YEAR 7

	Term 1		Term 2		Term 3

Digital Literacy
* Intro to the school network and digital literacy skills
	Students will have knowledge of and be able to recall the following:
	  * Understand the importance of naming files and folder management
	  * How to access their school email account:
	  * write and send an email
	  * search for someone's email address at Haywood Academy
	  * Add an attachment to an email
	Use basic office tools:
	  * Text formatting - alignment, bold, underline, font sixe and style
	  * Insert and format tables to structure information
	  * Insert, resize and format images
	  * Know the layout for a formal business letter
	  * Develop a simple slideshow for different audiences:
	    * Add slides and change the layout
	    * Insert and format images
	    * Change the background colour
	    * Animations and Transitions
	    * Change the type of content for different audiences
		Programming Essentials in Scratch
		* Programming using visual programming language - SCRATCH
			Students will have knowledge of and be able to recall:
			  * What is an algorithm
			  * The importance of sequencing when writing a simple program
			  * Why accuracy is important when writing a program
			  * Be able to debug a simple program
			  * Understand that selection allows for a decision to be made in a program
			  * Understand that iteration/loops allow instructions to be repeated
				Harry Plotter
				* Spreadsheet Modelling
					Students will have knowledge of and be able to recall:
					  * How to enter data into cells
					  * Use basic formula to:
					    - SUM
					    - Average
					    - MIN
					    - MAX
					  * Reference cells on other sheets within the workbook
					  * Use a spreadsheet to model scenarios
					    - predictions/outcomes
					  * Format data in cells

Under the Hood of a Computer
 * Students will explore the history of technology and the similarities and differences between early and current computational devices
	Students will have a knowledge of and beable to recall the following:
	  * Name a couple of early computational devices
	  * Know the importance of Colossus during WW2
	  * Explain some ways that computers have changed
	  * Be able to list 3 or more computer components
	  * Be able to explain the purpose of those components
	  * Can count to 10 in Binary
	  * Decode a message using ASCII codes
		BBC Microbit
		* Students will apply their understanding of programming skills in Scratch and apply this to writing programs for the BBC Micro:bit
			Students will have knowledge of and be able to recall:
			  * How to use the Microbit block editor to work with inputs and outputs
			  * Create programs using sequence, selection and iteration
				Web Awareness
				* In anticipation of students being online, away from a school setting, for the summer holidays we will look into how the Internet works and risks they may face online
					Students will have the knowledge of a be able to:
					  * How the internet works
					  * Identify possible risks faced when online
					  * Know what to do when faced with possible risks online (reporting)
					  * Understanding what malware is
					  * Explain ways to prevent malware infections

YEAR 8					
Term 1		**Term 2**		**Term 3**	
Using computers safely	Students will have knowledge of or be able to do the following: File Management - To learn the policy regarding school computer use To learn to manage files in File Explorer To learn some useful tips for using software packages To understand the importance of backup Social Networking - Learn how to keep your identity secure on the Internet Learn how to respond to threats on the Internet Learn about the possible dangers of social networking sites Keeping your data safe - Learn how to create a secure, memorable password Learn how to identify a phishing scam Learn how to avoid being a victim of an email scam Using email - send, respond to and forward emails search your old emails for a sender, subject, etc. resize large image files before sending manage your contacts list Be aware of the advantages and disadvantages of email Searching the Web - Define the term "search engine" and name examples Learn techniques to use a search engine efficiently Appreciate that there is no guarantee that the information on the Internet is accurate	Programming Scratch (Part 2)	Students will have knowledge of or be able to do the following: You have got the moves - Define a subroutine as a group of instructions that will run when called by the main program or other subroutines Define decomposition as breaking a problem down into smaller, more manageable subproblems Identify how subroutines can be used for decomposition Fly, cat, fly - Identify where condition-controlled iteration can be used in a program Implement condition-controlled iteration in a program Loop de loop - Evaluate which type of iteration is required in a program Treasure those lists - Define a list as a collection of related elements that are referred to by a single name Describe the need for lists Identify when lists can be used in a program Use a list Translate this - Decompose a larger problem into smaller subproblems Apply appropriate constructs to solve a problem	**Understanding computers**	Students will have knowledge of or be able to do the following: Elements of a computer system The CPU Understanding Binary Binary addition Storage devices Convergence and new technologies
Python Turtle	Using commands - pupils will learn how to use the correct syntax when coding in Python. Iteration - pupils will learn about loops and repetition within Python Repeat Commands - Understand the purpose of the For command Understand and nested For commands Design complex shapes using the nested For command Procedures - Understand what a procedure is. Learn how to write a procedure and create a shape using a procedure. Create complex patterns using procedures and iteration.	BBC Microbit	To develop a deeper understanding of computational thinking concepts to understand the steps in computational thinking to develop and present a prototype for a computerised paper aeroplane to write an accurate algorithm to understand the relationship between algorithms and programming to understand and use pseudocode and flowchart algorithms to tinker, testing and debug to create a working program using a graphical programming language	**Flowol**	Flowcharts - Identify control flowchart symbols and understand how they are used to describe systems Develop a control flowchart solution for a simple problem Sequencing - Understand why a control system might fail and explain the impact this can have on safety Develop a control solution for a system that uses two flowcharts operating in sequence Sensors - Identify common types of sensors used in control systems

