YEAR 7	<b>Emerging</b> – a student whose understanding of the Y7 Computing skills is still emerging will be able to:	<b>Developing</b> – a student who is developing their Y7 Computing skills will be able to:	<b>Secure</b> – a student who is secure in the skills in the Y7 Computing curriculum will be able to:	<b>Mastered</b> – a student who has mastered the skills in the Y7 Computing curriculum will be able to:
Algorithms, Programming and Development	<ul> <li>Identify a basic understanding of algorithms, with the ability to predict an outcome.</li> <li>Design simple algorithms to meet a set standard and applying a 'block based' programming language.</li> <li>Debug simple logical and syntax errors.</li> <li>Describe what the purpose of if statements and loops are within a program.</li> <li>Read and navigate flowcharts to recreate algorithms.</li> <li>Assign variables and describe the multiple uses.</li> </ul>	<ul> <li>Write algorithms that constantly meet programming standards.</li> <li>Classify and categorise syntax errors and logical errors.</li> <li>Read flowcharts to predict the outcome of a program, without recreating the algorithm itself.</li> <li>Predict the outcomes of if statements and simple loops by reviewing code/flowcharts.</li> <li>Create algorithms that include basic variables to store information.</li> </ul>	<ul> <li>Discuss decomposition and apply the concept to build an algorithm in parts.</li> <li>Create algorithms that uses if statements with simple conditions (=== , &lt;, &gt;).</li> <li>Employ simple loops within your algorithms.</li> <li>Produce a flowchart, using an algorithm as a basis.</li> <li>Compose algorithms that dynamically use and update the values of variables.</li> </ul>	<ul> <li>Evaluate the effectiveness of algorithms, discussing potential alterative solutions to the set problem.</li> <li>Create algorithms that implement complex conditions (for example: !==, &lt;=, &gt;=).</li> <li>Design a flowchart without scaffolding and use it to create an algorithm that meets programming standards.</li> <li>Explain and justify your use of algorithms. Use high-level technical language.</li> </ul>
Data and Data Representation	<ul> <li>Identify basic data types (Integer and Strings).</li> <li>Perform simple researches for information.</li> </ul>	<ul> <li>Identify how data is stored on a computer (concept of binary).</li> <li>Create programs that use different data types (Strings and integers) in the correct context.</li> </ul>	<ul> <li>Identify how images are stored in binary (colour depth, bits, resolution).</li> <li>Identify complex data types (float, Boolean) and their uses in programs.</li> </ul>	<ul> <li>Perform more complex searches for information, using Boolean and other operators.</li> <li>Identify how the resolution of an image effects the file size.</li> <li>Create programs that use complex data types (Boolean, float) to solve problems.</li> </ul>
Hardware and Processing	<ul> <li>Identify the difference between hardware and select application software (make link to programs created).</li> <li>Identify the basic parts of a computer (mouse, keyboard, monitor, tower) and make links to the hardware used in class (micro-bits, robotics)</li> </ul>	<ul> <li>Explain the difference between various software applications (IDEs, Browsers, Operating Systems).</li> <li>Describe/evaluating the inputs and outputs of a computer and relate it to the parts of a computer.</li> </ul>	<ul> <li>Describe and give examples of operating systems. Make links to devices that use at home/school.</li> </ul>	<ul> <li>Analyse and debate the benefits and disadvantages of the computer ecosystem.</li> <li>Discuss impacts on culture, technology, ethical considerations and legislation.</li> </ul>

## The Buckingham School Computing

Communication and Processing	•	Search for help on scripting using the web, illustrating your points (flight plan) and select information wisely from web searches. Explain how computer use can be done safely and responsibly. Discuss links on reporting unacceptable content and potential risks of being online. Discuss what is acceptable and unacceptable online behaviour and review potential consequences	•	Understand how search engines produce results and show an awareness of big data (information companies store about you) (algorithm and ads). Produce action points for advising your peers on safe and responsible usage of the internet and promote <u>range of ways</u> to report concerns.	•	Explain the ways that you are vulnerable on the internet, including Malware and other types of attacks, social engineering. Justify why cyber security is necessary and show awareness of direction cyber-crime is moving, devices, bit mining.	•	Review current affair issues in online safety and cyber-crime. Independently raise awareness and lead initiatives to improve school online safety. Promote awareness of how data on the internet requires careful protection, guarding both your identity and your privacy.
---------------------------------	---	---	---	--	---	--	---	--

