

Hexham Middle School

Progression of Age-Related Expectations

Computing	Year 5	Year 6	Year 7	Year 8
Computer Science	<p>I can design a program based on my own ideas and write this in a block-based language such as Scratch.</p> <p>I can experiment with computer control applications and use simple computer control and/or sensors with products like micro:Bits</p> <p>I can plan a solution to a problem using decomposition.</p> <p>I can use sequence, selection and repetition in programs.</p> <p>I can write a program that accepts keyboard and mouse input and produces output on screen and through speakers.</p> <p>I can explain a rule-based algorithm in my own words.</p> <p>I can use logical reasoning to detect errors in algorithms.</p> <p>I can understand how data can be represented and transmitted.</p>	<p>I can describe how early computing helped with codebreaking.</p> <p>I can explain the historical importance of Bletchley Park in WWII.</p> <p>I can identify key figures in computing history and their contributions</p> <p>I can discuss some ways in which data is stored, transmitted, and used in real-world use cases and simple applications.</p> <p>I can describe the role of RFID, barcodes and QR coded in data management.</p> <p>I can provide examples of how big data is used in decision-making.</p> <p>I can describe how internet IP addresses and data packets work.</p>	<p>I can identify and explain the function of computer hardware components.</p> <p>I can describe the interaction between storage, memory, and processors.</p> <p>I can compare different types of hardware and their uses.</p> <p>I can appreciate the importance and application of Boolean logic based on computer hardware and how logic gates are used in computing processes.</p> <p>I can identify the outputs on AND, OR and NOT gates given their inputs.</p> <p>I can produce block-based code using sequence, selection, repetition, and variables.</p> <p>I can debug and improve existing Scratch programs. I can plan, design, and implement a game using Scratch programming.</p>	<p>I can define a network. I can identify the roles of common network hardware.</p> <p>I can explain the components of a network and how they interact.</p> <p>I can differentiate between wired and wireless networks and their advantages.</p> <p>I can describe the role of network protocols in communication.</p> <p>I can write Python programs using variables, loops, and conditionals.</p> <p>I can debug and enhance simple linear Python code for specific functions.</p> <p>I can convert numbers and text into binary.</p> <p>I can explain how large data sets are represented and managed.</p>

		<p>I can encode and decode messages using basic cipher techniques.</p> <p>I can create my own cipher and challenge others to decode it.</p>	<p>I can test my game with others and incorporate feedback.</p>	<p>I can explain why binary is used in computing</p>
Information Technology	<p>I can use and combine a range of programs on multiple devices to achieve particular goals.</p> <p>I can design and create products on a computer in response to a given goal.</p> <p>I can analyse and evaluate information working with text, audio, images or video. I can analyse information, perhaps summarising this.</p> <p>I can use good keywords and filters to make more effective use of a standard search engine.</p> <p>I understand that search engines use a copy of the web to select and rank results.</p> <p>I can reflect on the importance of citing all sources and how to write bibliographical citations for online sources.</p>	<p>I can create a simple digital presentation using presentation software</p> <p>I can design and modify simple 3D objects using CAD software such as TinkerCAD.</p> <p>I can create a 3D model of an existing object.</p> <p>I can create a 3D model based on a planned design from a specification.</p>	<p>I can use spreadsheets to organise and analyse data.</p> <p>I can apply formulas and functions to perform quick calculations and manage datasets.</p> <p>I can create charts and graphs to visually represent data.</p>	<p>I can use web publishing software to create a website with meets a design brief.</p> <p>I can create a simple web page using foundational HTML elements.</p> <p>I can optimize web pages for navigation and user experience.</p>
Digital Literacy	<p>I can demonstrate that I can act responsibly when using the internet which includes using strong passwords to protect my identity online.</p>	<p>I can explain the importance of encryption in modern technology.</p>	<p>I can discuss potential applications and implications of AI and wearable tech.</p> <p>I can assess digital artefacts for their credibility.</p>	<p>I can develop a Python project that solves a real-world problem or serves a useful function.</p>

	<p>I can discuss the consequences of particular behaviours when using digital technology.</p> <p>I know what spam is, the forms it takes, and then identify strategies for dealing with it.</p> <p>I know that photos can be altered digitally. I consider the creative upsides of photo alteration, as well as its power to distort our perceptions of beauty and health.</p> <p>I understand that video is really a series of still images.</p>	<p>I can describe strategies to protect against brute force attacks.</p> <p>I can explain the importance of strong passwords in cybersecurity.</p> <p>I can evaluate and improve the effectiveness of digital communication.</p> <p>I can create digital posters and presentations with clear messaging.</p> <p>I can use design principles to make digital content appealing.</p> <p>I can explain how collaboration tools enable shared working.</p> <p>I can collaborate on shared digital projects responsibly.</p>	<p>I can create a blog to promote a cause, ensuring accurate and ethical use of sources.</p> <p>I can identify the primary function of key pieces of software.</p>	<p>I can understand what UX (User experience) and good design principles are and how to apply them to creating a digital website.</p> <p>I can evaluate the ethical implications of technology use, including privacy and data security.</p> <p>I can explain the concept of the digital divide and propose solutions to address it.</p> <p>I can discuss the importance of responsible online behaviour and its impact on others.</p>
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