

GSA Curriculum Map 2023-2024: ICT, Business and Computing

We aim to develop students of ICT, Business and Computing who:

- build a coherent framework that prepares them for the demands of Computing and IT in the world today;
- benefit from a programme that supports progression into GCSE work while also incorporating wider skills and context to prepare for the world of work;
- develop a love for the subject that is embedded into each and everyone one of our students' lives on a day-to-day basis.

Year 7						
	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
Topic Covered	Introduction unit	Using computers safely and effectively	PPT skills	Micro bits - Learning to code	Computational thinking	Scratch Programming
Knowledge deepened	Introduction to IT systems Correct use of email Explain how to stay safe online	Uses of hardware and Software Recognise social media safety	Appropriate uses of PPT Recognise appropriate animations, transitions to use for a given purpose	Recognise the key elements of a flowchart Identify the key parts of a microbit program	How logic is used What an algorithm is Know the difference between lossy and lossless compression How abstractions are used How decomposition can be used to break down problems Recognise logical questions	Promote computational thinking and problem solving skills; creative teaching and learning; self-expression and collaboration; and equity in computing. Sequencing Variables Selection Operators Count-controlled iteration
Skills developed	Microsoft basics - PPT, Word and Excel Google drive & classroom Use of email - send, reply, attach etc	How to stay safe online How to use social media safely PPT skills Word processing skills Spreadsheet skills	PPT skills - basic introduction skills and use of consistent layout, animations etc	Flowcharts Algorithms Programming a Micro-Bit Executing instructions Using and applying code	Develop algorithms to demonstrate key knowledge	Movement Lives and scoring Adding a new level Randomising Shooting and jumping Adding scores
Links to National Curriculum (Links)	NC: 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 NC; understand the hardware and software components that make up computer systems, and how they communicate with one another and with		NC: to make appropriate use of data structures and develop modular programs that use procedures or functions NC: undertake creative projects that involve challenging goals NC; create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability		NC: Design, use, and evaluate computational abstractions that model the state and behaviour of real-world problems and physical systems. NC: Use two or more programming languages, one of which is textual, to solve a variety of computational problems; make appropriate use of data structures such as lists, tables or arrays; design and develop modular programs that use procedures or functions.	

	other systems		NC: Understand simple Boolean logic (such as AND, OR and NOT), and some of its uses in circuits and programming.
Flagship Link			
Cross Curriculum Connections	E-Safety - Links to Y8 Personal Development HT3/4 where students learn about forming respectful relationships and about bullying (cyberbullying link)		Programming - Links to Y8 D&T HT3/4 (Apply computing and use electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components)
Resources to support learning	<p>The impact of IT on society: https://www.bbc.co.uk/bitesize/guides/zbxbkqt/revision/1</p> <p>E Safety: https://www.bbc.co.uk/bitesize/guides/zrtrd2p/revision/1</p> <p>How technology has changed communication and collaboration: https://www.bbc.co.uk/bitesize/guides/zq6g87h/revision/1</p> <p>Search engines: https://www.bbc.co.uk/bitesize/guides/zpkhqv4/revision/1</p>	<p>Microbit projects: https://microbit.org/projects/</p> <p>PPT skills: https://www.teach-ict.com/software_skills/PowerPoint07/general_tasks/introduction/introductionppt07.pdf</p>	<p>Control and sequencing: https://www.bbc.co.uk/bitesize/guides/zfjsgk7/revision/1</p> <p>Computational thinking: https://www.bbc.co.uk/bitesize/guides/zp92mp3/revision/1</p> <p>Introduction to programming: https://www.bbc.co.uk/bitesize/guides/zts8d2p/revision/1</p> <p>Scratch: https://scratch.mit.edu/</p>

Year 8

	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
Topic Covered	Using computers safely and effectively	Computer crime and cyber security	Python programming Skills	Application of Python Programming	Computer Networking	Creating Graphics
Knowledge deepened	<p>The importance of creating a file and folder structure</p> <p>How to say safe online</p> <p>Recognise how social media safety impacts our lives</p> <p>How Password protection works</p>	<p>Profiling</p> <p>Data Protection Act</p> <p>Computer Misuse Act</p> <p>Hacking</p> <p>Malware</p> <p>Protection methods such as firewalls, anti-malware, and password authentication</p>	<p>What we mean by user</p> <p>Inputs</p> <p>Different data Types & casting</p> <p>Identify different data Structures (Lists/Arrays)</p> <p>How repetition affects a program</p>	<p>The use of For Loops in Python Programming</p> <p>Advanced Selection (If Else Statements in Python</p> <p>Application of Python in real world project</p>	<p>What the Internet does</p> <p>define the uses of LANs, WANs & Networking</p> <p>Hardware</p> <p>Identify different methods of Connection (Wired and Wireless)</p> <p>Factors affecting network performance and network</p>	<p>The difference between Vector Graphics and Bitmap Graphics</p> <p>Planning and creating vector graphics. Key ideas of layering, grouping, and combining objects are introduced. You should be familiar with how markup is used</p>