## PART 1

YEAR 8	<b>Emerging</b> – a student whose understanding of the Y7 Computing skills is still emerging will be able to:	<b>Developing</b> – a student who is developing their Y7 Computing skills will be able to:	<b>Secure</b> – a student who is secure in the skills in the Y7 Computing curriculum will be able to:	<b>Mastered</b> – a student who has mastered the skills in the Y7 Computing curriculum will be able to:
Algorithms, Programming and Development	<ul> <li>Define and occasionally apply programming standards.</li> <li>Design simple algorithms to meet a set standard and applying a "text-based" programming language.</li> <li>Describe what the purpose of ifelse statements and the difference between while and for loops.</li> <li>Read and navigate flowcharts to recreate algorithms.</li> <li>Assign variables and describe the multiple uses.</li> <li>Identify the purpose of custom functions and all related terminology (parameters, arguments, function calling etc)</li> </ul>	<ul> <li>Write algorithms that constantly meet programming standards.</li> <li>Classify and categorise syntax errors and logical errors.</li> <li>Read flowcharts to predict the outcome of a program, without recreating the algorithm itself.</li> <li>Predict the outcomes of ifelse statements and complex loops by reviewing code/flowcharts.</li> <li>Create algorithms that include basic variables to store information- while defining the correct data type of the variable.</li> <li>Compose an algorithm that reuses code in a simple function- without parameters.</li> </ul>	<ul> <li>Discuss decomposition and apply the concept to build an algorithm in parts.</li> <li>Create algorithms that uses if statements with complex and complex conditions (===, &lt;, &gt;, !==, &lt;=, &gt;=)</li> <li>Employ for and while loops within your algorithms.</li> <li>Design a flowchart without scaffolding and use it to create an algorithm that meets programming standards.</li> <li>Compose algorithms that dynamically use and update the values of variables, while selecting the most suitable data type.</li> <li>Compose an algorithm that reuses code, using parameters to increase the reusability of your code.</li> </ul>	<ul> <li>Evaluate the effectiveness of algorithms, discussing potential alternative solutions to the set problem.</li> <li>Create algorithms that implement boolean logic (AND, OR, NOT)</li> <li>Explain and justify your use of algorithms. Use high-level technical language.</li> <li>Review and refine all algorithm, with a focus on programming standards and abstraction.</li> <li>Design an algorithm that uses abstraction to apply complex functions (recursive) to your solutions.</li> </ul>

## The Buckingham School Computing

Data and Data Representation	•	Perform simple researches for information.	•	Identify how data is stored on a computer (concept of binary).	•	Perform more complex searches for information, using Boolean and other	•	Identify how the resolution of an image affects the file size.
	•	Create programs that use different data types (Strings and integers) in the correct context.	•	Identify how images are stored in binary (colour depth, bits, resolution).	•	operators. Identify complex data types (float, Boolean) and their uses in programs.	•	Identify how sound is stored on a computer. Recreate images from binary data.

The Buckingham School Computing

Hardware and Processing	<ul> <li>Identify the difference between hardware and select application software (make link to programs created).</li> <li>Identify the basic parts of a computer (mouse, keyboard, monitor, tower) and make links to the hardware used in class (micro-bits, robotics)</li> </ul>	<ul> <li>Explain the difference between various software applications (IDEs, Browsers, Operating Systems).</li> <li>Describe/evaluating the inputs and outputs of a computer and relate it to the parts of a computer.</li> </ul>	<ul> <li>Describe and give examples of operating systems. Make links to devices that use at home/school.</li> </ul>	<ul> <li>Analyse and debate the benefits and disadvantages of the computer ecosystem. Discuss impacts on culture, technology, ethical considerations and legislation.</li> </ul>
Communication and Processing	<ul> <li>Search for help on scripting using the web, illustrating your points (flight plan) and select information wisely from web searches.</li> <li>Explain how computer use can be done safely and responsibly. Discuss links on reporting unacceptable content and potential risks of being online.</li> <li>Discuss what is acceptable and unacceptable online behaviour and review potential consequences</li> </ul>	<ul> <li>Understand how search engines produce results and show an awareness of big data (information companies store about you) (algorithm and ads).</li> <li>Produce action points for advising your peers on safe and responsible usage of the internet and promote range of ways to report concerns.</li> </ul>	<ul> <li>Explain the ways that you are vulnerable on the internet, including Malware and other types of attacks, social engineering.</li> <li>Justify why cyber security is necessary and show awareness of direction cyber-crime is moving, devices, bit mining.</li> </ul>	<ul> <li>Review current affair issues in online safety and cyber-crime. Independently raise awareness and lead initiatives to improve school online safety.</li> <li>Promote awareness of how data on the internet requires careful protection, guarding both your identity and your privacy.</li> </ul>

## PART 2

YEAR 8	<b>Emerging</b> – a student whose understanding of the Y7 Computing skills is still emerging will be able to:	<b>Developing</b> – a student who is developing their Y7 Computing skills will be able to:	<b>Secure</b> – a student who is secure in the skills in the Y7 Computing curriculum will be able to:	<b>Mastered</b> – a student who has mastered the skills in the Y7 Computing curriculum will be able to:
--------	---	---	---	---