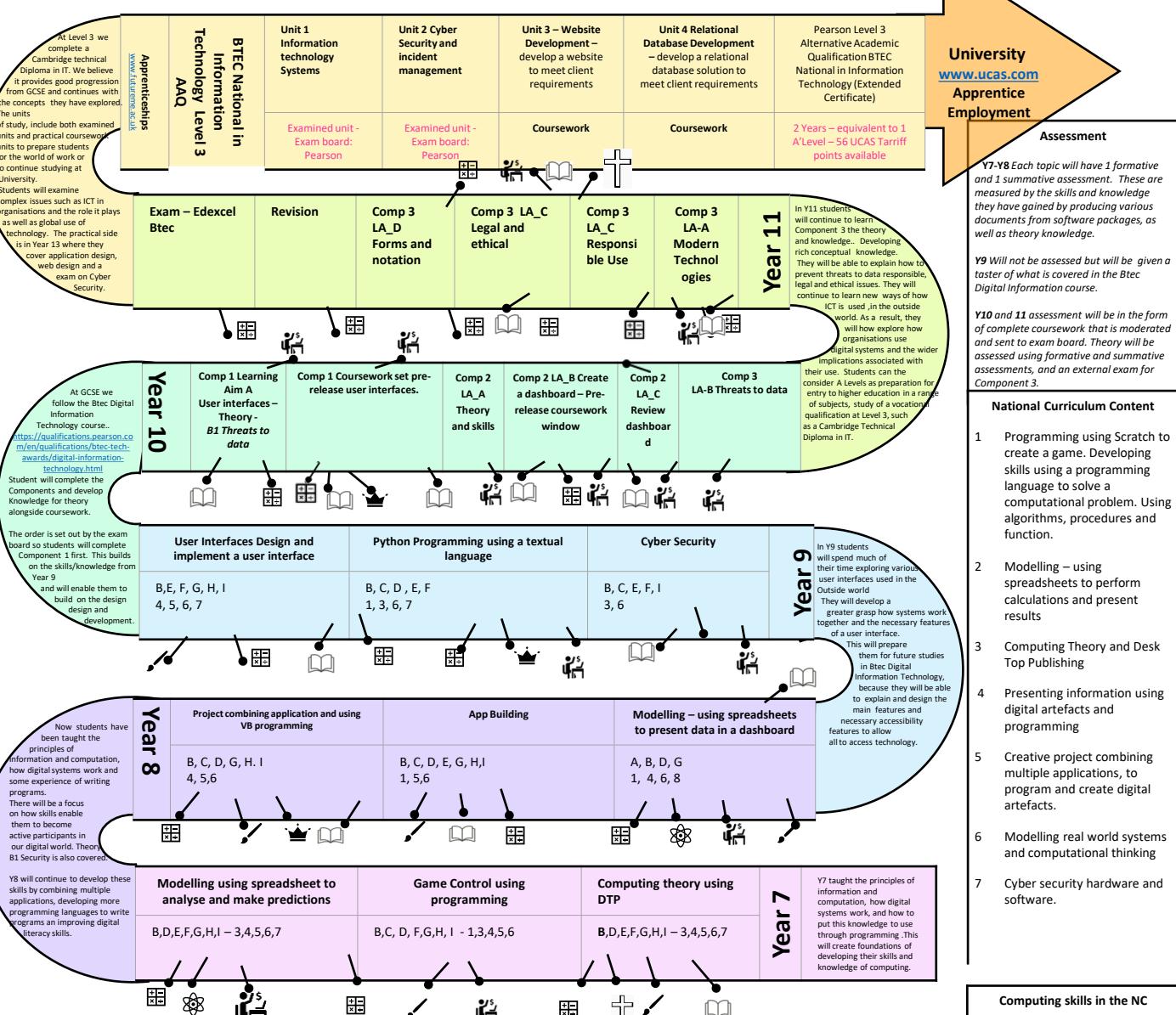


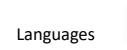
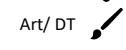
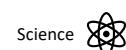
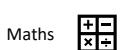
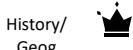


