#### (Upper KS2 Curriculum – Year B)

Differentiation by input see the weekly planning sheet/

- -Key vocab for each learning objective is in red font /
- -Resources -see the weekly planning /
- -Minimum Assessment for Learning strategies for all topics = Peer Talk; targeted questioning; mini white boards; and self and peer marking
- Long term memory development strategies= Recapping pervious learning at the start of each new topic / Long term memory strategy linked to the objectives on this sheet for each week
- -Computing Cultural Capital = can understand and apply the fundamental principles and concepts of computer science, including abstraction, logic, algorithms and data representation

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	Searching the web	Selecting search results	How search results are ranked	How are searches influenced?	How we communicate	Communicating responsibly	Assessment, Consolidation
	<u>Learning Objective</u>	<u>Learning Objective</u>	<b>Learning Objective</b>	<b>Learning Objective</b>	<u>Learning Objective</u>	<u>Learning Objective</u>	and Review
Autumn first half	<ul> <li>To identify how to use a search engine</li> </ul>	<ul> <li>To describe how search engines select results</li> </ul>	<ul> <li>To explain how search results are ranked</li> </ul>	<ul> <li>To recognise why the order of results is important, and to whom</li> </ul>	<ul> <li>To recognise how we communicate using technology</li> </ul>	- To evaluate different methods of online communication	
	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Computing Systems and Networks – Communication	<ul> <li>I can compare results from different search engines</li> <li>I can complete a web search to find specific information</li> <li>I can refine my search</li> </ul>	<ul> <li>I can explain why we need tools to find things online</li> <li>I can recognise the role of web crawlers in creating an index</li> <li>I can relate a search term to the search engine's index</li> </ul>	<ul> <li>I can explain that a search engine follows rules to rank relevant pages</li> <li>I can explain that search results are ordered</li> <li>I can suggest some of the criteria that a search engine checks to decide on the order of results</li> </ul>	<ul> <li>I can describe some of the ways that search results can be influenced</li> <li>I can explain how search engines make money</li> <li>I can recognise some of the limitations of search engines</li> </ul>	<ul> <li>I can choose methods of communication to suit particular purposes</li> <li>I can explain the different ways in which people communicate</li> <li>I can identify that there are a variety of ways of communicating over the internet</li> </ul>	<ul> <li>I can compare different methods of communicating on the internet</li> <li>I can decide when I should and should not share</li> <li>I can explain that communication on the internet may not be private</li> </ul>	
Key Vocabulary	Search, search engine, Google, Bing, Yahoo!, Swisscows, DuckDuckGo, refine	Index, crawler, bot, search engine	Ranking, search engine, search engine optimisation, links, web crawlers	Searching, search engine, web crawler, content creator, selection, ranking	Communication, internet	Communication, public, private, one-way, two-way, one-to-one, one-to-many, SMS, email, WhatsApp, blog, YouTube, Twitter, BBC Newsround	
KS2 Computing NC Links	2.1, 2.4, 2.5, 2.6, 2.7	2.1, 2.4, 2.5, 2.6, 2.7	2.1, 2.4, 2.5, 2.6, 2.7	2.1, 2.4, 2.5, 2.6, 2.7	2.1, 2.4, 2.5, 2.6, 2.7	2.1, 2.4, 2.5, 2.6, 2.7	
Computing Strand	ET, NW	ET, NW	ET, NW	ET, IT, NW	ET, NW	DD, ET, NW	
Education for a Connected World	<ul> <li>Managing online information</li> <li>Online reputation</li> </ul>	<ul><li>Managing online information</li><li>Online reputation</li></ul>	<ul><li>Managing online information</li><li>Online reputation</li></ul>	<ul><li>Managing online information</li><li>Online reputation</li></ul>	<ul><li>Managing online information</li><li>Online reputation</li></ul>	<ul><li>Managing online information</li><li>Online reputation</li></ul>	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	What makes a good website?	How would you layout your web page?	Copyright or CopyWRONG?	How does it look?	Follow the breadcrumbs	Think before you link!	Assessment, Consolidation and Review
