Understanding and Creating	Computer systems, data representation, digital graphics, creative media, data literacy, artificial intelligence and programming.	Students develop their understanding of how computer systems operate and apply their knowledge through practical digital projects.
Year 9: Applying and Innovating	Python programming, algorithms, artificial intelligence, data analysis, interactive digital media, artificial intelligence and digital citizenship.	Students apply their knowledge to increasingly complex problems, develop independent digital solutions and prepare for progression into KS4 qualifications.

YEAR 7: DISCOVER → YEAR 8: UNDERSTAND & CREATE → YEAR 9: APPLY & INNOVATE

This progression ensures that students develop their knowledge and practical skills throughout Key Stage 3, with opportunities to revisit and apply previously acquired knowledge in increasingly challenging contexts.

04 | Curriculum impact

The intended impact of our Key Stage 3 Computing curriculum is to develop students who are confident, independent and responsible users of technology, equipped with the knowledge and skills required to participate effectively in an increasingly digital society.

By the end of Key Stage 3, we aim for students to demonstrate a secure understanding of the fundamental principles of Computing and the ability to apply their knowledge to practical problems.

Students should be able to use digital tools effectively, demonstrate computational thinking, develop and refine digital solutions, and evaluate the impact of technology on individuals and wider society.

Through the broader Computing curriculum, students will also develop an understanding of emerging technologies, including artificial intelligence, and recognise the importance of using digital information critically and responsibly.

The curriculum aims to develop creativity, resilience, independence and problem-solving skills, enabling students to approach unfamiliar challenges with confidence.

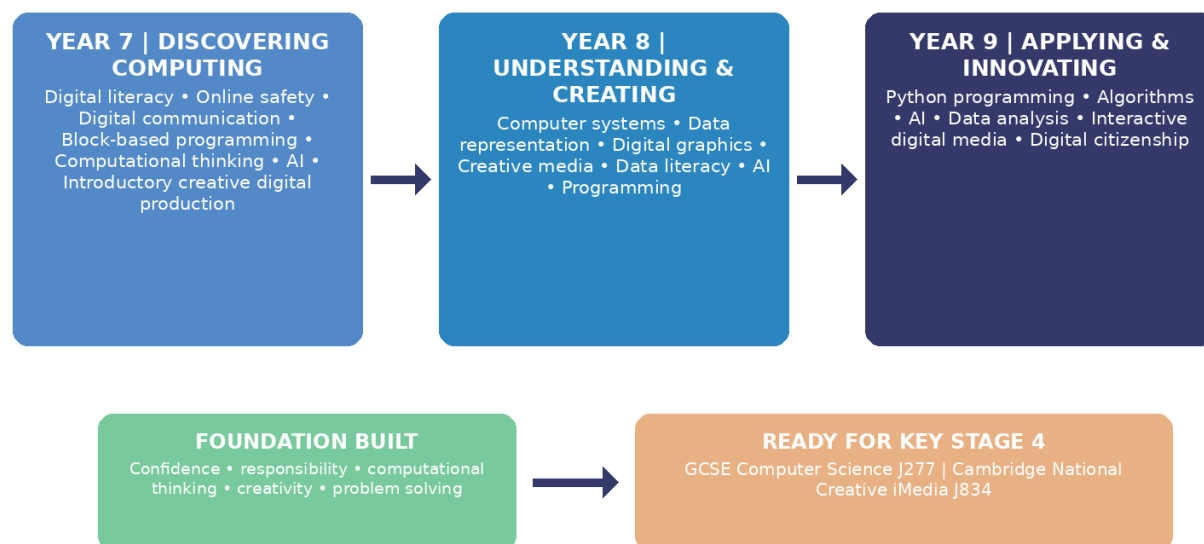
Our intended outcomes are that students will demonstrate confidence and competence when using digital technology; understand and apply fundamental principles of Computer Science; develop computational thinking and programming skills; create and evaluate digital products for different purposes and audiences; understand the importance of data; recognise the opportunities, limitations and ethical implications of AI; demonstrate responsible digital citizenship; apply creativity and critical thinking; and make informed decisions about future studies and careers.

The curriculum will also support progression into the two Key Stage 4 pathways offered at Bacon's College: GCSE Computer Science and Cambridge National Creative iMedia. Students will have opportunities to develop the foundational knowledge and practical skills relevant to both qualifications.

Our overarching ambition is to ensure that every student leaves Key Stage 3 with the confidence, knowledge and practical skills to understand, use and create technology responsibly.

