



Curriculum Overview – Year 7 Computing & Digital Literacy

Unit Title	Learning	How can parents best support?
TERM ONE Cyber Wisdom	<ul style="list-style-type: none">• Understand how to successfully log on to the academy network using a secure password.• Identify what the H & L Drives are used for.• Understand the importance of file management.• Identify several methods of communicating with friends and family using the internet.• Understand possible threats to an individual's health and safety when using a Computer Science suite.• Understand possible threats to computer systems.	Encourage students to use their knowledge learnt from this unit and apply it to technology used at home. E.g. using strong passwords, identify methods of keeping themselves and others safe from various threats when using social media.
 Boolean Logic	<ul style="list-style-type: none">• Understand how Boolean operators can focus a search.• Identify which operators are used to represent Boolean expressions.• Understand why data is converted into Binary format.• Convert from Binary to Denary.• Understand how binary can be used to represent images, text and numbers.	<p>Boolean logic is a form of algebra where all values are either True or False. Boolean logic uses algebra and algebraic expressions. Encourage students to identify what the following symbols are used for < , > , <> , = , <= , >=.</p> <p>Students can type 'Boolean Logic KS3 Bitesize' into a web browser to research more on this topic outside of lesson time.</p>

- Understand how bit depth can affect the file size and quality of data.
- Understand what encryption is.

TERM TWO






Algorithms

Lower:

- Identify everyday situations where computer control is used.
- Produce flowchart-based solutions for control systems that include sequences and loops.
- Understand the effect of Sequence, Selection and Iteration in a computer program.
- Understand how Decomposition and Abstraction may be used to solve problems.
- Understand how different symbols represent actions in a flowchart.
- Produce control solutions for problems that include variables.

Encourage students to create their own flowcharts at home on paper to develop their knowledge of the symbols used. Flowcharts can be made for any scenario such as: brushing teeth routine, making a cup of tea, getting ready for school.

Look at examples in everyday life of where algorithms are used. Particularly look at appliances in your kitchen and what algorithms may be used to control these.

Symbol	Name	Function
	Start/end	An oval represents a start or end point
	Arrows	A line is a connector that shows relationships between the representative shapes
	Input/Output	A parallelogram represents input or output
	Process	A rectangle represents a process
	Decision	A diamond indicates a decision

<p>Block based Programming</p>	<ul style="list-style-type: none"> • Understand the programming concepts of inputs, processes and outputs. • Understand manual and automatic user interaction, identifying why these would be used. • Complete a range of how-to tasks using block based programming in Scratch. • Design and create a suitable algorithm to create a game in Scratch using characters, objects and an interactive background. • Understand conditions, which can affect a game such as lives and timings. 	<p>Scratch is a visual programming language made specifically for creating animations/games. It is designed to be accessible for children and enjoyable for anyone. Scratch is available to download on PC without charge. Students are encouraged to do this to further develop their skills outside of lesson time.</p>
<p>TERM THREE</p> <p>Physical Computing</p>	<p>Lower:</p> <ul style="list-style-type: none"> • Describe a range of programming techniques such as <i>selection, sequence and iteration</i>. • Understand how hardware can be controlled using user created software. • Understand how numerous outcomes can be added to a system using IF, ELIF and ELSE. • Understand the impact of debugging to test a product in relation to its user. • Create variables to control outputs such as LEDs in Microbit to display strings and images. 	<p>Students can access https://microbit.org/ at home. Clicking 'let's code' on the microcode editor section provides students with tutorials they can follow at home to develop their skills further. A micro: =bit does not have to be purchased to do this.</p> <p>Research other projects that could be created with a BBC Micro: bit and what equipment would be needed.</p>

<p>Creative Project</p>	<ul style="list-style-type: none"> • Understand how to combine multiple applications to solve a given problem – create a video advert using multiple applications to create/edit assets. • Understand how assets can be repurposed for a given audience • Understand the importance of selecting appropriate resources. • Create your own video advert by importing existing images into an Adobe Premier Pro or Windows Movie Maker project. • Use a range of editing techniques such as trim, transitions, effects and captions. 	<p>Analyse the target audience and purpose of adverts you see. These could be from in a magazine, on television, on your phone, on billboards etc. Look at the colours and images used to stand out to the targeted audience and meet the purpose.</p>
-------------------------	---	--