	Learning Objective	<u>Learning Objective</u>	<b>Learning Objective</b>	Learning Objective	Learning Objective	Learning Objective	
Autumn second half	- To review an existing website and consider its structure	- To plan the features of a web page	<ul> <li>To consider the ownership and use of images (copyright)</li> </ul>	<ul> <li>To recognise the need to preview pages</li> </ul>	- To outline the need for a navigation path	- To recognise the implications of linking to content owned by other people	
Creating Media –	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Web page Creation	<ul> <li>I can discuss the different types of media used on websites</li> <li>I can explore a website</li> <li>I know that websites are written in HTML</li> </ul>	<ul> <li>I can draw a web page layout that suits my purpose</li> <li>I can recognise the common features of a web page</li> <li>I can suggest media to include on my page</li> </ul>	<ul> <li>I can describe what is meant by the term 'fair use'</li> <li>I can find copyright-free images</li> <li>I can say why I should use copyright-free images</li> </ul>	<ul> <li>I can add content to my own web page</li> <li>I can evaluate what my web page looks like on different devices and suggest/make edits.</li> <li>I can preview what my web page looks like</li> </ul>	<ul> <li>I can describe why navigation paths are useful</li> <li>I can explain what a navigation path is</li> <li>I can make multiple web pages and link them using hyperlinks</li> </ul>	<ul> <li>I can create hyperlinks         to link to other         people's work</li> <li>I can evaluate the user         experience of a         website</li> <li>I can explain the         implication of linking         to content owned by         others</li> </ul>	
Key Vocabulary	Website, web page, browser, media, Hypertext Markup Language (HTML)	Web page, website, logo, layout, header, media, purposes	Copyright, fair use	Web page, home page, preview, evaluate, device, Google Sites	Website, web page, breadcrumb trail, navigation, hyperlink, subpage	Hyperlink, evaluate, website, web page, implication, external link, embed	
KS2 Computing NC Links	2.5, 2.6, 2.7	2.5, 2.6, 2.7	2.5, 2.6, 2.7	2.5, 2.6, 2.7	2.5, 2.6, 2.7	2.5, 2.6, 2.7	
Computing Strand	CM, DD, NW	CM, DD	CM, DD	CM, DD, ET	CM, DD, ET, NW	CM, DD, ET, IT, NW	
Education for a Connected World	- Copyright and ownership	- Copyright and ownership	<ul> <li>Copyright and ownership</li> </ul>	<ul> <li>Copyright and ownership</li> </ul>	- Copyright and ownership	- Copyright and ownership	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	Introducing variables	Variables in programming	Improving a game	Designing a game	Design to code	Improving and sharing	Assessment, Consolidation and Review
	<b>Learning Objective</b>	<u>Learning Objective</u>	<b>Learning Objective</b>	Learning Objective	Learning Objective	<b>Learning Objective</b>	
Spring first half	<ul> <li>To define a 'variable' as something that is changeable</li> </ul>	- To explain why a variable is used in a program	<ul> <li>To choose how to improve a game by using variables</li> </ul>	- To design a project that builds on a given example	- To use my design to create a project	- To evaluate my project	
	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Programming A – Variables in Games	<ul> <li>I can explain that the way that a variable change can be defined</li> <li>I can identify examples of information that is variable</li> <li>I can identify that variables can hold numbers or letters</li> </ul>	<ul> <li>I can explain that a variable has a name and a value</li> <li>I can identify a program variable as a placeholder in memory for a single value</li> <li>I can recognise that the value of a variable can be changed</li> </ul>	<ul> <li>I can decide where in a program to change a variable</li> <li>I can make use of an event in a program to set a variable</li> <li>I can recognise that the value of a variable can be used by a program</li> </ul>	<ul> <li>I can choose the artwork for my project</li> <li>I can create algorithms for my project</li> <li>I can explain my design choices</li> </ul>	<ul> <li>I can choose a name that identifies the role of a variable</li> <li>I can create the artwork for my project</li> <li>I can test the code that I have written</li> </ul>	<ul> <li>I can extend my game further using more variables</li> <li>I can identify ways that my game could be improved</li> <li>I can share my game with others</li> </ul>	