KEY STAGE 3 | COMPUTING CURRICULUM JOURNEY

Discover → Understand & Create → Apply & Innovate



Visual curriculum map: Key Stage 3

COMPUTER SCIENCE & CREATIVE iMEDIA

KEY STAGE 4 | CURRICULUM JOURNEY | 2026–27

BACON'S COLLEGE • Curriculum Leader • Mr Alemu

Understand the systems. Solve the problems. Create the future.

Curriculum at a glance

Two complementary pathways enable students to understand digital systems and create purposeful digital solutions. This KS4 overview sets out the intended sequence, knowledge progression and assessment across Years 10 and 11.

GCSE Computer Science • J277	Cambridge National Creative iMedia • J834
Computer systems and computational thinking, algorithms and programming are taught across BOTH Years 10 and 11.	Year 10: R093 and R094. Year 11: R097, alongside R093 retrieval and final examination preparation.
J277/01 Computer systems: 1 hour 30 minutes, 80 marks, 50%.	R093 Creative iMedia in the media industry: externally assessed examination in Year 11.
J277/02 Computational thinking, algorithms and programming: 1 hour 30 minutes, 80 marks, 50%.	R094 Visual identity and digital graphics and R097 Interactive digital media: OCR-set non-examined assessments.

Our intended progression

YEAR 10 → establish core concepts, design principles and practical techniques → YEAR 11 → deepen understanding, apply skills independently, consolidate and assess.

01 | GCSE Computer Science • J277

Curriculum intent: Students understand how computer systems work, analyse problems using computational thinking and design, implement, test and refine programs. Systems knowledge and programming are deliberately interleaved across both years so that pupils revisit and connect ideas.

Year 10 • six-module teaching map

Module	Computer systems • J277/01	Algorithms and programming • J277/02
1	CPU architecture, fetch–execute cycle, CPU performance and embedded systems	Computational thinking; decomposition and abstraction; sequencing and variables
2	Primary and secondary storage; data units and capacity	Selection, iteration, operators and trace tables
3	Binary, hexadecimal and data representation	Designing algorithms: pseudocode, flowcharts and linear search
4	Networks, topologies and network hardware	Binary search; bubble sort and insertion sort; comparative application
5	Wired/wireless connections, protocols and layers	Subprograms, arrays and string manipulation; testing and debugging
6	Network security and systems software	Robust programming; validation, verification and practical programming challenge

Year 11 • six-module teaching map

Module	Computer systems • J277/01	Algorithms and programming • J277/02
1	Ethical, legal, cultural and environmental impacts; revisit architecture	Boolean logic; programming languages and IDEs; revisit programming constructs
2	Memory, storage and representation in applied contexts	Algorithm design, searching/sorting and code tracing
3	Networks, protocols, security and system software in scenarios	Practical programming: design, implement, test, refine
4	Interleaved retrieval and extended-response practice	Robustness, debugging and programming in unfamiliar contexts
5	Targeted reteaching from assessment evidence; timed papers	Targeted reteaching; algorithm-writing and timed papers
6	Final consolidation and external examination	Final consolidation and external examination

Programming is taught and practised throughout the course, not treated as a separately graded coursework component. Students must have the opportunity to undertake practical programming task(s).

02 | Creative iMedia • J834

Curriculum intent: Students investigate the media industry and how audience, purpose and client requirements shape products. They learn to plan, create and review visual and interactive media, progressing from foundational design decisions to a more complex interactive product.

Year 10 • R093 + R094

Module	Learning journey	Evidence / assessment
1	R093: media industry, sectors, products and audiences	Knowledge checks; short scenario responses
2	R093: factors influencing product design, media codes and conventions	Pre-production analysis; examination-style questions
3	R093: pre-production planning, legal considerations and distribution; R094 introduction to visual identity	Planning exercises and design rationale
4	R094: visual identity, digital graphics and production techniques; guided practice	Practice briefs; design and production exercises
5	R094: plan, create and review work for the live OCR-set assignment	R094 NEA under OCR conditions
6	R094 completion as scheduled; revisit R093 and introduce interactive product features	Knowledge checks and preparatory R097 practice

