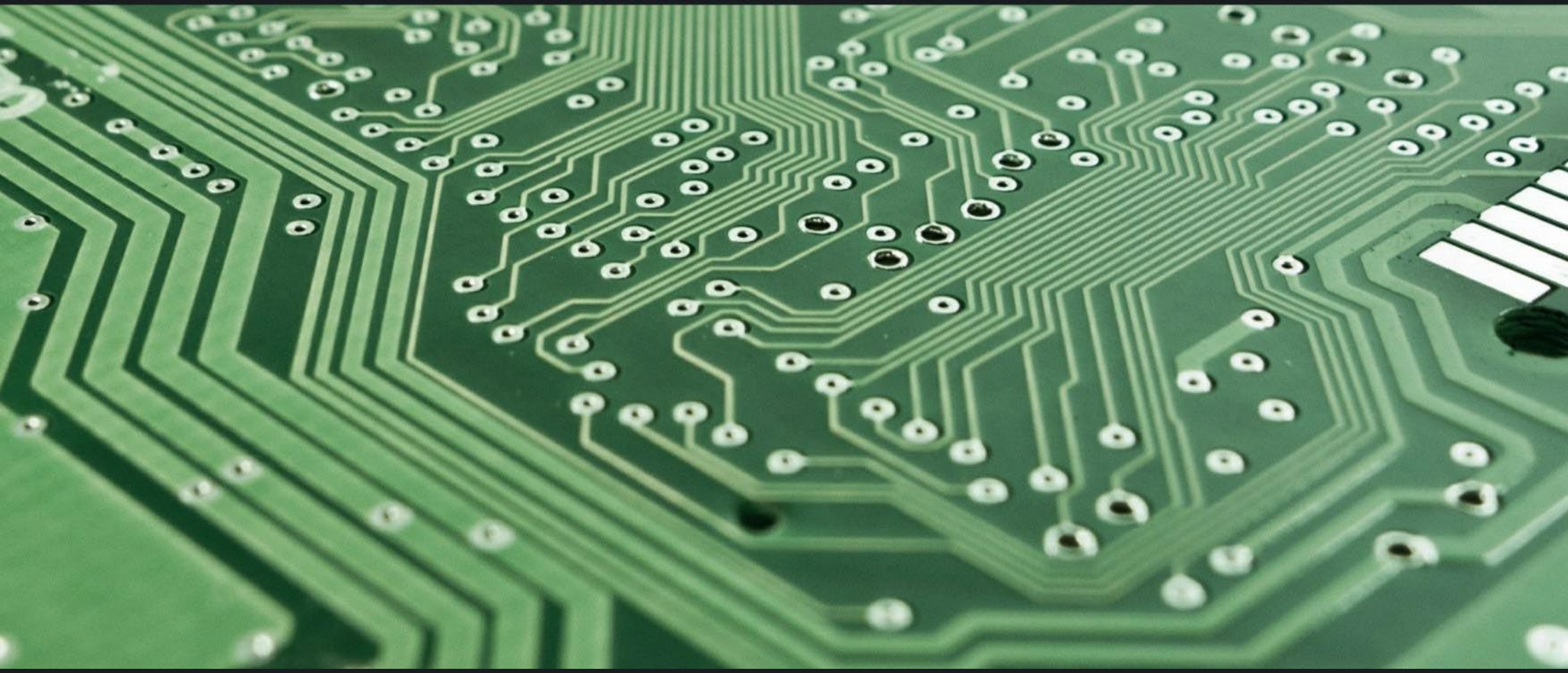
COMPUTING



Curriculum Aims, Delivery & Content

Bottisham Village College

Achievement through Inspiring, Caring, Enriching

Curriculum Delivery KS3	Each topic is delivered through lesson time with extended learning to reinforce learning, and blended learning to cultivate deeper, richer learning experiences. Classes are taught as part of a rotation. Each rotation is typically 12 weeks, meaning that students will receive approximately 24 lessons.
Curriculum aims Year 7	We aim to build on the knowledge and skills gained at our feeder primary schools. Computing comprises of 3 strands: **Information Technology** - the study and use of systems for storing, retrieving and sending information; **Computer Science** - computational thinking and an understanding of how computer systems work; **Digital Literacy** – the skills needed to live, learn and work safely and effectively using technology, on a number of different platforms and for different purposes. We aim to make students confident users of IT with skills for analysis and research, presentation and communication; effective in the basics of coding and how computers work; knowledgeable about the purpose and safe practices of modern technology, with a clear understanding of the dangers and implications of using different technologies.
Curriculum Content Year 7	**ICT legislation –** the Computer Misuse Act, alongside the School's Acceptable Use Policy. This includes looking at good practice such as password management. **E-safety –** privacy options on social media, as well as general good practice, particularly in relation to the sharing of information. **Binary –** at the lowest levels of a computer everything is represented by a binary electrical signal that registers in one of two states: one or off. **Algorithms –** steps to solving problems logically, using both flowcharts and pseudocode. **Programming –** designing and building an executable computer program for accomplishing a specific computing task using Small Basic. **Hardware –** the physical, tangible components of a computer. **Networks -** how computers share and exchange information, looking at the differences between Area Networks and Cloud Networks.

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Curriculum aims Year 8	The curriculum in Year 8 will deepen the students' understanding of how computers work and strengthen knowledge of concepts from Year 7. Teaching will begin to integrate more sophisticated transferable computational thinking skills and independent learning. A key aspect of the learning is Year 8 is to develop their critical thinking and problem solving skills.
Curriculum Content Year 8	**ICT Legislation –** the Copyright Act and using this to inform their own practices when researching. Studying the Health and Safety Act. **E-safety –** social media platforms and their purpose, as well as how to stay safe across platforms. **Media** – how the media is constructed and how digital tools are used in the media, such as photo-shopping and evaluating the reasons for this. **Micro:bits** – developing team skills by carrying out physical computing and programming tasks with Micro:bits **Algorithms –** revisiting algorithms to create more complex instructions, both with flowcharts and pseudocode. **Programming –** designing and building an executable computer program for accomplishing a specific computing task using Block Based Language. **Boolean Logic –** studying Boolean Operators: OR, AND and NOT. At the heart of Boolean Logic is the idea that al values are either True or False.
