

Enrichment and Personal Development		Links to Careers in Computing	Catholicity in the Curriculum
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.	Cybersecurity expert Computer programmer Cybercrime detective Social media analyst	Dignity: Pupils studying E-safety reflect on the dignity of the person and the common good by thinking about the impact of their actions online. The impact and consequences of cyberbullying, sexting and a person digital footprint.
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.	Primary school teacher Network engineer Video games designer	Dignity of work and participation and creation: Pupils consider the impact of new technology including Artificial Intelligence in terms of the ethical, cultural and social impact
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.	Software engineer Computer forensic specialist Graphic designer Media careers - video editor, graphics designer, programme editor	The common good: Pupils reflect of the benefits on new technology and dignity of the human person, eg considering privacy against security such as GPS tracking. Pupils consider the common good eg when programming driverless cars to make decisions Solidarity: Pupils consider the importance of charities in disaster relief.
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.	Military drone operator Computer forensic investigator Virtual reality developer Interior designer	Pupils study the ethical, cultural, legal and environmental issue associated with ICT. Creation of the environment: Pupils consider the impact of e waste and sustainability. Dignity of work and participation: Pupils consider the impact of working in e-waste facilities in third world countries. Common good: The positive impact of technology in the use of robotics in healthcare. Dignity of the human person: Protecting personal data cyber security issues.
Year 11	After school Code club – Opportunity for pupils to develop their programming skills further. Impact of digital technology on people's lives.	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)



Interdisciplinary
Learning



Progression of
learning

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



Holy Cross
CATHOLIC HIGH SCHOOL

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 Developing skills in internet searching and presenting information 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 (code combat).	Creative iMedia Developing skills in combining text and images. Creating products based on a scenario.	Developing Computer Science skills Greater understanding of how computers work. Developing computational thinking skills
<ul style="list-style-type: none"> Social networking and keeping yourself safe online Keeping your data safe Copyright Health and safety Cyberbullying Phishing Sexting 	<ul style="list-style-type: none"> Block programming selection, sequencing and iteration Developing flowcharts Variables Conditional logic Loops, random, if and else Physical programming BBC Micro: bit 	<ul style="list-style-type: none"> Inputs and outputs Central Processing Unit Storage devices Understanding binary Computer networks Convergence and new technologies 	<ul style="list-style-type: none"> Introduction to Kodu game development Developing game environments Programming concepts; sequencing, iteration, loops, conditional logic 	<ul style="list-style-type: none"> Designing and creating products Image and text manipulation Problem solving skills Creative and innovative thinking Developing visual identity 	<ul style="list-style-type: none"> Computational and logical thinking Encryption and cryptography Impact of ICT on society Drawing using 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.
Personal Development: E-Safety Unit Pupils look at the various ways hackers use scams to target people and how to protect ourselves from these attacks.		Understanding Computers Unit Geography: Pupils look at the impact of technology and how the current world is changing. Maths: Pupils use measurements when creating pixel images to demonstrate how images are represented. Pupils gain an understanding of the various storage units for storing data. English: Pupils look at the various communication methods used before the advent of computers and how enigma was used to send coded messages.		Computer science Maths: Pupils use measurements when creating shapes and images of flags in Python. Geography: Pupils look at how the impact of technology and new technology is changing our lives. They build an argument for and against these technologies.	
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. Skills 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)
<p>Creative Media in the media industry</p> <p>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.</p>	<p>Visual identity and digital graphics</p> <p>In this unit pupils will learn how to develop visual identities for clients.</p>	<p>Interactive digital media</p> <p>In this unit pupils will learn to design and create interactive digital media products for chosen platforms.</p>
<p>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.</p> <ul style="list-style-type: none"> Media industry sectors and products Factors influencing product design Pre-production planning Legal issues that affect media Distribution platforms and media to reach audiences 	<p>Apply the concepts of graphic design to create original digital graphics which incorporate your visual identity to engage a target audience.</p> <ul style="list-style-type: none"> 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 	<p>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.</p> <ul style="list-style-type: none"> Types of interactive digital media, content and associated hardware Create interactive digital media Review interactive digital media
<p>Formative assessment:</p> <p>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.</p>	<p>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.</p>	<p>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.</p>
	<p>All subjects (Exam techniques): Pupils analyse a scenario provided by the exam board and create a client brief based on their assumptions of what needs to be created.</p>	
<p>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.</p>	<p>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.</p>	<p>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.</p>

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 characters 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 Procedures & 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.	Formative assessment: end of unit test based on subject knowledge.	Formative assessment: end of unit test based on subject knowledge.	Formative assessment: end of unit test based on subject knowledge.	Formative assessment: end of unit test based on subject knowledge.	Formative assessment: end of unit test.	Formative assessment: end of unit test.	Formative assessment: end of unit test.
Externally assessed written examination Paper 1 Computer Systems.	Externally assessed written examination Paper 1 Computer Systems.	Externally assessed written examination Paper 1 Computer Systems.	Externally assessed written examination Paper 1 Computer Systems.	Externally assessed written examination Paper 1 Computer Systems.	Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.	Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.	Externally assessed written examination Paper 2 Computational thinking, algorithms and programming.
Maths: Pupils use measurements when referring to clock speed (Hertz) and cache size. History: Pupils look at the history of computing and how Von Neumann created the stored program concept.	Maths: Pupils use measurements when referring to memory in stage in terms of bit and bytes and well as conversions between binary and denary and Hexadecimal.		Personal Development: Pupils look at the various way hackers and the various scams that people use in targeting people and how to protect ourselves from these attacks.	Geography: Pupils look at how the impact of technology and new technology is changing our lives. They build an argument for and against these technologies.	Maths: Pupils use measurements when creating shapes in Python programming.	Maths: Pupils use measurements when creating shapes in Python.	
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. 