# ICT/Computing Journey

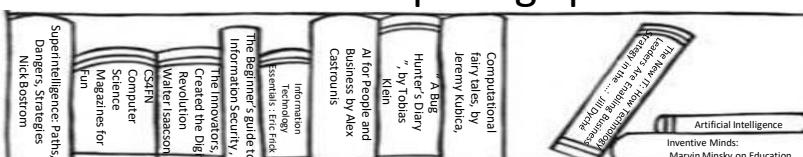
*"The advance of technology is based on making it fit in so that you don't really even notice it, so it's part of everyday life."*  
Bill Gates, Co-founder of Microsoft



## Curriculum links



## Read like a computing specialist





# Computing Learning Journey



## Computing Narrative for your learning journey

The Computing journey aims to inspire students with curiosity and fascination about the digital world. The curriculum aims to equip students with knowledge and technical skills in a practical learning environment through developing programming languages, modelling, presenting information, developing user interfaces and understanding the theory behind many computing topics. We aim for our students to have a good level of digital literacy and technical skills in order to be well equipped to enter the digital world we live in today. The Curriculum is developed from KS2 through to KS5 to ensure the students have continuity throughout their learning journey.

The **Year 7** journey at St. Aidan's involves using programming skills and knowledge to create a virtual game developing skills using a programming language to solve computational problems. Developing spreadsheet skills to model real world problems and use calculations to present results. As well as learning some knowledge of theory topics such as security, networks and the background of how computers operate using binary. They will present information using digital artefacts and combine multiple applications.

In **Year 8** students will develop skills combining various applications and use another programming language to create a mini project to present the results. They will then further develop the knowledge and skills needed for programming using a different programming language and enter into the world of app building and developing knowledge on user interfaces. Modelling skills will be developed further using spreadsheets to model real world systems and computational thinking to create pivot tables and charts to present information in a dashboard. Knowledge will be enhanced by learning various theory topics such as protecting the environment when using IT systems and external threats to data.

In **Year 9** students will further develop their knowledge of cyber security and how to prevent threats to IT systems. They will extend their programming skills using a textual language for programming such as, Python. They will then improve their knowledge of user interfaces and design and create an information using a GUI to prepare them for the next step in their education by progressing to BTEC Digital Information technology.

In **Year 10** we follow the exam board Pearson studying the qualification for the Btec Tech Award in Digital Information Technology. The award gives the learners the opportunity to develop sector-specific knowledge and skills in a practical learning environment. In year 10 we will cover the development of key skills that prove their aptitude in digital information such as project planning, designing and creating user interfaces and create dashboards to present and interpret data. They will follow the process that underpins effective ways of working in digital information technology, such as project planning, the iterative design process, cyber security, virtual teams, legal and ethical codes of conduct.

In **Year 11** students will build on Key stage 3 where they will have learned how to use technology responsibly. They will learn how organisations can use technology safely and about cyber security when working in a digital organisation. The knowledge and skills they develop taking this course will give them a basis for further study in a range of subjects including computing, IT, engineering, creative and scientific or to go onto an apprenticeship or entry-level employment where their understanding of technology will be relevant.

In **Year 12 and 13** we follow the exam board Pearson specification, due to its good progression from GCSE, practical nature and parallels to studying ICT/Computing at University. The BTEC National in Information Technology (Extended Certificate) Level 3 AAQ prepares them with high quality skills and knowledge for a successful future, either at University or in the world of work. Students will **cover** the fundamentals of IT systems, transmitting data, the ethical use of computers and the impact of IT systems online.. They will also learn about how individuals use information of various types and understand the legislation and regulation governing information that flows into and out of an organisation and the constraints and limitations that apply to it. They will develop various practical skills by designing and developing a website for an organisation and developing a relational database to meet a specific clients requirement. They will then learn about the solutions that can be used to prevent or deal with cyber security incidents resulting from these challenges. You will understand forensic procedures and systematic forensic analysis of a suspect system.

ICT/Computing is forever changing and rapidly, at St. Aidan's we ensure our students are ready to enter the digital capital of the world leave with the skills and knowledge to further their education or enter into the world of employment.

