Y8 Computing Curriculum Progression Map

	Term 1	Term 2	Term 3	Term 4	Term 5	Term 6
Dates	Wednesday, 1 September – Friday, 22 October 2021	Monday, 1 November – Wednesday, 22 December	Wednesday, 5 January – Friday, 18 February 2022	Monday, 28 February – Friday, 8 April 2022	Monday, 25 April – Friday, 27 May	Monday, 6 June – Friday, 15 July 2022
Weeks	8	7	7	6	5	6
Lessons	8	7	7	6	5	6
Inset						
Unit Title	Computing systems	Computing Systems	Developing for the web	Developing for the web	Introduction to Python programming	Representations – from clay to silicon
Sequence	Students set up folder structure for storing work recap over basic storage rules, sensible file names. Recall that a general-purpose computing system is a device for executing programs. Recall that a program is a sequence of instructions that specify operations that are to be performed on data. Explain the difference between a general-purpose computing system and a purpose-built device. Describe the function of the hardware components used in computing systems. Describe how the hardware components used in computing systems work together in order to execute programs Recall that all computing systems, regardless of form, have a similar structure ('architecture'). Analyse how the hardware components used in computing systems work together in order to execute programs. Define what an operating system is, and recall its role in controlling program execution	Describe the NOT, AND, and OR logical operators, and how they are used to form logical expressions. Use logic gates to construct logic circuits, and associate these with logical operators and expressions. Describe how hardware is built out of increasingly complex logic circuits. Recall that, since hardware is built out of logic circuits, data and instructions alike need to be represented using binary digits. Provide broad definitions of 'artificial intelligence' and 'machine learning'. Identify examples of artificial intelligence and machine learning in the real world.	Describe what HTML is. Use HTML to structure static web pages. Modify HTML tags using inline styling to improve the appearance of web pages. Display images within a web page. Apply HTML tags to construct a web page structure from a provided design. Describe what CSS is. Use CSS to style static web pages. Learn the benefits of using CSS to style pages instead of in-line formatting.	Complete Web/HTML - Use CSS to style static web pages. Learn the benefits of using CSS to style pages instead of in-line formatting. Create hyperlinks to allow users to navigate between multiple web pages Implement navigation to complete a functioning website. Complete summative assessment.	Python Programming. Describe what algorithms and programs are and how they differ. Recall that a program written in a programming language needs to be translated in order to be executed by a machine. Write simple Python programs that display messages, assign values to variables, and receive keyboard input. Locate and correct common syntax errors. Describe the semantics of assignment statements. Use simple arithmetic expressions in assignment statements to calculate values. Complete Python Programming - Receive input from the keyboard and convert it to a numerical value. Use relational operators to form logical expressions. Use binary selection (if, else statements) to control the flow of program execution. Generate and use random integers. Use multi-branch selection (if, elif, else statements) to control the flow of program execution. Use iteration (while loops) to control the flow of program execution.	Complete Python Programming (continued) Use variables as counters in iterative programs. Combine iteration and selection to control the flow of program execution. Use Boolean variables as flags. List examples of representations. Recall that representations are used to store, communicate, and process information. Provide examples of how different representations are appropriate for different tasks. Recall that characters can be represented as sequences of symbols and list examples of character coding schemes. Measure the length of a representation as the number of symbols that it contains. Provide examples of how symbols are carried on physical media. Explain what binary digits (bits) are, in terms of familiar symbols such as digits or letters. Measure the size or length of a sequence of bits as the number of binary digits that it contains. Describe how natural numbers are represented as sequences of binary digits. Convert a decimal number to binary and vice versa. Convert between different units and multiples of representation size. Provide examples of the different ways that binary digits are physically represented in digital devices. . Online Safety – Privacy and Security. How to make safe and secure online payments. Cookies, how my online browsing can be tracked and used by others e.g. adware. Online services have terms and conditions that govern their use.