Key Vocabulary	Variable, change, name, value	Variable, name, value, set, change	Variable, set, change, design, event	Design, algorithm, code	Task, algorithm, design, artwork, program, project, code, test, debug	Improve, evaluate, share	
KS2Computing NC Links	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	
Computing Strand	PG	PG	DD, PG	DD, PG	DD, PG	DD, PG	
Education for a Connected World	- Privacy and security	- Privacy and security	<ul> <li>Privacy and security</li> </ul>	- Privacy and security	- Privacy and security	- Privacy and security	

	<u>Week 1</u>	Week 2	Week 3	Week 4	<u>Week 5</u>	Week 6	Week 7
	What is a spreadsheet?	Modifying spreadsheets	What's the formula?	Calculate and duplicate	Event planning	Presenting data	Assessment, Consolidation
	<u>Learning Objective</u>	<u>Learning Objective</u>	<u>Learning Objective</u>	<u>Learning Objective</u>	<u>Learning Objective</u>	<u>Learning Objective</u>	and Review
Spring second half	<ul> <li>To identify questions which can be answered using data</li> </ul>	- To explain that objects can be described using data	<ul> <li>To explain that formulas can be used to produce calculated data</li> </ul>	<ul> <li>To apply formulas to data, including duplicating</li> </ul>	<ul> <li>To create a spreadsheet to plan an event</li> </ul>	- To choose suitable ways to present data	
	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Data and Information – Spreadsheets	<ul> <li>I can answer questions from an existing data set</li> <li>I can ask simple relevant questions which can be answered using data</li> <li>I can explain the relevance of data headings</li> </ul>	<ul> <li>I can apply an appropriate number format to a cell</li> <li>I can build a data set in a spreadsheet application</li> <li>I can explain what an item of data is</li> </ul>	<ul> <li>I can construct a formula in a spreadsheet</li> <li>I can explain the relevance of a cell's data type</li> <li>I can identify that changing inputs changes outputs</li> </ul>	<ul> <li>I can apply a formula to multiple cells by duplicating it</li> <li>I can create a formula which includes a range of cells</li> <li>I can recognise that data can be calculated using different operations</li> </ul>	<ul> <li>I can apply a formula to calculate the data I need to answer questions</li> <li>I can explain why data should be organised</li> <li>I can use a spreadsheet to answer questions</li> </ul>	<ul> <li>I can produce a graph</li> <li>I can suggest when to use a table or graph</li> <li>I can use a graph to show the answer to questions</li> </ul>	
Key Vocabulary	Variable, change, name, value	Variable, name, value, set, change	Formula, calculation, data, spreadsheet, input, output. cells, cell reference	Data, calculate, operation, formula, cell, range, duplicate, sigma	Propose, question, data set, data, organised, formula	Graph, chart, evaluate, results, comparison, questions, software, tools, data	
KS2 Computing NC Links	2.6	2.6	2.6	2.6	2.6	2.6	
Computing Strand	DI	DI	DI, ET, PG	DI, ET, PG	DI, ET	CM, DI, ET	
Education for a Connected World							

	Week 1	Week 2	Week 3	Week 4	<u>Week 5</u>	Week 6	Week 7
	What is 3D Modelling?	Making changes	Rotation and position	Making holes	Planning my own 3D model	Making my own 3D model	Assessment, Consolidation
	<u>Learning Objective</u>	Learning Objective	<b>Learning Objective</b>	<b>Learning Objective</b>	<b>Learning Objective</b>	<b>Learning Objective</b>	and Review
Summer first half	- To use a computer to create and manipulate three-dimensional (3D) digital objects	- To use digital tools to modify a 3D object	<ul> <li>To construct a digital 3D model of a physical object</li> </ul>	<ul> <li>To identify that physical objects can be broken down into a collection of 3D shapes</li> </ul>	<ul> <li>To design a digital model by combining 3D objects</li> </ul>	<ul> <li>To develop and improve a digital 3D model</li> </ul>	