ICT & Computing Assessment Map:			
Year /Cycle	Sub Concept:	Curriculum assessed:	Assessment Type
Year 7 Cycle 1	Theory and desktop Publishing	Theory including parts of a computer, binary code, and networks – Computer Misuse Act	Formative
		Extended writing on Computer Misuse Act	Formative
		Theory including C2 – Law – Computer Misuse Act	Summative
Year 7 Cycle 2	Programming using blocks in Scratch	Programming using scratch – blocky code.	Formative
		Extended writing – Why are systems attacked and describe hackers that make the attacks	Formative
		Data flow diagrams D1, programming and B1 security of data – Why systems are attacked. Theory , and law C2-Computer misuse act.	Summative
Year 7 Cycle 3	Financial modelling in spreadsheets	Spreadsheets, using various formula and B1 security “ external Threats - Malware”.	Formative
		Extended writing - External Threats to data - Malware	Formative
		Data flow diagrams D1, programming and B1 security of data – why systems are attacked and Malware. Theory , and Law C2-Computer Misuse Act, Spreadsheets	Summative
Year 8 Cycle 1	Combining applications using various software programs.	User interfaces	Formative
		Extended writing – C1 -Protecting the environment using IT systems	Formative
		User interfaces – B1 security and all work covered in year 7	Summative
Year 8 Cycle 2	App building and programming	App building, user interfaces and security – external threats- phishing pharming DoS	Formative
		Extended writing on User Interfaces GUI	Formative
		App building, GUI user interface, B1 - security, C1 Protecting environment - knowledge from all previous units.	Summative
Year 8 Cycle 3	Spreadsheets - create a dashboard to present data	Spreadsheets – advanced formulae, creating a dashboard using pivot tables and charts.	Formative
		Extended writing - External data primary secondary - dashboards?	Formative
		All units covered and topics covered in y7 and 8.	Summative
Year 9 Cycle 1	Cyber security	Cyber security Theory B1 & B2	Formative
		Extended writing -Law C2 - Data Protection Act 2018	Formative
		Cyber Security and Data Protection Act 2018. All units covered and topics covered in y7 and 8.	Summative
Year 9 Cycle 2	Python programming using textual language.	Python programming skills and knowledge.	Formative
		Extended writing -B2 – Ethical Hacker and Penetration testing	Formative
		Programming knowledge, B2 Penetration testing. Cyber Security and Data Protection Act 2018. All units covered and topics covered in y7 and 8.	Summative
Year 9 Cycle 2	Develop a User Interface or an information system	Planning to create a user interface, B1- External threats to data – social engineering, man in middle, shoulder surfing	Formative
		Extended writing Design Principles	Formative
		All topics covered in 7, 8 and 9.	Summative

ICT & Computing Assessment Map:			
Year /Cycle	Sub Concept:	Curriculum assessed:	Assessment Type
Year 10 Cycle 1	Component 1	Design Principles	Formative
		Extended writing – Design Principles	Formative
		Pre-release exam coursework	Summative
Year 10 Cycle 2	Component 2	Data and spreadsheets	Formative
		Extended writing – Restricting Access	Formative
		Pre-release exam coursework.	Summative
Year 10 Cycle 3	LA_B and LA_A	B Security	Formative
		Extended writing -Ad Hoc Networks	Formative
		LA_B and Ad hoc networks	Summative
Year 11 Cycle 1	LA_A	LA_A Modern technologies	Formative
		Extended writing – A1 Cloud based software or traditional	Formative
		LA_A and LA_B	Summative
Year 11 Cycle 2	LA_C	LA_C Legal and Ethical – 1. Shared Data 2. Environmental	Formative
		Extended writing on Data Protection Act 2018	Formative
		LA_A, LA_B and LA_C	Summative
Year 11 Cycle 3	LA_D +Revision	LA_D Forms of notation + revision	
		LA_D summative	Summative
		Mock Exam	Summative
Year 12 Cycle 1	Unit 1 Fundamentals of IT	Mock questions from 1.1. to 1.4	Formative
		Extended writing -Law C2 - Data Protection Act 2018	Formative
		Unit 1 mock exam	Summative
Year 12 Cycle 2	Unit 2 global Information	Mock questions from 2.1. to 2.4	Formative
		Extended writing -Cyber security an incident management	Formative
		Unit 2 mock exam	Summative
Year 12 Cycle 3	Unit 6 - Coursework Unit 21 - Coursework	Unit 3	Formative
		Extended writing on Principles of website development	Formative
		Unit 3 LO1 coursework grade	Summative