	identify the implications of hacking Identify ways to add encryption				security Networks, the internet, and associated technology (network, hub, server, router, ISP, protocol, mainframe, personal computer, stand-alone, HTTP, wired, wireless, 3G, 4G, 5G, WiFi, bandwidth)	to describe and store vector images and the key reasons why vector images can be scaled without loss of image quality.
Skills developed	Create folders and organise drives	Comprehension and Critical Thinking	Problem Solving Selection Reflection Programming	Computational Thinking Problem Solving Selection Reflection Programming	Network security. Data management. Computer programming. Computer networking and communication tools.	Graphic design and Photoshop Skills
Links to National Curriculum	NC: 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 NC: Understand the hardware and software components that make up computer systems, and how they communicate with one another and with other systems.		NC: Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems		NC: Undertake creative projects that involve selecting, using, and combining multiple applications NC: 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 NC: Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability	
Flagship Link	E-Safety - Links to Y8 Personal Development HT3/4 where students learn about forming respectful relationships and about bullying (cyberbullying link)					
Cross Curriculum Connections			Programming - Links to Y8 D&T HT3/4 (Apply computing and use electronics to embed intelligence in products that respond to inputs, and control outputs, using programmable components) Internet Safety Day - Links to Y8 Personal Development HT3/4 where students learn about forming respectful relationships and about bullying (cyberbullying link) Spreadsheet Modelling - Links to Y8 Maths in HT6 (Statistical diagrams, averages, ranges and data project)			
Resources to support learning	The impact of IT on society: https://www.bbc.co.uk/bitesize/guides/zbxkqt/revision/1 E Safety: https://www.bbc.co.uk/bitesize/guides/zrtrd2p/revision/1		Introduction to programming: https://www.bbc.co.uk/bitesize/guides/zts8d2p/revision/1		Graphics software: https://www.bbc.co.uk/bitesize/guides/zv2v4wx/revision/1	

	<p>How technology has changed communication and collaboration: https://www.bbc.co.uk/bitesize/guides/zq6g87h/revision/1</p> <p>Search engines: https://www.bbc.co.uk/bitesize/guides/zpkhpv4/revision/1</p>		
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Year 9						
	Autumn 1 (HT1)	Autumn 2 (HT2)	Spring 1 (HT3)	Spring 2 (HT4)	Summer 1 (HT5)	Summer 2 (HT6)
Topic Covered	Spreadsheet modelling	Spreadsheet modelling	HTML & Web design	HTML & Web design	App development	
Knowledge deepened	<p>Introduction to spreadsheets The main uses, key features and how spreadsheets are used in business Identify the basic structure of a spreadsheet columns, rows, cells, and cell references in spreadsheet software Use cell references Use the autofill tool</p>	<p>How WhatIF scenarios work What conditional formatting is and how to apply it to a spreadsheet model How to enhance a spreadsheet by adding validation as well as applying graphs and charts to demonstrate different ways to display data Use conditional formatting</p>	<p>How websites are displayed within a browser using HTML and CSS How websites are requested and delivered to our computer via the internet and the World Wide Web How to create the structure of a website using HTML and change the styling using CSS</p>		<p>Familiarise themselves with the coding environment and have an opportunity to build on the programming concepts they used in previous units before undertaking their project. Customise GUI elements to meet the needs of the user. Recognise that events can control the flow of a program Decomposition to break down a large problem into more manageable steps</p>	
Skills developed	<p>Spreadsheet structures Basic formula using *, -, +, / Functions - SUM, MIN, MAX, AVERAGE Analyse data</p>	<p>What IF Conditional formatting Validation Graphs/Charts</p>	<p>Scenario and Market Research Market Research - Primary Research Branding & HCI Business Plan</p>	<p>Introduction to HTML and REPL Debugging Adding Multimedia to a Website Adding CSS to a Website Adding Tables and Hyperlinks to a Website Multiple Web Pages</p>	<p>Introduction to APP lab Event driven programming Error Detection in Programming Decomposition and User Driven Inputs Build an App with Block Programming</p>	<p>App project - creating an app for the business</p>
Links to National Curriculum	<p>NC: Undertake creative projects that involve selecting, using, and combining multiple applications</p>		<p>NC: Undertake creative projects that involve selecting, using, and combining multiple applications</p>		<p>NC: Use two or more programming languages, at least one of which is textual, to solve a variety of computational problems</p>	

<p>(Links)</p>	<p>NC; 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</p> <p>NC; Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</p>	<p>NC; 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</p> <p>NC; Create, reuse, revise and repurpose digital artefacts for a given audience, with attention to trustworthiness, design and usability</p>	
<p>Flagship Link</p>	<p>Computer Science, Maths, Science - Graphs</p>		
<p>Cross Curriculum Connections</p>	<p>Spreadsheet Modelling - Links to Y8 Maths in HT6 (Statistical diagrams, averages, ranges and data project)</p>		
<p>Resources to support learning</p>	<p>Spreadsheets: https://www.bbc.co.uk/bitesize/guides/zdydmp3/revision/1</p> <p>Displaying information: https://www.bbc.co.uk/bitesize/guides/zksk7ty/revision/1</p> <p>Modelling: https://www.bbc.co.uk/bitesize/guides/zyqfr82/revision/1</p>	<p>HTML: https://www.bbc.co.uk/bitesize/guides/z993tv4/revision/1</p> <p>Web pages and web apps: https://www.bbc.co.uk/bitesize/guides/znkqn39/revision/1</p>	<p>App lab: https://code.org/educate/applab</p> <p>App lab projects: https://studio.code.org/projects/public</p>