



VIA DIVERSA VITA UNA – ONE LIFE, MANY PATHS



Computing curriculum map

“Computing is not about computers anymore. It’s about living” – Nicolas Negroponte

Curriculum text – *Computational Fairy Tales* by Jeremy Kubica

Yr	Intent	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
7	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions. Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems Understand how instructions are stored and executed within a computer system. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. 	Baseline testing and <u>Introduction to the network</u>	Introduction to Computer systems (Mapped to GCSE Computer Science 1.3, 7)	E Safety & Animation (Mapped to IMedia R086)	Visual Programming – Scratch (Mapped to GCSE Computer Science 2.2)	Microbits (Mapped to GCSE Computer Science 322)	Python Turtle (Mapped to GCSE Computer Science 2.2)
8	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions. Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]. Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems Understand how instructions are stored and executed within a computer system. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. Understand a range of ways to use technology safely, respectfully, responsibly and securely, including protecting their online identity and privacy; recognise inappropriate content, contact and conduct and know how to report concerns. 	Textual Programming – Python (Mapped to GCSE Computer Science 2.2)	Computer Hardware / Software (Mapped to GCSE Computer Science 1.3,7)	E Safety & Digital Photography – Photoshop (Mapped to IMedia R090)	Binary (Mapped to GCSE CS, 2.4)	Computer Networks (Mapped to GCSE Computer Science 1.4 Fundamentals of Computer Networks)	<u>Algorithms, Pseudocode and Textual Programming (Mapped to GCSE Computer Science 2.1</u>
9	<ul style="list-style-type: none"> Design, use and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. Understand several key algorithms that reflect computational thinking [for example, ones for sorting and searching]; use logical reasoning to compare the utility of alternative algorithms for the same problem Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems; make appropriate use of data structures [for example, lists, tables or arrays]; design and develop modular programs that use procedures or functions. Understand simple Boolean logic [for example, AND, OR and NOT] and some of its uses in circuits and programming; understand how numbers can be represented in binary, and be able to carry out simple operations on binary numbers [for example, binary addition, and conversion between binary and decimal]. Understand how instructions are stored and executed within a computer system; understand how data of various types (including text, sounds and pictures) can be represented and manipulated digitally, in the form of binary digits. Undertake creative projects that involve selecting, using, and combining multiple applications, preferably across a range of devices, to achieve challenging goals, including collecting and analysing data and meeting the needs of known users create, re-use, revise and re-purpose digital artefacts for a given audience, with attention to trustworthiness, design and usability. 	Introduction to Python Programming (Mapped to GCSE Computer Science 2.2)	<u>Algorithms, Pseudo code and flowcharts (Mapped to GCSE CS, 2.1 Algorithms)</u>	Graphics (Mapped to IMedia R082).	Fundamentals of Cyber Security (Digital Citizenship)	Binary Recap, Representing images and sound (Mapped to GCSE Computer Science 2.4, 2.6 Data Representation)	<u>Digital Citizen</u> , Ethical, Legal and environmental issues / Blogs (Mapped to GCSE CS, 1.8 Ethical, Legal and environmental)