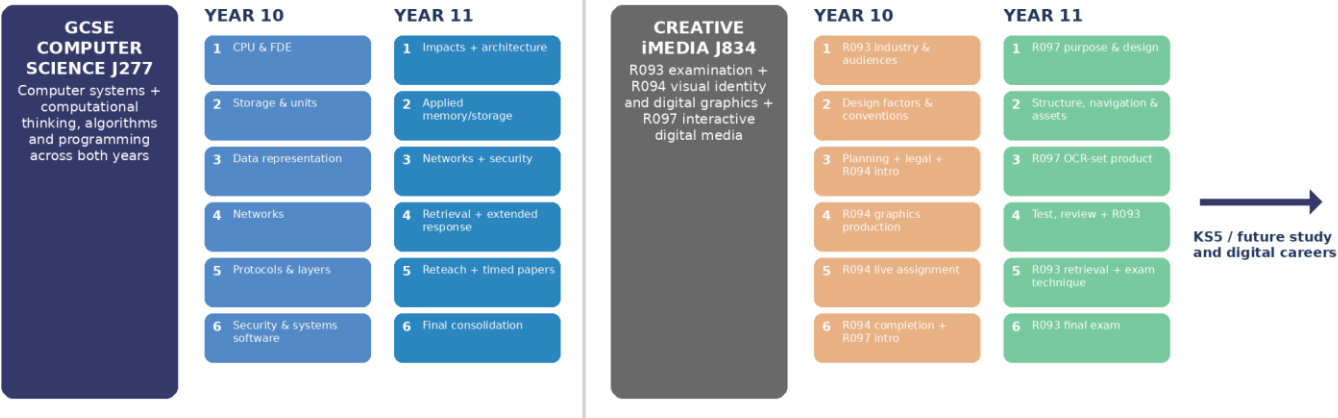
Year 11 • R097 + R093 final examination

Module	Learning journey	Evidence / assessment
1	R097: interactive digital media, audience, purpose and design requirements	Analysis of interactive products; planning practice
2	R097: structure, navigation, assets and production skills	Practice production tasks and testing
3	R097: plan and create the OCR-set interactive digital media product	R097 NEA under OCR conditions
4	R097: test, review and complete work within permitted assessment arrangements; revisit R093	NEA completion and R093 diagnostic checks
5	R093: retrieval, application to unfamiliar media briefs and exam technique	Timed questions; feedback and reteaching
6	R093: final examination preparation and final examination	External R093 examination in Year 11

Assessment safeguard: R093 must be taken in the final assessment series before certification. Use the live OCR-set assignments and current NEA feedback/authentication rules; any resubmission opportunities must follow OCR requirements, not an assumed automatic “resit” slot.

KEY STAGE 4 | TWO COMPLEMENTARY COMPUTING PATHWAYS

Year 10 establishes core knowledge and techniques; Year 11 deepens, applies, consolidates and assesses.



Visual curriculum map: Key Stage 4

03 | Implementation & impact

Teaching and learning

Knowledge is introduced through explicit teaching, worked examples, retrieval and carefully sequenced practice. Students move from teacher modelling to supported application and then independent problem-solving. Practical programming and digital production provide opportunities to apply theoretical understanding in authentic contexts.

Checking understanding and responding

Low-stakes quizzes, questioning, code tracing, design critique, practice briefs and examination-style questions are used to identify misconceptions. Teachers use the resulting evidence to reteach, provide targeted practice and reassess. The exact assessment schedule should be aligned to departmental plans.

Inclusion and challenge

Scaffolds, accessible exemplars, vocabulary support and staged practical tasks help students access demanding content. Support is reduced as confidence develops; extension tasks require justification, debugging, evaluation and application to unfamiliar scenarios.

What successful learning looks like

Computer Science	Creative iMedia
Students explain computer systems accurately and apply this knowledge to scenarios.	Students explain how media purpose, audience and client requirements influence design.
Students design, trace, implement, test and refine algorithms and programs.	Students plan, create, test and review digital graphics and interactive products.
Students use assessment feedback to address gaps and communicate technical reasoning.	Students justify design choices, respond to feedback appropriately and meet assessment requirements.

Evidence to review, rather than assume

Review student work and programs, assessment outcomes, misconceptions and reteaching records, NEA progress and moderation outcomes, and student explanations of prior learning. Add school-specific impact data only when verified.

Source and status

Curriculum reference: OCR GCSE Computer Science J277 (version 3.1, May 2026), Cambridge National Creative iMedia J834 (version 6, June 2026), and the Bacon's College curriculum framework. The sequence is reviewed through departmental planning, assessment evidence and awarding-body updates.