Holy Cross
CATHOLIC HIGH SCHOOL

Computing Department

ICT and Computing

Enrichment and Personal Development		Links to Careers in Computing	
Year 7	After school Code club – Opportunity for pupils to develop their programming skills further. Using computers safely securely and responsibly. Problem solving, logical thinking, computational thinking, communicating ideas, creative thinking	**Year 7**	Cybersecurity expert Computer programmer Cybercrime detective Social media analyst
Year 8	After school Code club – Opportunity for pupils to develop their programming skills further. Problem solving, logical thinking, computational thinking, communicating ideas, critical thinking, creative thinking.	**Year 8**	Primary school teacher Network engineer Video games designer
Year 9	After school Code club – Opportunity for pupils to develop their programming skills further. Problem solving, logical thinking, computational thinking, communicating ideas, critical thinking, creative thinking.	**Year 9**	Software engineer Computer forensic specialist Graphic designer Media careers - video editor, graphics designer, programme editor
Year 10	After school Code club – Opportunity for pupils to develop their programming skills further. Problem solving, logical thinking, computational thinking. Cultural, social and environmental use of ICT.	**Year 10**	Military drone operator Computer forensic investigator Virtual reality developer Interior designer
Year 11	After school Code club – Opportunity for pupils to develop their programming skills further. Impact of digital technology on people's lives.	**Year 11**	Mobile phone developer Cloud architect IT consultant Robotics engineer

Key areas of focus in this unit of work

Subject specific knowledge

Assessment (including both formative and summative)

Progression of learning

KS2 Transferable Skills

Design, write and debug programs
Use sequence, selection and iteration in programs
Logical reasoning
Select use and combine a variety of software
Use technology safely, respectfully and responsibly

Computing Department
KS3 Curriculum Journey

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	YEAR 7		YEAR 8		YEAR 9	
	UNIT 1	**UNIT 2**	**UNIT 1**	**UNIT 2**	**UNIT 1**	**UNIT 2**
	Using Computers safely effectively and responsibly: Skills in internet searching and presenting information.	**Intro. to programming:** Programming skills using a block editor. Developing problem solving skills.	**Understanding computers:** Practical skills looking at how computers work.	**Developing programming skills:** Sequencing, iteration. Developing a gaming environment. Text based programming skills using a higher-level language (Python).	**Creative iMedia:** Developing skills in combining text and images.	**Developing Computer Science skills:** Developing computational thinking skills.
	• Social networking and keeping yourself safe online • Keeping your data safe • Copyright • Health and safety • Cyberbullying	• Block programming • selection, sequencing and iteration • Variables • Conditional logic • Loops, random, if and else • Physical programming BBC Micro: bit	• Inputs and outputs • Storage devices • Understanding binary • Computer networks • Convergence and new technologies	• Introduction to Kodu game development • Developing game environments • Programming concepts; sequencing, iteration, loops, conditional logic	• Designing and creating • Image and text manipulation • Animations • Sound and video editing • Problem solving skills • Creative and innovative thinking	• Computational and logical thinking • Encryption and cryptography • Binary addition and data representation • Python programming concepts
	Formative assessment: end of unit test based on knowledge acquired.	**Summative assessment:** based on progress within lessons. Ability to construct sequential programs and solve problems.	**Formative assessment:** end of unit test based on knowledge acquired.	**Summative assessment:** based on progress during lessons. Ability to construct sequential programs and solve problems.	**Summative assessment:** based on progress during lessons. Ability to produce industry standard professional looking documents that meets the client brief.	**Formative assessment:** End of unit test based on knowledge acquired.
	Developed further in Year 9 cybersecurity and KS4 in Computer Science. Cyber security and Health and safety in Creative iMedia.	Progression to Year 8 developing programming skills using a higher-level language. From using block based programming to using text based languages.	Progression to Year 9 developing computer Science skills and computational thinking. Building on knowledge of how computers work and developing knowledge further such as binary addition.	Progression to Year 9 developing computer science skills and computational thinking. Using text based language to develop scenarios, this developed further to solving problems with text based language.	Progression to KS4 Creative iMedia. Skillls in designing and creating documents. Taking a closer look at what makes good design and how effective design can influence audiences.	Progression to KS4 GCSE Computer Science. Greater depth of knowledge in Computer systems, system architecture, use of binary in images and sound.

KS2 Transferable Skills

Design, write and debug programs
Use sequence, selection and iteration in programs
Logical reasoning
Select use and combine a variety of software
Use technology safely, respectfully and responsibly

