					National Curriculum Links							Teach Computing Taxonomy											
Year Group	Suggested Order	Unit Name	Learning Objectives	Success Criteria	2.1	2.2	2.3	2.4	2.5	2.6	2.7	Algorithms	Creating Media	Computer Systems	Design and Development	Data and information	Effective use of tools	Information Technology	Computer Networks	Programming	Safety and security	Cross Curricular Links	Education for a Connected World
5	Autumn 1	Computing systems and networks - Systems and	-To explain that computers can be connected together to form systems	-I can describe that a computer system features inputs, processes, and outputs - I can explain that computer systems communicate with other devices - I can explain that systems are built using a number of parts	■	■		■		■				■								RSE and Health Education	
Vocabulary: system, connection, digital, input, process, storage, output, search, search engine, refine, index, bot, ordering, links, algorithm, search engine optimisation (SEO), web crawler, content creator, selection, ranking			-To recognise the role of computer systems in our lives	-I can explain the benefits of a given computer system - I can identify tasks that are managed by computer systems - I can identify the human elements of a computer system	■	■		■		■				■				■				RSE and Health Education	Privacy and Security
			-To experiment with search engines	-I can compare results from different search engines - I can make use of a web search to find specific information - I can refine my web search	■	■		■		■									■			RSE and Health Education	- Managing online information
			-To describe how search engines select results	-I can explain why we need tools to find things online - I can recognise the role of web crawlers in creating an index - I can relate a search term to the search engine's index	■	■		■		■								■	■			RSE and Health Education	- Managing online information
			-To explain how search results are ranked	-I can explain that a search engine follows rules to rank results - I can give examples of criteria used by search engines to rank results - I can order a list by rank	■	■		■		■							■		■			RSE and Health Education	- Managing online information
			-To recognise why the order of results is important, and to whom	-I can describe some of the ways that search results can be influenced - I can explain how search engines make money - I can recognise some of the limitations of search engines	■	■		■		■					■		■		■			RSE and Health Education	- Managing online information
5	Autumn 2	Creating media - Video production	-To explain what makes a video effective	-I can compare features in different videos - I can explain that video is a visual media format - I can identify features of videos					■	■	■		■		■								Online Relationships
Vocabulary: video, audio, camera, talking head, panning, close up, video camera, microphone, lens, mid-range, long shot, moving subject, side by side, angle (high, low, normal), static, zoom, pan, tilt, storyboard, filming, review, import, split, trim, clip, edit, reshoot, delete, reorder, export, evaluate, share.			-To identify digital devices that can record video	-I can experiment with different camera angles - I can identify and find features on a digital video recording device - I can make use of a microphone					■	■	■		■	■									
			-To capture video using a range of techniques	-I can capture video using a range of filming techniques - I can review how effective my video is - I can suggest filming techniques for a given purpose					■	■	■		■								■		
			-To create a storyboard	-I can create and save video content - I can decide which filming techniques I will use - I can outline the scenes of my video					■	■	■		■		■		■						
			-To identify that video can be improved through reshooting and editing	-I can explain how to improve a video by reshooting and editing - I can select the correct tools to make edits to my video - I can store, retrieve, and export my recording to a computer					■	■	■		■				■						
			-To consider the impact of the choices made when making and sharing a video	-I can evaluate my video and share my opinions - I can make edits to my video and improve the final outcome - I can recognise that my choices when making a video will impact on the quality of the final outcome					■	■	■		■		■		■						
5	Spring 2	Programming A – Selection in physical computing	-To control a simple circuit connected to a computer	-I can create a simple circuit and connect it to a microcontroller - I can explain what an infinite loop does - I can program a microcontroller to make an LED switch on	■	■	■			■				■						■		Science (LKS2)- electricity, Design & Technology	
