Year 9 Curriculum Plan
Computing
IT   Computer Science Digital Literacy

Threads:

We use threads to signpost groups of units that link to one another, that together build a common body of knowledge over time. We use the term 'thread' to help us bring to mind the visual concept of a thread weaving through the curriculum:

Algorithms & data structures	Artificial intelligence	Computer systems	Creating media	Data and information	Design and development	Effective use of tools	Impact of technology	Networks	Programming	Safety and security

	Autumn 2 9.1 - Theme Park project (visual identity and graphic design) Some elements of DL	Autumn 1 9.2 - Python Programming	Spring 1 9.3 - Computer crime and cyber security	Spring 2 9.4 - Data	Summer 1 9.5 - Issues and impact	Summer 2 9.6 - Creating multimedia Some elements of DL
PRIOR LEARNING	**Unit 7.2 – Digital media** **Unit 8.2 – App Design** **Unit 8.4 - Animation** Students will build on their prior learning from units 7.2, 8.2 and 8.4 when they learnt how to respond to a client brief and how to create graphical designs that incorporate visual identity using software. **Threads**: Creating media Effective use of tools	**Unit 7.5 - Block-based programming** **Unit 8.2 - App Development** Students will build on units 7.5 and 8.2 when they learnt selection, sequence, and iteration through block-based programming. **Threads**: Programming	**7.1 – UCSER** **8.1 – Computer systems** **8.3 – Networks** Students will build on their prior learning from units 7.1, 8.1, and 8.3 when they explored online safety, cyber security, internal computer components, system architecture, and network functionality, having already gained insights into staying safe online, practicing digital citizenship, understanding the internal workings of computer systems, and comprehending how networks operate along	**7.3 and 8.1 – Understanding computers 1 and 2** Students will build on their prior learning from units 7.3 and 8.1 when they were introduced to computer systems and binary numbers; internal components and data representation. **7.2 and 8.5 – Introduction to spreadsheets and Advanced spreadsheets** Students will build on their skills from units 7.2 and 8.5 when they developed skills in spreadsheet structure, formulae, and functions and advanced data manipulation techniques.	**7.1 – UCSER** Students will build on their prior learning from unit 7.1 when they learned about e-safety and digital citizenship. **8.1 – Understanding computers 2** Students will build on their prior learning from unit 8.2 when they learned about computer systems. **8.3 - Networks** Students will build on their prior learning from unit 8.3 when they explored computer network functionality and cyber security.	This is a big project that ties together elements from many of the previous units covered in Years 7-9: **7.2 – Digital media** Students will build on their prior learning from unit 7.2 when they were introduced to storyboards, responding to client briefs and visual identity. **8.2 – App design** Students will build on their prior learning from unit 8.2 whey created storyboards and incorporated design elements suitable for a target audience.

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			with their advantages and disadvantages. **Threads**: Networks Safety and security	**Threads**: Creating media Effective use of tools	**Threads**: Creating media Effective use of tools	**8.4 – Creating a digital animation** Students will build on their prior learning from unit 8.4 when they learned various animation techniques and how to use assets effectively. **9.1 – Theme Park project: visual identity and graphic design** Students will build on their prior learning from unit 9.1 when they developed their understanding of visual identity and created a variety of multimedia.
KNOWING WHAT	*Visual identity – importance and elements *Target audience – importance and how to appeal to *Effective logo design *Radio scripts *Brochure design *Interactive multimedia presentation to showcase the artefacts for the Theme Park project	*What is a computer program? *Where is Python used? *Input and output in Python *Data types and variables *Functions *Lists *Selection *Iteration *Debugging – syntax and logical errors	*Data – its value; what is collected and why; privacy policies; GDPR *Social engineering *Hacking techniques *Importance of the Computer Misuse Act *Malware – categories and how they work *Network cyber threats – risks posed and preventing	*Binary – what it is and how to change between binary and decimal *Units of computer storage (bytes, kilobytes, megabytes, gigabytes, terabytes) *Digital images (pixels) *Colour intensity (sequence of bits) *Manipulating images *Sound representation and sampling	*Sourcing content responsibly *Using technology responsibly *Technology and the environment *Technology and the law *Moral dilemmas	*Creating a microsite from a given brief *Content organisation *User experience *Accessibility features *Testing and evaluation *Embedding audio, images, real-time features and graphical links and navigation
KNOWING HOW…	*Explain the importance and elements of visual identity. *Identify the target audience and explain how to appeal to them. *Design effective logos. *Write and use radio scripts.	*Explain what a computer program is and its purpose. *Identify areas where Python is used in real-world applications. *Use input and output functions in Python to interact with the user.	*Understand why companies want data and how they collect and use it. *Explain why privacy policies are important and what GDPR is.	*Explain how and why data is represented in binary *Convert numbers between binary and decimal systems *Identify data sizes *Explain image resolution and pixel density	*Describe how to source content responsibly *Describe how to practice good digital citizenship, digital footprint and manage cybersecurity hygiene *Recognise technology's environmental impact;	*Design and build a microsite that meets specific requirements of a client brief *Logically structure and organise content

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	*Create and design brochures. *Develop interactive multimedia presentations to showcase artefacts for the Theme Park project.	*Define and use different data types and variables in Python programs. *Create and use functions to organize and reuse code in Python. *Define, create, and manipulate lists in Python. *Implement selection (if-else statements) in Python to control the flow of the program. *Use iteration (loops) to repeat actions in Python. *Debug Python programs by identifying and fixing syntax and logical errors.	*Know how to spot and avoid social engineering tricks. *Describe common hacking methods and how to protect against them. *Explain why the Computer Misuse Act is important for cyber security. *List types of malware, how they work, and how to protect against them. *Compare different cyber threats to networks and how to prevent them.	*Explain how bit depth affects image quality *Explain sampling rates and bit depth in digital sound representation	promote sustainable practices and reduce personal tech-related carbon footprint *Explain relevant tech laws *Identify ethical issues in tech and discuss moral dilemmas	*Embed audio, images, real-time features, graphical links and navigation *Implement features that make the site accessible *Test the functionality and performance of the microsite and evaluate its effectiveness
ASSESSMENT	Two knowledge checks (practical): 1.Describe and develop visual identity for a selected client brief (brochure) 2.Design and develop an interactive digital media product (presentation)	Two knowledge checks (practical): 1.Planning an interactive quiz program 2.Coding the interactive quiz program	Two knowledge checks (theory): 1.Cyber threats and security basics 2.Understand computer legislation	Two knowledge checks (theory): 1.Binary and ASCII 2.Digital images and sound	One knowledge check (theory): 1.Analyse and evaluate if computers have made the world better or worse	Three knowledge checks (practical): 1.Describe and develop visual identity for a selected client brief 2.Design and develop an interactive digital media product 3.Understand the purposes of video as a media product and reflect on the techniques used to create an effective video