Key Building Blocks	Introduce students to the different layers of computing systems: from programs and the operating systems, to the physical components that store and execute these programs, to the fundamental binary building blocks that these components consist of. Provide an overview of how computing systems operate. Introduce artificial intelligence and open source software.	Introduce students to the different layers of computing systems: from programs and the operating systems, to the physical components that store and execute these programs, to the fundamental binary building blocks that these components consist of. Provide an overview of how computing systems operate. Introduce artificial intelligence and open source software.	Understand the technologies that make up the internet and World Wide Web. Starting with an exploration of the building blocks of the World Wide Web, HTML, and CSS. By the end of the unit, learners will have created a functioning website.	Students understand through demonstration of tasks the areas surrounding privacy and security.	Students will learn how to develop simple programs involving input and output, and gradually move on through arithmetic operations, randomness, selection, and iteration. Emphasis is placed on tackling common misconceptions and explaining the mechanics of program execution.	Students will be introduced to binary digits and how they can be used to represent text and numbers
Retrieval Practices	Low stakes quiz, Do now match definitions tasks, Demonstrating presentations. Recap and demonstration of skills to ensure understanding - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout	Low stakes quiz, Do now match definitions tasks, Demonstrating presentations. Recap and demonstration of skills to ensure understanding - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout	Low stakes quiz, Do now, Demonstrating skills, presentations. Recap of skills to ensure understanding of task - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout	Low stakes quiz, Do now, Demonstrating skills, presentations. Recap of skills to ensure understanding of task - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout	Low stakes quiz, Do now, Demonstrating skills, presentations. Recap of skills to ensure understanding of task - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout	Low stakes quiz, Do now match definitions tasks, Demonstrating presentations. Recap and demonstration of skills to ensure understanding - Demonstration using examples in the real world (careers) and where it applies to task - AB Tutor Computer Control to ensure understanding and re-cap/VF - VF throughout
Key Skills	Language & Vocabulary Written communication Planning Analysis Evaluation	Language & Vocabulary Written communication Planning Analysis Evaluation	Language & Vocabulary Written communication Planning Analysis Problem solving Evaluation	Language & Vocabulary Written communication Design Planning Analysis Evaluation	Language & Vocabulary Written communication Planning Analysis Problem solving Evaluation	Language & Vocabulary Written communication Planning Problem solving Analysis Evaluation
Literacy	Written & Oral communication Tier 2 & 3 vocab development	Written & Oral communication Tier 2 & 3 vocab development	Written & Oral communication Tier 2 & 3 vocab development	Written & Oral communication Tier 2 & 3 vocab development	Written & Oral communication Tier 2 & 3 vocab development	Written & Oral communication Tier 2 & 3 vocab development
Tier 2	Computer, device, program, software, processor, instructions, Secure	Computer, device, program, software, processor, instructions, Secure	Website, Webpage, Internet, Image, Button	Website, Webpage, Internet, Image, Button	Program, language, input, output, randomness	symbols, storage, communication, processing, characters, coding
Tier 3	System, Free and open source software, Artificial intelligence, machine learning, Logical operator, expressions, Logic gates	System, Free and open source software, Artificial intelligence, machine learning, Logical operator, expressions, Logic gates	HTTP, HTML, URL, hyperlink, site map,	HTTP, HTML, URL, hyperlink, site map,	Pair programming, Algorithm, translation, execution, interpreter, variables, operators, integer, string, Boolean, iteration,	Representation, conversion, binary

Numeracy	Antikythera mechanism Babbage's Analytical Machine Calculators	Antikythera mechanism Babbage's Analytical Machine Calculators	File size Image size	File size Image size	Algorithms	Binary conversions
Formative Assessment	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software	Verbal feedback throughout each lesson Re-cap of task and assignment using Computer Control monitoring software
Summative Assessment	a quiz that will assess their understanding of the computing systems concepts that they have encountered throughout the unit.	a quiz that will assess their understanding of the computing systems concepts that they have encountered throughout the unit.	End of unit grading (portfolio of evidence)	Showcase of project and self/peer assessment.	Assessment quiz	Quiz and puzzle activity at the end of the unit
Spiritual	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Self-assessments, peer assessments and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.
Moral	Students will consider what is appropriate to send in an email and what is inappropriate. Students will consider cyberbullying and how it could affect others.	Students will consider what is appropriate to send in an email and what is inappropriate. Students will consider cyberbullying and how it could affect others.	Students will learn about information on websites.	Students will consider privacy and the implications of breaking the law	Students will consider privacy and the implications of breaking the law	
Social	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.	Peer work and assessments as and when appropriate and reflective evaluations allow students to consider their progress and support the progress of others, whilst also building relationships.
Cultural	Students will learn how computers have developed through history into the devices they are familiar with today.	Students will learn how computers have developed through history into the devices they are familiar with today.	Students will learn about the history of the internet and WWW (HTML) and how it has developed into something they use every day.	How www began using HTML. Students will gain an understanding of how to protect themselves online.	Students will gain an understanding of how to protect themselves online.	Students will consider how characters and digits can be displayed in different ways.
British Values	Mutual respect, the rule of law	Mutual respect, the rule of law	Mutual respect, the rule of law	Mutual respect, the rule of law	Mutual respect, the rule of law	Mutual respect, the rule of law
Gatsby 4	Archivist, Business analyst, Data entry clerk, Robotics engineer, Systems analyst	Archivist, Business analyst, Data entry clerk, Robotics engineer, Systems analyst	Web developer, Web designer, Web content manager, Social media manager, Network managers,	Digital marketer, Web content editor, government online fraud center.	App developer, Computer games developer, Computer games tester, Programmer, Software developer,	Cyber intelligence officer, Data entry clerk, Forensic computer analyst, Information scientist, Programmer, Software developer