Creative Imedia
KS4 Curriculum Journey
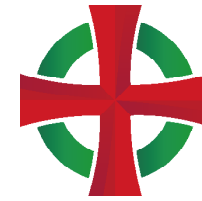
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CREATIVE iMEDIA		
UNIT 1 (R093)	**UNIT 2 (R094)**	**UNIT 3 (R097)**
Creative Media in the media industry In this unit pupils will learn about the sectors, products and job roles that form the media industry. You will learn the legal and ethical issues considered and the processes used to plan and create digital media products.	**Visual identity and digital graphics** In this unit pupils will learn how to develop visual identities for clients.	**Interactive digital media** In this unit pupils will learn to design and create interactive digital media products for chosen platforms.
How media codes are used within the creation of media products to convey meaning, create impact and engage audiences. Pupils will learn to choose the most appropriate format and properties for different media products. • Media industry sectors and products • Factors influencing product design • Pre-production planning • Legal issues that affect media • Distribution platforms and media to reach audiences	Apply the concepts of graphic design to create original digital graphics which incorporate your visual identity to engage a target audience. • Develop visual identity • Plan digital graphics for products • Create visual identity and digital graphics • Tools and techniques of imaging editing software used to create digital graphics	In this unit pupils will learn to select, edit and repurpose multimedia content of different kinds and create the structure and interactive elements necessary for an effective user experience. • Types of interactive digital media, content and associated hardware • Create interactive digital media • Review interactive digital media
Formative assessment: This unit is assessed by a 90 minute exam which has 70 marks in total. It has two sections – Section A has 10 marks based on 7 and 10 closed response, multiple choice and short answer questions which assess the recall of knowledge and understanding. Section B has 60 marks. This will have context-based questions. Students will be presented with a short scenario which develops through the paper and will apply their knowledge of Creative iMedia concepts to produce relevant responses.	**Summative assessment**: Non-Examined Assessment internally marked by teachers using the OCR marking criteria and guidance and externally moderated by the OCR-appointed moderator. The quality of planning documents, creation of digital artefacts and reviewing of the final product in relation to client brief and audience will be assessed.	**Summative assessment:** Non-Examined Assessment internally marked by teachers using the OCR marking criteria and guidance and externally moderated by the OCR-appointed moderator. The quality of planning documents, creation of digital artefacts and reviewing of the final product in relation to client brief and audience will be assessed.
Some of the knowledge, understanding and skills acquired when completing this unit will be developed in Unit 2 & Unit 3. How purpose and audience will affect the design of specific documents. Planning documents such as mind maps, spider diagrams, mood boards, visualisation diagrams and Gantt charts can be used to inform planning.	Some of the knowledge, understanding and skills acquired when completing this unit will be developed in Unit 3. These include; visual identity to inform planning and develop of documents. Using image editing software to repurpose and create digital graphics.	Once completing the course pupils may go onto develop their skills further following BTEC Extended Certificate in IT Level 3 or Cambridge Technical in IT Level 3. It will also provide the skills necessary for a range of creative and technical job roles within the media industry.
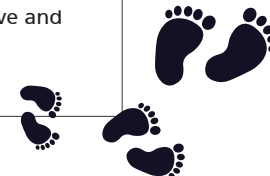
Computing Department
KS4 Curriculum Journey

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			COMPUTER SCIENCE				
UNIT 1	**UNIT 2**	**UNIT 3**	**UNIT 4**	**UNIT 5**	**UNIT 6**	**UNIT 7**	**UNIT 8**
System Architecture	Data Representation	Networks and network protocols	Network security and system software	Impacts of digital technology	Algorithms	Programming	Logic and languages
Architecture of the CPU. Common CPU components. Von Neumann Architecture CPU performance Embedded systems Primary Memory & Secondary storage	Units and binary numbers Binary and hexadecimal Character's Data representation of images and sound Lossy and lossless compression	The internet and wide area networks Local area networks Wireless networking Client servers and P2P networks Standard protocols and layers	Threats to computer systems and networks Identifying and preventing vulnerabilities Operating systems Utility software	Impacts of digital technology on wider society. Ethical and cultural issues Environmental issues Legislation relevant to Computer Science. Privacy issues	Computational thinking Searching algorithms Sorting algorithms Flowcharts Pseudocode Interpret, correct and complete algorithms	Programming fundamentals Sequence & selection Iteration Arrays Procedure's & functions Records & files Structured Query Language	Logic diagrams and truth tables Boolean logic Defensive design Errors and testing Translators and facilities of languages Integrated Development Environment
Formative assessment: end of unit test based on subject knowledge. Externally assessed written examination Paper 1 Computer Systems.	Formative assessment: end of unit test based on subject knowledge. Externally assessed written examination Paper 1 Computer Systems.	Formative assessment: end of unit test based on subject knowledge. Externally assessed written examination Paper 1 Computer Systems.	Formative assessment: end of unit test based on subject knowledge. Externally assessed written examination Paper 1 Computer Systems.	Formative assessment: end of unit test based on subject knowledge. Externally assessed written examination Paper 1 Computer Systems.	Formative assessment: end of unit test. Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.	Formative assessment: end of unit test. Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.	Formative assessment: end of unit test. Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.
Links to data representation and networks and how physical components work in conjunction with software. Progression to AS/A Level Computer Science.	Links to how information and data is sent across networks. Progression to AS/A Level Computer Science.	Links to Network security and how criminals can exploit vulnerable networks. Progression to AS/A Level Computer Science.	Links to networks and how criminals can exploit vulnerable networks. Progression to AS/A Level Computer Science.	Links to Network security through legislation such as Data Protection Act. Progression to AS/A Level Computer Science.	Links to Programming and how the algorithm can be transfer into a program Progression to AS/A Level Computer Science.	Links to Logic and languages and the importance of testing to ensure the program is robust and error free. Progression to AS/A Level Computer Science.	Progression to AS/A Level Computer Science.