Curriculum aims Year 9	The curriculum in Year 9 will deepen the students' understanding of how computers work and strengthen knowledge of concepts from Years 7 and 8. An important part of the Year 9 curriculum is to ensure that students are competent, confident users of computers and generally used programmes. Develop transferable problem-solving skills and allow students to develop their ability to learn new software quickly and efficiently.
Curriculum Content Year 9	**ICT Legislation –** the Data Protection Act to better understand how data is protected and used. **E-safety –** Digital Footprints and evaluating their own. **Spreadsheets –** spreadsheets in real world scenarios, using both Mathematical and formatting options. **Programming –** designing and building an executable computer program for accomplishing a specific computing task using python. This will include creating, adding to and exporting data using lists and arrays; creating variables and subroutines. **Networks –** a set of computers connected together for the purpose of sharing resources. Developing Network knowledge learnt in Year 7 to extend beyond our school networks. **Web Design –** planning and creating a website using the software CC Dreamweaver.

Key Stage 4
OCR Cambridge National Creative iMedia

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Creative iMedia Curriculum Intent

Course Aims and Learning Outcomes

The Cambridge National in Creative iMedia will encourage students to:

- understand and apply the fundamental principles and concepts of digital media including factors that influence product design, use of media codes and conventions, pre-production planning techniques, legal issues and creation/publishing/distribution considerations
- develop learning and practical skills that can be applied to real-life contexts and work situations
- think creatively, innovatively, analytically, logically and critically
- develop independence and confidence in using skills that would be relevant to the media industry and more widely
- design, plan, create and review digital media products which are fit for purpose meeting both client and target audience requirements.

Unit Aims

R093 - Creative iMedia in the media industry

- sectors, products and job roles that form the media industry
- legal and ethical issues considered, and the processes used to plan and create digital media products.
- how media codes are used within the creation of media products to convey meaning, create impact and engage audiences.
- how to choose the most appropriate format and properties for different media products.

R094 – Visual identity and digital graphics

- how to develop visual identities for clients.
- to apply the concepts of graphic design to create original digital graphics which incorporate your visual identity to engage a target audience

R097 – Interactive digital media

- to design and create interactive digital media products for chosen platforms
- to select, edit and repurpose multimedia content of different kinds and create the structure and interactive elements necessary for an effective user experience

Curriculum Delivery

Students will have 3 lessons a fortnight.
Each unit has a formal assessment at the end, where staff have guidance and rules from the exam board OCR and JCQ.