Vocabulary: microcontroller, USB, components, connection, infinite loop, output component, motor, repetition, count-controlled loop, Crumble controller, switch, LED, Sparkle, crocodile clips, connect, battery box, program, condition, Input, output, selection, action, debug, circuit, power, cell, buzzer			-To write a program that includes count-controlled loops	-I can connect more than one output component to a microcontroller - I can design sequences that use count-controlled loops - I can use a count-controlled loop to control outputs	■	■	■			■				■						■		Science (LKS2)- electricity, Design & Technology	
			-To explain that a loop can stop when a condition is met	-I can design a conditional loop - I can explain that a condition is either true or false - I can program a microcontroller to respond to an input	■	■	■			■				■						■		Science (LKS2)- electricity, Design & Technology	
			-To explain that a loop can be used to repeatedly check whether a condition has been met	-I can explain that a condition being met can start an action - I can identify a condition and an action in my project - I can use selection (an 'if…then…' statement) to direct the flow of a program	■	■	■			■										■		Science (LKS2)- electricity, Design & Technology	
			-To design a physical project that includes selection	-I can create a detailed drawing of my project - I can describe what my project will do - I can identify a real-world example of a condition starting an action	■	■	■			■				■	■					■		Science (LKS2)- electricity, Design & Technology	
			-To create a program that controls a physical computing project	-I can test and debug my project - I can use selection to produce an intended outcome - I can write an algorithm that describes what my model will do	■	■	■			■				■	■					■		Science (LKS2)- electricity, Design & Technology	
5	Spring 1	Data and information – Flat-file databases	-To use a form to record information	-I can create a database using cards - I can explain how information can be recorded - I can order, sort, and group my data cards					■	■						■	■					Maths- Statistics	
Vocabulary: database, data, information, record, field, sort, order, group, search, value, criteria, graph, chart, axis, compare, filter, presentation			-To compare paper and computer-based databases	-I can choose which field to sort data by to answer a given question - I can explain what a field and a record is in a database - I can navigate a flat-file database to compare different views of information					■	■					■	■						Maths- Statistics	
			-To outline how you can answer questions by grouping and then sorting data	-I can combine grouping and sorting to answer specific questions - I can explain that data can be grouped using chosen values - I can group information using a database					■	■						■						Maths- Statistics	
			-To explain that tools can be used to select specific data	-I can choose multiple criteria to answer a given question - I can choose which field and value are required to answer a given question - I can outline how 'AND' and 'OR' can be used to refine data selection					■	■						■	■					Maths- Statistics	
			-To explain that computer programs can be used to compare data visually	-I can explain the benefits of using a computer to create charts - I can refine a chart by selecting a particular filter - I can select an appropriate chart to visually compare data					■	■						■	■					Maths- Statistics	
			-To use a real-world database to answer questions	-I can ask questions that will need more than one field to answer - I can present my findings to a group - I can refine a search in a real-world context					■	■						■	■					Maths- Statistics	

5	**Summer 1**	**Creating media – Introduction to vector graphics**	-To identify that drawing tools can be used to produce different outcomes	-I can discuss how vector drawings are different from paper-based drawings - I can experiment with the shape and line tools - I can recognise that vector drawings are made using shapes						🟦			🟪			🟪	🟪					Art and Design	
Vocabulary: vector, drawing tools, object, toolbar, vector drawing, move, resize, colour, rotate, duplicate/copy, zoom, select, align, modify, layers, order, copy, paste, group, ungroup, reuse, reflection			-To create a vector drawing by combining shapes	-I can explain that each element added to a vector drawing is an object - I can identify the shapes used to make a vector drawing - I can move, resize, and rotate objects I have duplicated						🟦			🟪				🟪					Art and Design	