	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Creating Media –  3D Modelling	<ul> <li>I can discuss the similarities and differences between 2D and 3D shapes</li> <li>I can explain why we might represent 3D objects on a computer</li> <li>I can select, move, and delete a digital 3D shape</li> </ul>	<ul> <li>I can change the colour of a 3D object</li> <li>I can identify how graphical objects can be modified</li> <li>I can resize a 3D object</li> </ul>	<ul> <li>I can position 3D objects in relation to each other</li> <li>I can rotate a 3D object</li> <li>I can select and duplicate multiple 3D objects</li> </ul>	<ul> <li>I can create digital 3D objects of an appropriate size</li> <li>I can group a digital 3D shape and a placeholder to create a hole in an object</li> <li>I can identify the 3D shapes needed to create a model of a real-world object</li> </ul>	<ul> <li>I can choose which 3D objects I need to construct my model</li> <li>I can modify multiple 3D objects</li> <li>I can plan my 3D model</li> </ul>	<ul> <li>I can decide how my model can be improved</li> <li>I can evaluate my model against a given criterion</li> <li>I can modify my model to improve it</li> </ul>	
Key Vocabulary	2D, 3D, 3D object, 3D space, view	2D, 3D, 3D object, 3D space, resize, colour, lift	Rotate, position, select, duplicate	Dimensions, placeholder, hole, group, ungroup	Resize, group, ungroup, design	Modify, evaluate, improve	
KS2 Computing NC Links	2.6, 2.7	2.6, 2.7	2.6, 2.7	2.6, 2.7	2.6, 2.7	2.6, 2.7	
Computing Strand	CM, ET	CM, ET	CM, ET	CM, ET	CM, DD, ET	CM, DD, ET	
Education for a Connected World	<ul> <li>Copyright and ownership</li> <li>Online relationships</li> </ul>	<ul><li>Copyright and ownership</li><li>Online relationships</li></ul>	<ul><li>Copyright and ownership</li><li>Online relationships</li></ul>	<ul><li>Copyright and ownership</li><li>Online relationships</li></ul>	<ul><li>Copyright and ownership</li><li>Online relationships</li></ul>	<ul><li>Copyright and ownership</li><li>Online relationships</li></ul>	

	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Week 7
	The micro:bit	Go with the flow	Sensing inputs	Finding your way	Designing a step counter	Making a step counter	Assessment, Consolidation
	<u>Learning Objective</u>	<u>Learning Objective</u>	<u>Learning Objective</u>	Learning Objective	<u>Learning Objective</u>	<u>Learning Objective</u>	and Review
Summer second half	- To create a program to run on a controllable device	- To explain that selection can control the flow of a program	- To update a variable with a user input	- To use a conditional statement to compare a variable to a value	<ul> <li>To design a project that uses inputs and outputs on a controllable device</li> </ul>	- To develop a program to use inputs and outputs on a controllable device	
Programming B –	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	Success Criteria	
Sensing	<ul> <li>I can apply my knowledge of programming to a new environment</li> <li>I can test my program on an emulator</li> <li>I can transfer my program to a controllable device</li> </ul>	<ul> <li>I can determine the flow of a program using selection</li> <li>I can identify examples of conditions in the real world</li> <li>I can use a variable in an if then else statement to select the flow of a program</li> </ul>	<ul> <li>I can experiment with different physical inputs</li> <li>I can explain that if you read a variable, the value remains</li> <li>I can use a condition to change a variable</li> </ul>	<ul> <li>I can explain the importance of the order of conditions in else/if statements</li> <li>I can modify a program to achieve a different outcome</li> <li>I can use an operand (e.g. &lt;&gt;=) in an if then statement</li> </ul>	<ul> <li>I can decide what variables to include in a project</li> <li>I can design the algorithm for my project</li> <li>I can design the program flow for my project</li> </ul>	<ul> <li>I can create a program based on my design</li> <li>I can test my program against my design</li> <li>I can use a range of approaches to find and fix bugs</li> </ul>	
Key Vocabulary	Micro:bit, MakeCode, input, process, output, flashing, USB	Selection, condition, if then else, variable, random	Input, selection, condition, variable, sensing, accelerometer	Compass, direction, variable, navigation	Micro:bit, design, task, algorithm, variable, step counter	Plan, create, code, test, debug	
KS2 Computing NC Links	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	2.1, 2.2, 2.3, 2.6	
Computing Strand	CS PG	CS PG	CS PG	CS PG	CS, DD, PG	CS, DD, PG	
Education for a Connected World							