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10 GCSE Computer Science	<ul style="list-style-type: none"> Develop their capability, creativity and knowledge in computer science, develop and apply their analytic, problem solving, design, and computational thinking skills Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns. 	Baseline test. Systems Architecture, Translators and Facilities, Memory, Computational Logic (Mapped to GCSE Spec 1.1.1-1.1.6, 2.5.4, 2.5.1-2, 1.2.1-2, 2.4.1-4)	2.1.1 –5 Algorithms, 2.3.5 Producing Robust Programs, 2.2.1,3,7,8,9,10 Programming Techniques	1.3.1-2 Storage, 1.7.1-2 Systems Software, 2.2.4,8 Programming Techniques, 1.4.1-6 Wired and Wireless Networks	2.3.1-6 Producing Robust Programs Formal Coding Assessment	1.5.1-6 Network Topologies, 2.6 Data Representation.	2.6.9-16 Data Representation SQL, Programming Development, 2.2.5-6 Programming Techniques
10 Creative i Media	<ul style="list-style-type: none"> Develop their capability, creativity and knowledge in digital media, develop and apply their analytic, problem solving, design, and computational thinking skills Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns. 	Unit R082 Create a Digital Graphic Coursework LO1 Research.	Unit R082 Create a Digital Graphic Coursework LO2 Plan LO3 Create	Unit R082 Digital Graphics Coursework LO3 Create	Unit R081 Pre-Production Skills Exam All LOs. 1 st attempt at exam in early June	Unit R081 Pre-Production Skills Exam All LOs. 1 st attempt at exam in early June Unit R092 Developing Digital Games Coursework LO1 Research	Unit R082 Create a Digital Graphic Coursework LO4 Evaluation Unit R081 Pre-Production Skills Exam All LOs. 3rd attempt at exam in early June
11 GCSE Computer Science	<ul style="list-style-type: none"> Develop their capability, creativity and knowledge in computer science, develop and apply their analytic, problem solving, design, and computational thinking skills Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns. 	1.8.1-6 Ethical, Legal, Cultural, Environment, Programming Skills Audit	1.8.1-6 Ethical, Legal, Cultural, Environment, Programming Skills Audit	NEA 20 hours	NEA 20 Hours	1.6.1-3 System Security. Revision	Revision
11 Creative i Media	<ul style="list-style-type: none"> Develop their capability, creativity and knowledge in digital media, develop and apply their analytic, problem solving, design, and computational thinking skills Understand how changes in technology affect safety, including new ways to protect their online privacy and identity, and how to identify and report a range of concerns. 	Unit R092 Developing Digital Games Coursework LO2 Plan Game LO3 Create Game	Unit R092 Developing Digital Games Coursework LO4 Evaluation Unit R081 Pre-Production Skills Exam All LOs. 2 nd attempt at exam in early January	Unit R081 Pre-Production Skills Exam All LOs. 2 nd attempt at exam in early January Unit R082 Create a Digital Graphic Coursework LO1 Research	Unit R082 Create a Digital Graphic Coursework LO2 Plan LO3 Create	Unit R082 Create a Digital Graphic Coursework LO4 Evaluation Unit R081 Pre-Production Skills Exam All LOs. 3rd attempt at exam in early June	
12 IT	Data and information Applications and effects Future developments Developing ICT solutions Skills; investigation and analysis; definition of requirements; design of a solution to meet a specification; selection and use of appropriate application software; testing and implementation of an ICT-related solution; preparation of documentation; evaluation; collaborative working.	Unit 1 – LO1 Computer Hardware & LO2 Understand Computer Software. Unit 2 – LO1 Where information is held global and how it is transmitted. LO2 Styles, classification and the management of global information.	Unit 1 – LO3 Business IT systems & LO4 Employability and communication skills with IT. Unit 2 – LO3 The use of global information and the benefits to individuals and organisations. LO4 Legal and regulatory framework governing the storage and use of global information.	Unit 1 – LO5 Ethical and operational issues and threats to computer systems Unit 2 – LO5 Process flow of information.	Unit 1 – Revision Unit 2 – LO6 Principles of information security and case study prep for exam	Unit 1 and 2 revision (exams May 2020)	Unit 6 – Digital Application Design – LO1Application design. LO2 investigate potential solutions for application developments
13 IT	Data and information Applications and effects Future developments Developing ICT solutions Skills; investigation and analysis; definition of requirements; design of a solution to meet a specification; selection and use of appropriate application software; testing and implementation of an ICT-related solution; preparation of documentation; evaluation; collaborative working.	Unit 6 Digital Application Design – LO3 generate designs for application solutions. LO4 Present application solutions to meet client and user requirements	Unit 6 Digital Application Design – Present application solutions to meet client and user requirements Unit 13 Social Media – LO1Digital marketing. LO2 Use of social media in a business	Unit 13 Social Media – LO3 Plan content and propose appropriate social media channels for digital marketing campaigns. LO4 develop social media digital marketing campaigns	Unit 22 Big data LO1 scope of Big Data. LO2 Process Big Data for business purposes	Unit 22 Big data LO2 and LO3 provide information resulting from processing Big Data	

The national curriculum frame work for computing is fully covered by the SRPA curriculum provision.