			-To use tools to achieve a desired effect	-I can explain how alignment grids and resize handles can be used to improve consistency - I can modify objects to create a new image - I can use the zoom tool to help me add detail to my drawings						🟦			🟪				🟪					Art and Design	
			-To recognise that vector drawings consist of layers	-I can change the order of layers in a vector drawing - I can identify that each added object creates a new layer in the drawing - I can use layering to create an image						🟦			🟪				🟪					Art and Design	
			-To group objects to make them easier to work with	-I can copy part of a drawing by duplicating several objects - I can recognise when I need to group and ungroup objects - I can reuse a group of objects to further develop my vector drawing						🟦			🟪				🟪					Art and Design	
			-To apply what I have learned about vector drawings	-I can compare vector drawings to freehand paint drawings - I can create a vector drawing for a specific purpose - I can reflect on the skills I have used and why I have used them						🟦			🟪		🟪							Art and Design	
5	**Summer 2**	**Programming B – Selection in quizzes**	-To explain how selection is used in computer programs	-I can identify conditions in a program - I can modify a condition in a program - I can recall how conditions are used in selection	🟦	🟦	🟦			🟦		🟪								🟪			
Vocabulary: selection, condition, true, false, count-controlled loop, outcomes, conditional statement, algorithm, program, debug, question, answer, task, design, input, implement, test, run, setup, operator			-To relate that a conditional statement connects a condition to an outcome	-I can create a program with different outcomes using selection - I can identify the condition and outcomes in an 'if... then... else...' statement - I can use selection in an infinite loop to check a condition	🟦	🟦	🟦			🟦		🟪								🟪			
			-To explain how selection directs the flow of a program	-I can design the flow of a program which contains 'if… then… else…' - I can explain that program flow can branch according to a condition - I can show that a condition can direct program flow in one of two ways	🟦	🟦	🟦			🟦		🟪								🟪			
			-To design a program which uses selection	-I can identify the outcome of user input in an algorithm - I can outline a given task - I can use a design format to outline my project	🟦	🟦	🟦			🟦					🟪					🟪			
			-To create a program which uses selection	-I can implement my algorithm to create the first section of my program - I can share my program with others - I can test my program	🟦	🟦	🟦			🟦					🟪					🟪			
			-To evaluate my program	-I can extend my program further - I can identify the setup code I need in my program - I can identify ways the program could be improved	🟦	🟦	🟦			🟦					🟪					🟪			
6	**Autumn 1**	**Computing systems and networks - Communication and collaboration**	-To explain the importance of internet addresses	-I can describe how computers use addresses to access websites - I can explain that internet devices have addresses - I can recognise that data is transferred using agreed methods				🟦		🟦	🟦						🟪		🟪			RSE and Health Education	
Vocabulary: communication, protocol, data, address, Internet Protocol (IP), Domain Name Server (DNS), packet, header, data payload, chat, explore, slide deck, reuse, remix, collaboration, internet, public, private, one way, two-way, one-to-one, one-to-many.			-To recognise how data is transferred across the internet	-I can explain that all data transferred over the internet is in packets - I can explain that data is transferred over networks in packets - I can identify and explain the main parts of a data packet				🟦		🟦	🟦						🟪		🟪			RSE and Health Education	
			-To explain how sharing information online can help people to work together	-I can explain that the internet allows different media to be shared - I can recognise how to access shared files stored online - I can send information over the internet in different ways				🟦		🟦	🟦						🟪		🟪			RSE and Health Education	
			-To evaluate different ways of working together online	-I can explain how the internet enables effective collaboration - I can identify different ways of working together online - I can recognise that working together on the internet can be public or private				🟦		🟦	🟦						🟪	🟪	🟪			RSE and Health Education	
			-To recognise how we communicate using technology	-I can choose methods of communication to suit particular purposes - I can explain the different ways in which people communicate - I can identify that there are a variety of ways to communicate over the internet				🟦		🟦	🟦						🟪		🟪			RSE and Health Education	