Assessment:
Y10 Summer **R094** 10-12 hour controlled assessment (30%)
Y11 Summer **R097** 12-15 hour controlled assessment (30%)
Y11 Summer **R093** 1 ½ hour Written Exam (40%)

Key Stage 4
OCR Cambridge National Creative iMedia

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Creative iMedia Curriculum Intent cont.

Curriculum Content

Year 10						Year 11					
R093: • Media industry sectors and product • How style, content and layout are linked to the purpose. • Client requirements and how they are defined • Audience demographics and segmentation • Media codes used to convey meaning, create impact and/or engage audiences	**R093**: • Work planning and documents used to support ideas generation • Documents used to design/plan media products **R094**: • Purpose, features, elements and design of visual identity • Graphic design concepts and conventions • Properties of digital graphics and use of assets	**R094**: • Techniques to plan visual identity and digital graphics • Tools and techniques to create visual identity and digital graphics • Technical skills to source, create and prepare assets for use within digital graphics	**R094**: • Techniques to save and export visual identity and digital graphics • Controlled Assessment	**R094**: • Controlled assessment **R097**: • Types of interactive digital media, content and associated hardware	**R097**: • Features and conventions of interactive digital media. • Resources required to create an interactive digital media product • Pre-production and planning documentation and techniques for interactive digital media	**R097:** • Types of interactive digital media, content and associated hardware • Features and conventions of interactive digital media • Resources required to create an interactive digital media product • Pre-production and planning documentation and techniques for interactive digital media	**R097:** • Technical skills to create and/or edit and manage assets for use within interactive digital media products • Technical skills to create interactive digital media • Techniques to export/publish interactive digital media	**R097:** • Technical skills to test/check and review interactive digital media products • Improvements and further developments	**R097:** • Controlled Assessment **R093:** • Distribution platforms and media to reach • Properties and formats of media files	**R093:** • Sources of research and types of research The legal issues that affect • Job roles in the media industry	**R093:** • Revision and mock papers/ tests • Terminal exam

Key Stage 4
OCR GCSE Computer Science

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Curriculum Aims Year 10	The GCSE Computer Science course is an engaging and practical subject which focuses on both hardware and software. The course aims to develop students understanding of system architecture and how the components that make up a system operate and communicate with one another. The subject aims to encourage students to develop their understanding and application of the core concepts within a computer system. Student will comprehend and apply the essential principles and concepts of computational thinking including abstraction, decomposition, logic, algorithms, and data representation. Students also analyse problems in computational terms and plan inventive solutions by designing, writing, debugging and evaluating programs using the python programming language.
Curriculum Delivery Year 10	Students will have 3 lessons a fortnight. Lessons will be delivered through theory and practical based tasks. Typically students will be assessed formatively during lessons and receive summative assessment throughout the GCSE course. Past papers and GCSE style questions are used to assess students understanding of both components 1 & 2 in preparation for their GCSE exams. Practical tasks will be assessed visually and with the assistance of online tools.
Curriculum Content Year 10	**Computer systems – COMP01 (50% 0f GCSE 1.5 hour exam)** • Systems Architecture • Memory • Storage • Wired and wireless networks • Network topologies, protocols and layers • System security • System software • Ethical, legal, cultural and environmental concerns **Computational thinking, algorithms and programming - COMP2 (50% 0f GCSE 1.5 hour exam)** • Algorithms • Programming techniques • Producing robust programs • Computational logic • Translators and facilities of languages • Data representation
Curriculum Aims Year 11	Develop previous knowledge gained and cover pinnacle topics and concepts within the course in preparation for the students GCSE exams.
Curriculum Delivery Year 11	Students will have 3 lessons a fortnight. Selected topics will be recovered and content revised up until the GCSE exams. GCSE EXAM in COMP01 Computer systems (50% of final grade) GCSE EXAM in COMP02 Computational thinking, algorithms and programming (50% of the final grade)
Curriculum Content Year 11	**Programming Project** • Programming techniques • Analysis • Design • Development • Testing and evaluation and conclusions **Revision/complete** • **COMP01 –** all chapters • **COMP02 –** all chapters