Computing

		Skills				Knowledge				
	File Management	**Using a Network**	**Creating Digital Content**	**Object Orientated Programming (Flowol, Kodu)**	**Text Based Programming (Logo,Flowol)**	**E-Safety**	**Understanding Computers: The Basics**	**Data Representation**	**The Internet & Connectivity**	**Networks**
R1	**I can** name a file appropriately	**I can** locate different drives with some assistance	**I can** create digital content to achieve a given goal demonstrating some awareness of audience and purpose.	**I can** create basic programs that implement algorithms to achieve basic purposes	**I can** implement simple programs that achieve a few simple purposes e.g. input/print	**I can** state some risks posed by using technology	**I can** identify the difference between hardware and software, input and output devices	**I can** state that digital computers use binary to represent data	**I can** state what a URL is and its basic structure	**I can** state the difference between a LAN and a WAN
R2	**I can** name a file and a folder appropriately	**I can** name some rules to follow when using a network	**I can** apply a small range of formatting skills to improve presentation of content	**I can** apply the use of commands and syntax in a variety of different programming environments e.g. text, flowchart and tile/icon	**I can** apply commands, regularly follow syntax rules and use appropriate data types to implement a range of programs	**I can** identify a good and bad password	**I can** Identify examples of hardware and software from a list	**I can** perform a simple conversions between two different data representations E.g. denary to binary	**I can** identify different methods of connecting networks i.e. wired and wireless connectivity	**I can** list two different types of network topologies
R3	**I can** create a basic folder structure and store some of my files in appropriate folders	**I can** use file explorer to move between different folders, with some assistance	**I can** use a simple spreadsheet/database to retrieve appropriate information e.g. simple single search/formula	**I can** recall a few programming concepts & techniques with some success in written tests.	**I can** recall a few programming concepts & techniques with some success in written tests.	**I can** state a few risks and ways to protect myself when using technology	**I can** identify examples of input, output and storage devices from a list	**I can** apply a simple conversions in a written test	**I can** explain that bandwidth (internet speed) can affect performance i.e. buffering	**I can** state what data encryption is

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F1	**I can** regularly name my files appropriately	**I can** independently locate different drives	**I can** create digital content to achieve a given goal demonstrating a sound awareness of audience and purpose.	**I can** create increasingly complex programs to solve given problems	**I can** create and debug increasingly complex programs that implement algorithms to solve a given problem e.g. password checker	**I can** describe a range of risks posed by using technology	I can describe the difference between hardware and software, input and output devices	**I can** describe how digital computers use binary to represent data and I can use a character set. ASCII	**I can** explain what a Domain Name Server (DNS) is and why one is needed	**I can** describe the advantages and disadvantages of computer networks
F2	**I can** regularly name my files and folders appropriately	**I can** describe several rules when using a network	**I can** apply a range of formatting skills with some effect in order to improve presentation of content	**I can** describe the use and advantages of procedures in a variety of different programming environments e.g. text - house, flowchart – flashing light in pelican	**I can** perform and describe a wide variety of programming functions e.g. Input, print, selection, iteration, read/write to a file, use a list	**I can** describe some rules when choosing a secure password	**I can** describe a range of examples of hardware and software	**I can** perform a range of simple conversions between different data representations E.g. denary to binary, binary to denary, binary to ASCII	**I can** describe what a protocol is and why one is needed for data communication	**I can** design a client server network with some accuracy
F3	**I can** regularly create folders and sub folders and store most of my files in appropriate folders, all with appropriate names.	**I can** independently use file explorer to move between different folders	**I can** use and create spreadsheets and databases to present and retrieve appropriate information for increasingly complex requirements e.g. multiple searches, school disco model	**I can** create a complex game in Kodu. The game will have a clear purpose & end. The game will include a range of features to enhance the users experience e.g. instructions, text dialogue, speed ups, timers, mines, pathways etc.	**I can** recall and apply a range of programming techniques & concepts with some success in written tests.	**I can** describe a range of risks and ways to protect myself when using technology	**I can** describe a range of examples of input, output and storage devices	**I can** apply a range of conversions in written tests	**I can** describe why we need packet switching and packet switching works with some accuracy and use of specialist terminology	**I can** apply an encryption method e.g. shift 3 to cypher and decipher a message

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A1	**I can** name all my files appropriately, with few exceptions	**I can** explain what I can and cannot do on different drives using specialist terminology (read,write, read/write)	**I can** independently create digital content to achieve a given goal demonstrating a clear sense of audience and purpose. I can repurpose content for a new audience.	**I can** independently create complex programs to solve given problems	**I can** independently adapt and create complex programs that solve given problems.	**I can** explain a wide range of risks posed by using technology, including phishing	**I can** describe what makes up a basic computer system and the basics of the fetch, execute cycle	**I can** independently explain how digital computers use binary to represent data and why computers need character sets e.g. ASCII	**I can** independently explain the difference between wired and wireless connectivity and a range of advantages and disadvantages of each method	**I can** independently explain the difference between standalone and networked computers outlining the advantages and disadvantages of each method
A2	**I can** name all my files and folders appropriately, with no exceptions	**I can** explain with reasons several rules when using a network	**I can** apply a wide range of formatting skills effectively to improve presentation of content	**I can** explain the use of sensors, selection, counters and procedures to achieve a given purpose within an complex problem e.g. pelican crossing lights through counters and procedures	**I can** independently perform and describe a wide variety of programming functions e.g. Input, print, selection, iteration, read/write to a file, use a list	**I can** explain several rules when choosing a secure password	**I can** describe the uses of and differences between RAM and ROM, using specialist terminology i.e. volatility	**I can** perform a range of simple conversions between different data representations and advanced techniques such as binary addition	**I can** independently recall that there are different types of network topologies e.g. ring, star, bus, how they work and an advantage and disadvantage of each different type	**I can** independently design a client server network with full accuracy, including use of hubs/switches/servers/routers

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A3	I can create folders and sub folders and store all of my files in appropriate folders, all with appropriate names, no exceptions	I can independently use file explorer to regularly locate files I need from lesson to lesson, without any teacher assistance	I can use spreadsheets and databases to present and retrieve information for complex requirements e.g. multiple searches, create a school disco model and model different situations.	I can create a multi layered complex game in Kodu. The game will have a clear purpose & end. The game will include a wide range of features to enhance the users experience e.g. instructions, text dialogue, speed ups, timers, mines, pathways etc.	I can recall and apply a wide range of programming techniques & concepts with great success in written tests.	I can explain a range of risks, including phishing and ways to identify those risks e.g. a phishing scam & several ways to protect myself when using technology	I can recall and apply a wide range of knowledge with great success in written tests	I can recall and apply a wide range data conversions and additions with great success in written tests	I can recall and apply a wide range of theory with great success in written tests	I can explain what encryption is, why it is needed and independently apply different encryption methods