			to understand iteration and selection and why they are used to develop algorithms and programs using iteration and selection to experiment with graphical and text-based programming languages. to know and understand the common features of computer systems to know and explain input and output devices, hardware and software to apply understanding to writing algorithms and programming micro:bit		Use decision symbols in a flowchart Develop a control solution for a system that uses multiple sensors Subroutines - Develop a control solution for a system that includes a subroutine Understand how the use of subroutines can make programs more efficient Actuators - Understand what actuators are used for in control systems Understand what a variable is and explain how variables can be used to control systems Develop a control solution for a system that uses variables Variables - Understand what a variable is and explain how variables can be used to control systems Develop a control solution for a system that uses variables Understand how a digital 7-segment display works

YEAR 9					
Term 1		**Term 2**		**Term 3**	

Networks and Computer Crime	Students will have knowledge of the following:
	  * Define a networks and its purpose
	  * Know how data is transmitted across a network, be able to describe packet switching
	  * Describe different methods of connectivity (wired and wireless)
	  * Explain what a network topology is and give an example
	  * Describe a client server network
	  * Explain what encryption is and why it is needed
	
	Computer Crime
	Students will have the following knowledge or skills:
	  * What types of crime are committed using technology
	  * Describe email scams, phishing
	  * Define the term hacking
	  * Suggest ways to keep personal data safe online
	  * The importance of Copyright
	  * Health & safety around the use of computers and other technologies
		Representation going audiovisual	Representation going audiovisual
			Students will have the following knowledge and skills:
			  * Understanding of computers using binary to represent symbols, numbers and letters
			  * Explain how bitmap images are made up of pixels
			  * Explain image resolution
			  * Know colour is made up of RGB
			  * Use image editing software to manipulate digital images
				Python Next Steps
				
				Computational Thinking and E-Safety
					Students will have knowledge of the following:
					Python Next Steps
					  * The basics -
					  * Loops - Count and condition controlled loops
					  * Arrays / Lists
					  * Procedures & Functions
					
					Computational Thinking
					  * Algorithmic thinking, decomposition - Logical reasoning and algorithms
					  * Sorting algorithms
					  * Searching algorithms

Computer Crime Spreadsheet Modelling	Spreadsheet Modelling
	  * How computer models help make predictions in real life
	Understand what is meant by the term computer model, and compare different types of model
	Understand that spreadsheets can be used to build financial models
	Revise spreadsheet basics: entering text, numbers and formulae
	Use relative and absolute referencing
	Format cells, insert a graphic
	- What if scenarios- Use a spreadsheet to model outcomes
	Use functions including Max, Min and If
	Name a cell
	Sort data into different sequences
	Try out different 'What if' scenarios to achieve a goal
	Display formulae in a spreadsheet
	
	Validation Rules - Use validation techniques to ensure that only valid data can be entered
		Python Turtle	Python Turtle
			Students will have the knowledge and demonstrate the following skills:
			  * Use iteration
			    - Condition and count-controlled loops
			    - Nested loops
			  * Use additional 'libraries' in Python, i.e. datetime and turtle
			  * Employ computational thinking skills to solve problems
			  * Debug their own programs
			  * Include functions/procedures in their solutions
				Database development
				
				Web design and E-Safety
					Database Development
					  * Tables and ERD
					  * Queries
					  * Input Forms
					  * Reports and macros
					
					Web Design
					  * Basic HTML tags and tyhe structure of a basic webpage
					  * Develop a website plan
					  * Use graphic editing software to create a web banner and navigation buttons
					  * Using Dreamweaver to build a website and adding content

	Use conditional formatting to show which seats have been booked Use a Countif function in calculations of seat sales Macros and Charts - being able to create and assign differnet macros. Create charts to display data with appropriate formatting added.				