

Year 9 ICT Curriculum Overview



Year 9		HT1 Sept – Oct (8 weeks)	HT2 Nov – Dec (6 weeks)	HT3 (Jan – Feb (6 weeks)	HT4 Mar – Apr (6 weeks)	HT5 Apr – May (6 weeks)	HT6 Jun – Jul (6 weeks)
Topic		Cybersecurity	Data Science	Animations	Physical Computer Programming	Python Programming with Sequences of Data	Representations: Going Audiovisual
Why this and why now?	To take learners on a journey of discovery of techniques that cybercriminals use to steal data, disrupt systems, and infiltrate networks. The learners will start by considering the value their data holds and what organisations might use it for. They will then learn about social engineering and other common cybercrimes, and finally look at methods to protect against these attacks.	In this unit, learners will be introduced to data science, and by the end of the unit they will be empowered by knowing how to use data to investigate problems and make changes to the world around them. Learners will be exposed to both global and local data sets and gain an understanding of how visualising data can help with the process of identifying patterns and trends.	In this unit learners will be introduced to animations and how basic animations are created. Animation is used across a wide variety of interactive formats and this unit of work will explore this. In creating an animation learners must sequence information into an appropriate order just in the same way that programming does. This is another method of improving learners' ability to sequence which will help them in the computing course at KS4.	This unit builds on the programming units done in year 7 & 8. It will allow the learner to use their programming skills and visually see how that programming works on a piece of hardware. The learner will use skills required for the GCSE computing course in KS4.	Building on the introduction to Python earlier in yr8 and the block building in yr7. Pupils will begin to use more advanced features of this text-based language. This allows them to progress their programming skills, so they can successfully complete some areas required in the GCSE computing course.	In this unit learners will be introduced to Audiovisual techniques and how basic audiovisual projects are created. Audiovisual techniques are used across a wide variety of interactive formats and this unit of work will explore this. This unit of work allows the learner to develop skills that they will use in both KS4 pathways. This unit builds on the material from the Year 8 unit, 'Representations: from clay to silicon'.	
What is the essential knowledge that needs to be remembered?	The rise in cybercrime and what is being done to address the rise in the new type of criminals. Learners will be able to understand why data is valuable to organisations and why criminals are eager to access this. Learners are taught about the legality of obtaining and storing data through legislation like GDPR and the ongoing task to keep data secure.	Learners are introduced to the concept of data collection, storage, and manipulation to create useful information in which to make informed choices. Learners will be able to differentiate between data and information and the processes which need to be undertaken to make data meaningful.	Learners will be able to create, move, rotate objects. They will be able to insert frames and key frames to the animation creating a timeline of events. Looping will also be used. Learners will be able to edit and modify the animation. They will be able to play, pause and stop the animation. Learners will also be able to apply different colours and group individual objects.	Being able to program a piece of hardware is an essential skill for learners who wish to do computing at KS4. Learners will be able to use code to make a machine do a given task. Students will be able to see the physical output of the coding they are using. Learners will use new hardware, and this will broaden the experience. Learners will also use their programming skills to modify and adapt programming for a different output. A key part of this is spotting syntax errors will be a skill that is developed.	Learners need to be able to decompose a larger problem into smaller subproblems. Identify when/how lists can be used in a program and understand that a collection of related elements is referred to by a single name. Learners will also need to know that a subroutine is a group of instructions that will run when called by the main program or Vector graphics can be used to design anything from logos and icons to posters, board games, and complex illustrations. Through this unit, learners will be able to better understand the processes involved in creating graphics and will be provided with the knowledge and tools to create their own. other subroutines and to use them.	Learners will be able to describe how digital images are constructed. They will be able to identify and understand key terms such as resolution, pixilation, and colour depth. They will also be able to identify how colour is created in the digital image. Learners will be able to edit images and explain how this can influence the arithmetic operators. Learners will be able to identify that sound is a wave and explain the functions of different types of hardware. They will also be able to explain how sound is represented by a sequence of bits. Learners will also be able to identify	

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						<p>how sound quality can be improved.</p> <p>Learners will be able to identify that both images & sound are representations of binary data.</p>
What is the assessment intent and how will you assess?	Assessment will be a summative assessment based on topics learned. Keeping data safe, social engineering & Bots	Each course is structured around a series of units, providing young people with multiple opportunities to learn, do and review. Each unit leads to certification for that module.	Assessment will be project based with learners producing an animation of their own. This will be Peer and Teacher assessed against a pre-determined Rubric.	Assessment will be a summative assessment based on topics learned. There will also be an ongoing formative assessment based on student work. This will be both Peer and Teacher led	Learners will complete worksheets in each lesson to allow for continues formative assessment and a summative assessment task at the end of the unit	Assessment will be a summative assessment based on topics learned.
What should the end point look like?	Learners will be confident to follow coding protocols and techniques to be able to create a successful piece of code to meet the needs of the user and to consider user feedback to improve their work.	Learners will be exposed to both global and local data sets and gain an understanding of how visualising data can help with the process of identifying patterns and trends.	Learners will be able to produce an animation using the skills they have learned in this unit of work. Learners will be able to create and modify a moving animation to a set of criteria.	Learners will be able to programme hardware using coding skills developed. Students will be able to identify why the code works and spot any syntax errors.	Learners will complete a summative assessment task at the end of the unit.	Learners will be able to identify and understand key terms such as resolution, pixilation etc. when analysing images. Learners will be able to adapt and change images to ensure they are Fit for Purpose. Learners will create and edit a sound wave. Learners will be able to identify how image and sound can be represented digitally.
Wider Curriculum Links	The learning will link to current affairs – GREAT Lives and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science	The learning will link to current affairs – GREAT Lives, and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science	The learning will link to current affairs – GREAT Lives, and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science; Art	The learning will link to current affairs – GREAT Lives, and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science	The learning will link to current affairs – GREAT Lives, and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science	The learning will link to current affairs – GREAT Lives, and the world outside of school. Numeracy and Literacy skills will be used as well as references to technological developments, historical events, and geographical areas. Curriculum links to: Maths; English; Science; Art; Music
How does it cover the NC?	The topic meets the NC statement requirements for strands 3.9	The topic meets the NC statement requirements for strands 3.7	The topic meets the NC statement requirements for strands 3.8	The topic meets the NC statement requirements for strands 3.1/3.2/3.3/3.6	The topic meets the NC statement requirements for strands 3.1/3.2/3.3/3.6	The topic meets the NC statement requirements for strands 3.1/3.2/3.3