Comberton VC Y7 Computing Depth of Understanding Descriptors

Grade	Digital literacy	IT	Computer science
8	appropriately respond to others' evaluation of my work including my peer and teachers, develop a test plan for others to use; plan most key elements of a product; know about accessibility features and how to use them; understand some the legal implications of my online behaviour; understand different methods of different storage devices; understand file size and file types; filter and refine my search	use advanced features of the communication tool; work collaboratively with others to edit documents; use small range of functions and present data is an appropriate way; include a few advanced features to make a product easy to use and help reduce error; use AI LLMs appropriately with appropriate prompts; use collaboration tools professionally and effectively	write programs in 2 or more languages; solve simple problems using computer programs; convert instructions into algorithms. understand the different types of errors (logical, syntax) and how to fix them. write code with some error checking; use subroutines and lists; explain with examples a range computer internal and external components; understand how binary is used to represent sound images; add binary numbers; solve some intermediate level logic problems
6	make some suggestions for improving my products; carry out a relevant test and fix it where am able; plan some key elements of a product; explain why the product design is suitable for the purpose and audience; know how to minimise the risk of my web use. know how to behave appropriately and respectfully online; have an appropriate folder and file structure. save my work regularly and make regular backups of my work. have some understanding of file size and file types. use the cloud to access the same files at home and in school; use a search engine to find appropriate content.	send and receive communication, appropriately. ; share my files with others (including teachers and peers); use small range of basic functions and plot charts; include some high level features to make a product easy to use and help reduce errors, ; source and edit a range suitable artefacts to complete a product, ; use a range of tools to achieve an outcome; recall the key figures and understand their contribution; use AI but not always in an appropriate way; use collaboration tools somewhat effectively and professionally	Write a program that use variables, iteration and selection; debug simple programs independently; use flow charts to design simple algorithms that requires sequencing; explain how linear search and bubble sort work; program hardware, know about different internal computer components. know the difference between wireless and wired networks; conceptualise simple circuits using logic gates. understand how sound is stored in computers; solve most simple logic problems; explain the terms abstraction and decomposition and know how they apply to computer science
4	describe a range of relevant good and bad things about my products, carry out a basic test; plan some elements of a product; explain why the product design is suitable for either the purpose or audience; understand the risks of using web technologies. know how to create a strong password and not to share them. ; recognise content that makes me feel uncomfortable; save files with appropriate names and attempt at folder organisation. know that the cloud allows me to access the same files from home and in school; use a search engine to find appropriate content.	send and receive electronic communication; sort data and use make some basic calculations and appropriate formatting; create a basic product, include some basic features to make a product easy to use and help reduce errors, source some suitable artefacts to complete a product; recall the key figures and understand their contribution; use AI LLMs but not always appropriately; appropriate; use collaboration tools but not always appropriately	write a simple program and convert tasks into a sequence of instructions, the program has user input and output. ; debug with some help. understand what a variable is; know about computer peripheral devices: Inputs, outputs, and storage; Know how to convert between binary and denary, and know some logic gates. know the difference between vector and bitmap images and can explain how a computer stores binary and bitmap images; identify patterns in repeating code; solve most simple logic problems; formulate a simple problem as an algorithm. understand how linear search algorithm works.
2	describe some good and bad things about my digital products, understand what a test is; meet a few end user needs; describe the purpose of the product and who it is for; know not to put personal information about myself on the internet.; know who to contact to report concerns; know how to behave kindly online; find a file that has been previously saved; understand why we need to save files; know what the cloud is; use a search engine to find content	access electronic communication tool such as email; existing spreadsheet and add and remove values with some attempt and formatting; create a very basic digital product; select an appropriate tool for a task; identify some basic features to make a product easy to use and / or help reduce error source some artefacts; use AI LLMs with support; use collaboration tools with support	understand the need for input and output; edit simple programs that requires a sequence of instruction; describe the difference between hardware and software; know about computer peripheral devices: Inputs, outputs; **k**now what binary and ASCII are and now how to convert between them; describe what vector or bitmap images are; encode and decode between letters and numbers; explain what an algorithm is; solve some simple logic problems.