			-To evaluate different methods of online communication	-I can compare different methods of communicating on the internet - I can decide when I should and should not share information online - I can explain that communication on the internet may not be private				🟦		🟦	🟦				🟪		🟪		🟪			RSE and Health Education	- Managing online information -Self-image and identity
6	**Autumn 2**	**Creating media – Web page creation**	-To review an existing website and consider its structure	-I can discuss the different types of media used on websites - I can explore a website - I know that websites are written in HTML					🟦	🟦	🟦		🟪		🟪				🟪			English- composition	
Vocabulary: website, web page, browser, media, Hypertext Markup Language (HTML), logo, layout, header, media, purpose, copyright, fair use, home page, preview, evaluate, device, Google Sites, breadcrumb trail, navigation, hyperlink, subpage, evaluate, implication, external link, embed.			-To plan the features of a web page	-I can draw a web page layout that suits my purpose - I can recognise the common features of a web page - I can suggest media to include on my page					🟦	🟦	🟦		🟪		🟪							English- composition	
			-To consider the ownership and use of images (copyright)	-I can describe what is meant by the term 'fair use' - I can find copyright-free images - I can say why I should use copyright-free images					🟦	🟦	🟦		🟪		🟪						🟪	English- composition	- Copyright and ownership
			-To recognise the need to preview pages	-I can add content to my own web page - I can evaluate what my web page looks like on different devices and suggest/make edits - I can preview what my web page looks like					🟦	🟦	🟦		🟪		🟪		🟪					English- composition	
			-To outline the need for a navigation path	-I can describe why navigation paths are useful - I can explain what a navigation path is - I can make multiple web pages and link them using hyperlinks					🟦	🟦	🟦		🟪		🟪		🟪		🟪			English- composition	
			-To recognise the implications of linking to content owned by other people	-I can create hyperlinks to link to other people's work - I can evaluate the user experience of a website - I can explain the implication of linking to content owned by others					🟦	🟦	🟦		🟪		🟪		🟪	🟪	🟪			English- composition	

6	**Spring 1**	**Programming A – Variables in games**	-To define a 'variable' as something that is changeable	-I can explain that the way a variable changes can be defined - I can identify examples of information that is variable - I can identify that variables can hold numbers or letters	🟦	🟦	🟦			🟦										🟪			
Vocabulary: variable, change, name, value, set, design, event, algorithm, code, task, artwork, program, project, code, test, debug, improve, evaluate, share, assign, declare			-To explain why a variable is used in a program	-I can explain that a variable has a name and a value - I can identify a program variable as a placeholder in memory for a single value - I can recognise that the value of a variable can be changed	🟦	🟦	🟦			🟦										🟪			
			-To choose how to improve a game by using variables	-I can decide where in a program to change a variable - I can make use of an event in a program to set a variable - I can recognise that the value of a variable can be used by a program	🟦	🟦	🟦			🟦					🟪					🟪			
			-To design a project that builds on a given example	-I can choose the artwork for my project - I can create algorithms for my project - I can explain my design choices	🟦	🟦	🟦			🟦					🟪					🟪			
			-To use my design to create a project	-I can choose a name that identifies the role of a variable - I can create the artwork for my project - I can test the code that I have written	🟦	🟦	🟦			🟦					🟪					🟪			
			-To evaluate my project	-I can identify ways that my game could be improved - I can share my game with others - I can use variables to extend my game	🟦	🟦	🟦			🟦					🟪					🟪			
6	**Spring 2**	**Data and information – Spreadsheets**	-To create a data set in a spreadsheet	-I can collect data - I can enter data into a spreadsheet - I can suggest how to structure my data						🟦						🟪						Maths- number, statistics	
Vocabulary: data, collecting, table, structure, spreadsheet, cell, cell reference, data item, format, formula, calculation, spreadsheet, input, output, operation, range, duplicate, sigma, propose, question, data set, organised, chart, evaluate, results, sum, comparison, software, tools.			-To build a data set in a spreadsheet	-I can apply an appropriate format to a cell - I can choose an appropriate format for a cell - I can explain what an item of data is						🟦						🟪						Maths- number, statistics	
