## Y8 Computing Curriculum Progression Map

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|  | **Term 1** | **Term 2** | **Term 3** | **Term 4** | **Term 5** | **Term 6** |
| **Dates** | Monday 5th September – Friday, 21 October 2022 | Monday, 1 November – Wednesday, 21 December 2022 | Monday, 9 January – Friday, 10 February 2023 | Monday, 20 February – Friday, 31 March 2023 | Monday, 17 April – Friday, 26 May 2023 | Monday, 5 June – Friday, 19 July 2023 |
| **Weeks** | 8 | 7 | 5 | 6 | 6 | 6 |
| **Lessons** | 8 | 7 | 5 | 6 | 6 | 6 |
| **Inset** |  |  |  |  |  |  |
| **Unit Title** | Computing systems | Computing Systems | Developing for the web (HTML) | Complete Developing for the web (HTML) /  Introduction to Programming in Python | Programming in Python | Binary and Logic Gates |
| **Sequence** | Folder set up  Online safety  Managing online information  Privacy and Security  Copyright and Ownership  Unit overview #Antikkythera  The Pascaline, the stepped reckoner, and Babbage’s Analytical Engine  What is a computer - different types of computer?  Software - different software examples  Under the hood 1 ‘Check the specs’  \* Reading opportunities in the presentation tasks and Knowledge organiser | Under the hood 2 Storage, memory  Under the hood 3 processor  Under the hood 4 - Input and output devices  Operating systems  \*Careers in Computing Systems.  Managing Online Information  Privacy and Security  Copyright and Ownership  \* Reading opportunities in the presentation tasks and Knowledge organiser  Start to learn basics of HTML using tags to create first webpage in Notepad | 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.  Careers – web design  \* Reading opportunities in the presentation tasks, the CGP KS3 Computing book HTML p.50-p.51. and Knowledge organiser | Complete Web/HTML tasks  Use CSS to style static web pages. Benefits of using CSS to style pages instead of in-line formatting.  Create hyperlinks to allow users to navigate between 2 or more web pages - navigation.  Python Programming  Describe what algorithms and programs are and how they differ.  Write simple Python programs that display messages, assign values to variables, and receive keyboard input.  Locate and correct common syntax errors.  Use simple arithmetic expressions in assignment statements to calculate values.  \* Reading opportunities in the presentation tasks, the CGP KS3 Computing book Programming in Python p.117-p.120. and Knowledge organiser | Python Programming continued  Receive input from the keyboard and convert it to a numerical value.  Use relational operators to form logical expressions.  Use if, else statements, to control the flow of program execution.  Generate and use random integers.    Use if, elif, else statements to control the flow of program execution.  Use iteration (while loops) to control the flow of program execution.  Use variables as counters in iterative programs.  Combine iteration and selection to control the flow of program execution.  Boolean variables.  Careers –Programming  \* Reading opportunities in the presentation tasks, the CGP KS3 Computing book Programming in Python p.117-p.120. and Knowledge organiser | Binary digits (bits)  Measuring the size or length of a sequence of bits  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. Different ways that binary digits are physically represented in digital devices.  Logic Gates  Describe NOT, AND, and OR logical operators, and how they are used to form logical expressions.  Use logic gates to construct logic circuits.  Hardware and complex logic circuits. Artificial intelligence and machine learning in the real world.  Careers in Computing  .  \* Reading opportunities in the presentation tasks, the CGP KS3 Computing book Binary and logic gates p.64-66 and Knowledge organiser |
| **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** | 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 | 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 | 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 | 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 | 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 | 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 | input, output, 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, logic, circuits |
| **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 learn about safe and responsible use of digital technology. | Students learn about safe and responsible use of digital technology. | Students will learn about information on websites. Students learn about safe and responsible use of digital technology. | Students will consider privacy and the implications of breaking the law | 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 marketing, 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 |