Comberton VC Y8 Computing Depth of Understanding Descriptors

Grade	Digital literacy	IT	Computer science
8	critically analyse others' evaluation of my work justifying where agree and disagree. ; carry out a range of relevant tests; plan all key elements of a product; use accessibility features appropriately; understand most of the legal implications of my online behaviour; zip and compress files and explain why this is necessary; partially acknowledge sources and ; consider bias and verify the sources of content	use advanced features of the communication tool, appropriately; use range of functions and present data is an appropriate way; use advanced features to improve efficiency (e.g. mail merge), ; create a high quality outcome	write complex programs in multiple languages and can translate between different languages; solve complex problems. write code with robust error checking; calculate the size of sound files and images; solve all intermediate level logic problems, ; break complex problems into small parts
6	appropriately respond to others' evaluation of my work including my peer and teachers, develop a test plan for others to use; plan most key elements of a product; know about accessibility features and how to use them; understand some the legal implications of my online behaviour; understand different methods of different storage devices; understand file size and file types; filter and refine my search	use advanced features of the communication tool; work collaboratively with others to edit documents; use small range of functions and present data is an appropriate way; include a few advanced features to make a product easy to use and help reduce error; use AI LLMs appropriately with appropriate prompts; use collaboration tools professionally and effectively	write programs in 2 or more languages; solve simple problems using computer programs; convert instructions into algorithms. understand the different types of errors (logical, syntax) and how to fix them. write code with some error checking; use subroutines and lists; explain with examples a range computer internal and external components; understand how binary is used to represent sound images; add binary numbers; solve some intermediate level logic problems
4	make some suggestions for improving my products; carry out a relevant test and fix it where am able; plan some key elements of a product; explain why the product design is suitable for the purpose and audience; know how to minimise the risk of my web use. know how to behave appropriately and respectfully online; have an appropriate folder and file structure. save my work regularly and make regular backups of my work. have some understanding of file size and file types. use the cloud to access the same files at home and in school; use a search engine to find appropriate content.	send and receive communication, appropriately. ; share my files with others (including teachers and peers); use small range of basic functions and plot charts; include some high level features to make a product easy to use and help reduce errors, ; source and edit a range suitable artefacts to complete a product, ; use a range of tools to achieve an outcome; recall the key figures and understand their contribution; use AI but not always in an appropriate way; use collaboration tools somewhat effectively and professionally	Write a program that use variables, iteration and selection; debug simple programs independently; use flow charts to design simple algorithms that requires sequencing; explain how linear search and bubble sort work; program hardware, know about different internal computer components. know the difference between wireless and wired networks; conceptualise simple circuits using logic gates. understand how sound is stored in computers; solve most simple logic problems; explain the terms abstraction and decomposition and know how they apply to computer science
2	describe a range of relevant good and bad things about my products, carry out a basic test; plan some elements of a product; explain why the product design is suitable for either the purpose or audience; understand the risks of using web technologies. know how to create a strong password and not to share them. ; recognise content that makes me feel uncomfortable; save files with appropriate names and attempt at folder organisation. know that the cloud allows me to access the same files from home and in school; use a search engine to find appropriate content.	send and receive electronic communication; sort data and use make some basic calculations and appropriate formatting; create a basic product, include some basic features to make a product easy to use and help reduce errors, source some suitable artefacts to complete a product; recall the key figures and understand their contribution; use AI LLMs but not always appropriately; appropriate; use collaboration tools but not always appropriately	write a simple program and convert tasks into a sequence of instructions, the program has user input and output. ; debug with some help. understand what a variable is; know about computer peripheral devices: Inputs, outputs, and storage; Know how to convert between binary and denary, and know some logic gates. know the difference between vector and bitmap images and can explain how a computer stores binary and bitmap images; identify patterns in repeating code; solve most simple logic problems; formulate a simple problem as an algorithm. understand how linear search algorithm works.