			-To explain that formulas can be used to produce calculated data	-I can construct a formula in a spreadsheet - I can explain which data types can be used in calculations - I can identify that changing inputs changes outputs						🟦						🟪	🟪			🟪		Maths- number, statistics	
			-To apply formulas to data	-I can apply a formula to multiple cells by duplicating it - I can calculate data using different operations - I can create a formula which includes a range of cells						🟦						🟪	🟪			🟪		Maths- number, statistics	
			-To create a spreadsheet to plan an event	-I can apply a formula to calculate the data I need to answer questions - I can explain why data should be organised - I can use a spreadsheet to answer questions						🟦						🟪	🟪					Maths- number, statistics	
			-To choose suitable ways to present data	-I can produce a chart - I can suggest when to use a table or chart - I can use a chart to show the answer to questions						🟦			🟪			🟪	🟪					Maths- number, statistics	
6	**Summer 2**	**Creating media – 3D Modelling**	-To recognise that you can work in three dimensions on a computer	-I can add 3D shapes to a project - I can move 3D shapes relative to one another - I can view 3D shapes from different perspectives						🟦	🟦		🟪				🟪					Art and design Design & technology Maths- 3D shapes	
TinkerCAD, 2D, 3D, shapes, select, move, perspective, view, handles, resize, lift, lower, recolour, rotate, duplicate, group, cylinder, cube, cuboid, sphere, cone, prism, pyramid, placeholder, hollow, choose, combine, construct, evaluate, modify.			-To identify that digital 3D objects can be modified	-I can lift/lower 3D objects - I can recolour a 3D object - I can resize an object in three dimensions						🟦	🟦		🟪				🟪					Art and design Design & technology Maths- 3D shapes	
			-To recognise that objects can be combined in a 3D model	-I can duplicate 3D objects - I can group 3D objects - I can rotate objects in three dimensions						🟦	🟦		🟪				🟪					Art and design Design & technology Maths- 3D shapes	
			-To create a 3D model for a given purpose	-I can accurately size 3D objects - I can combine a number of 3D objects - I can show that placeholders can create holes in 3D objects						🟦	🟦		🟪				🟪					Art and design Design & technology Maths- 3D shapes	
			-To plan my own 3D model	-I can analyse a 3D model - I can choose objects to use in a 3D model - I can combine objects in a design						🟦	🟦		🟪		🟪		🟪					Art and design Design & technology Maths- 3D shapes	
			-To create my own digital 3D model	-I can construct a 3D model based on a design - I can explain how my 3D model could be improved - I can modify my 3D model to improve it						🟦	🟦		🟪		🟪		🟪					Art and design Design & technology Maths- 3D shapes	
6	**Summer 1**	**Programming B - Sensing movement**	-To create a program to run on a controllable device	-I can apply my knowledge of programming to a new environment - I can test my program on an emulator - I can transfer my program to a controllable device	🟦	🟦	🟦			🟦				🟪						🟪			
Vocabulary: Micro:bit, MakeCode, input, process, output, flashing, USB, trace, selection, condition, if then else, variable, random, sensing, accelerometer, value, compass, direction, navigation, design, task, algorithm, step counter, plan, create, code, test, debug			-To explain that selection can control the flow of a program	- I can identify examples of conditions in the real world - I can use a variable in an if, then, else statement to select the flow of a program	🟦	🟦	🟦			🟦				🟪						🟪			
			-To update a variable with a user input	-I can experiment with different physical inputs - I can explain that checking a variable doesn't change its value - I can use a condition to change a variable	🟦	🟦	🟦			🟦				🟪						🟪			
			-To use a conditional statement to compare a variable to a value	-I can explain the importance of the order of conditions in else, if statements - I can modify a program to achieve a different outcome - I can use an operand (e.g. <>=) in an if, then statement	🟦	🟦	🟦			🟦				🟪						🟪			
			-To design a project that uses inputs and outputs on a controllable device	-I can decide what variables to include in a project - I can design the algorithm for my project - I can design the program flow for my project	🟦	🟦	🟦			🟦				🟪	🟪					🟪			
			-To develop a program to use inputs and outputs on a controllable device	-I can create a program based on my design - I can test my program against my design - I can use a range of approaches to find and fix bugs	🟦	🟦	🟦			🟦				🟪	🟪					🟪			