Comberton VC Y9 Computing Depth of Understanding Descriptors

Grade	Digital literacy	IT	Computer science
8	have made appropriate judgements leading to possible improvements to my product based on others' and my own feedback. ; carry out a fully range of test that meets every objective and user requirement; create a plan of sufficient quality and detail that another person could easily follow and achieve similar outcomes; create a product that is suitable for a range of audiences with accessibility needs; completely understand how my digital footprint can impact by future life; save files in appropriate format and permissions; fully acknowledgement sources, evaluate reliability and relevance and verify content, selecting, carrying out methodical research; seek feedback from others through online questionnaires for example; plan is of sufficient quality and detail that another person could follow and achieve intended outcome; provide alternative plans; fully document a full range of tests; have a version control of documents.	record and manipulate macros; include a range of advanced features to make a product easy to use, help reduce errors and improve efficiency; create a product that is near-professional quality; use advanced features to improve efficiency (e.g. mail merge); create a high-quality outcome; use AI in highly creative ways; always use collaboration tools in a highly professional way	Write complex programs that that use functions which pass and return parameters; debug complex programs independently; solve some complex logic problems; break complex problems into small parts; confidently solve complex computational challenges that requires programs of some length and multiple programming constructs; solve most complex logic problems; use abstraction and pattern recognition to solve complex problems
6	critically analyse others' evaluation of my work justifying where agree and disagree. ; carry out a range of relevant tests; plan all key elements of a product; use accessibility features appropriately; understand most of the legal implications of my online behaviour; zip and compress files and explain why this is necessary; partially acknowledge sources and ; consider bias and verify the sources of content	use advanced features of the communication tool, appropriately; use range of functions and present data is an appropriate way; Use AI in interesting ways; always use collaboration tools in a professional way	write complex programs in multiple languages and can translate between different languages; solve complex problems. write code with robust error checking; calculate the size of sound files and images; solve all intermediate level logic problems, ; break complex problems into small parts
4	appropriately respond to others' evaluation of my work including my peer and teachers, develop a test plan for others to use; plan most key elements of a product; know about accessibility features and how to use them; understand some the legal implications of my online behaviour; understand different methods of different storage devices; understand file size and file types; filter and refine my search	use advanced features of the communication tool; work collaboratively with others to edit documents; use small range of functions and present data is an appropriate way; include a few advanced features to make a product easy to use and help reduce error; use AI LLMs appropriately with appropriate prompts; use collaboration tools professionally and effectively	write programs in 2 or more languages; solve simple problems using computer programs; convert instructions into algorithms. understand the different types of errors (logical, syntax) and how to fix them. write code with some error checking; use subroutines and lists; explain with examples a range computer internal and external components; understand how binary is used to represent sound images; add binary numbers; solve some intermediate level logic problems
2	make some suggestions for improving my products; carry out a relevant test and fix it where am able; plan some key elements of a product; explain why the product design is suitable for the purpose and audience; know how to minimise the risk of my web use. know how to behave appropriately and respectfully online; have an appropriate folder and file structure. save my work regularly and make regular backups of my work. have some understanding of file size and file types. use the cloud to access the same files at home and in school; use a search engine to find appropriate content.	send and receive communication, appropriately. ; share my files with others (including teachers and peers); use small range of basic functions and plot charts; include some high level features to make a product easy to use and help reduce errors, ; source and edit a range suitable artefacts to complete a product, ; use a range of tools to achieve an outcome; recall the key figures and understand their contribution; use AI but not always in an appropriate way; use collaboration tools somewhat effectively and professionally	Write a program that use variables, iteration and selection; debug simple programs independently; use flow charts to design simple algorithms that requires sequencing; explain how linear search and bubble sort work; program hardware, know about different internal computer components. know the difference between wireless and wired networks; conceptualise simple circuits using logic gates. understand how sound is stored in computers; solve most simple logic problems; explain the terms abstraction and decomposition and know how they apply to computer science