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|  | **LONG TERM CURRICULUM PLAN : KS3 & KS4** | **Subject: COMPUTING** |

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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year 7** | **First two weeks of lessons Year 7 logging onto the school systems.**(Concepts - learn about ways to stay safe online and what to look out for when on-line).(Skills - knowing what to look out for while online, observation skills building awareness.)**E-safety**OverviewUsing ICT Online (1)How to stay safe online/Dangers of ICT(1)Minimizing the risks of using ICT(1)E-safety ideas and Design, educating people of the dangers(2)Extended writing(1)Assessment (1) | (Concepts - different types of hardware that are used within a computer system and what they are used for.)(Skills - being able to explain and justify what hardware does what within the system.)**Hardware**OverviewComponents of a computer (1)Internal parts of a computer and their function (2)Input and output devices and their function (1)Storage devices(1)Assessment (1) | (Concepts - what the different types of software are that are used and that there are 3 different categories of software that are used within a computer system.)(Skills - being able to explain and justify what software does what within the system.)**Software**OverviewWhat computer software is and identify the 3 main types of computer software (3).Different types of software and its uses(1)Create a poster that is factual and informative to help explain the different types of software(2).Assessment (1) | (Concepts - what block‑based programming is and its role within a computer system. How different bits of code link together.)(Skills - logic and reasoning and pattern recognition.)**Scratch**OverviewWhat are flowcharts (1)Understanding different tools (1)Loops and their functions (2).Sensing and Variables.(2)Virtual pet. (1) | (Concepts - what block‑based programming is and its role within a computer system. How different bits of code link together.)(Skills - logic and reasoning and pattern recognition.)**Scratch** (cont.)OverviewCreating a virtual pet(1)Scratch tasks and evidence to show understanding from previous learning(4)Assessment (1) | (Concepts - why order isImportant.)(Skills -computational thinking and logic. Ordering of instructions.)**Computational Thinking and Logic**OverviewWhat is Computational Thinking(1)Binary and Linear searches(1)Algorithms, Flowcharts and Pseudocode(3)Sorting data(1)Assessment (1) |

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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer** |
| **Year 8** | (Concepts that there aredifferent types of networks and that we use the biggest type of network on a daily basis.Networks are not new.)(Skills - logic and order, justification, and explanation.)**Networks**OverviewWhat is a network? (1)Different types of networks (2)Why we need networks (3)Assessment (1)  | (Concepts -that there are lots of different types of storage devices and areas within a computer system where information is stored)(Skills - reasoning and awareness of the different types of storage)**Storage**OverviewDifferent types of storage, RAM and ROM(2)Secondary storage and the 3 main types (2)Primary storage and what it is used for (2)Assessment (1) | (Concepts - what block‑based programming is and its role within a computer system. How different bits of code link together)(Skills - logic and reasoning and pattern recognition)**Micro bits (6)**OverviewIntroduction to microbit , what it is and how it works. Writing simple programs(3)Making the micro:bit scroll text(1)Using more of the micro:bit functions such as buttons (1)Know how to explain code you have created in Block Editor (1)Loop functions (1)If StatementsIf/else (1)Assessment (1) | (Concepts - what block‑based programming is and its role within a computer system. How different bits of code link together)(Skills - logic and reasoning and pattern recognition)**Python understanding**OverviewWhat is python - strings and variables(3)Python numbers and Arithmetic (3)Assessment (1) | (Concepts - why websites are designed the way that they are and the processes that are gone through to make one).(Skills -being able to draw on their use of websites and what makes a good website when it comes to the design of it)**Introduction to web design**OverviewWhat is a feature(1)Why are websites designed the way they are?(3)What are mind maps(1)What are mood boards(1)Webpage layouts (3)Creation of website(3)Evaluation (1)Assessment (1) |

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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year 9** | (Concepts -that there are different cpu infrastructures and how information is usedand stored is different.)(Skills - explanation and understanding and justification.)**CPU infrastructure**OverviewWhat is a CPU, what it’s role is within the computer system (2)What is an embedded system (2)What is memory, and ROM and RAM (2)Assessment (1) | (Concepts - all information within a computer system is stored within binary digits.)(Skills - logical ordering of information. conversion of data)**Binary to decimal to hex conversions/logic gates**OverviewLogic gates (1)Truth tables (1)Binary to decimal to hex conversions (2)Challenges (3)Assessment (1) | (Concepts - what text‑based programming is and its role within a computer system. How different bits of code link together)(Skills - logic and reasoning and pattern recognition)**Review of the basics in Python**OverviewPython strings and variables refresh (4)Python number (3) | (Concepts - what text‑based programming is and its role within a computer system. How different bits of code link together)(Skills - logic and reasoning and pattern recognition)**Python Numbers and****operators**OverviewPython numbers (1)Python Challenges (5)Assessment (1) | (Concepts - learning about the different ways that graphics are made and why they are made the way that they are.)(Skills - graphic design and editing skills. tools and function of key software)**Photoshop Skills Project**Overview | **Photoshop Skills Project**Assessment (1) |

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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year 10** | **1.1 Systems architecture**OverviewWhat are the different parts of the CPU?How the cpu works (5)How the CPU stores its information (2)What is an embedded system (2)Assessment (1)**1.2 Memory and storage (10)**OverviewDescribe the different types of computer memory by explaining and Comparing the use of RAM and ROM (4)Explain the need for virtual memory and Describe Flash Memory (2)Assessment (1) | **1.3 Computer networks, connections and protocols**OverviewWhat is a network?LAN, WAN. (2)Client Server and Peer to Peer networks. (2)What is network hardware and what is needed to create a network (8)Assessment (1) | **1.4 Network security (7)**OverviewWhat is security?Cyber attacksBotnets (4)SQL Injection (2)Assessment (1)**1.5 Systems software (8)**OverviewWhat is system software and how is it used within a computer system (4)What is utility software and how does it help a computer (4)Assessment (1) | **1.6 Ethical, legal, cultural and environmental impacts of digital technology**OverviewWhat are the ethical, legal, cultural and environmental impacts of digital technology on society (6)Assessment (1) | **2.1 Algorithms**OverviewWhat is an algorithm (recap),Designing algorithms (2)Flowcharts (recap) Designing Flowcharts (4)Pseudo code, how to write this, key outlines (4)Assessment (1) | **2.2 Programming fundamentals**OverviewUsing Python to complete programming problems – using Pseudocode as a starting point (10)Assessment (1) |

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| **Year** | **Autumn 1** | **Autumn 2** | **Spring 1** | **Spring 2** | **Summer 1** | **Summer 2** |
| **Year 11** | **Exam revision****Paper 1 review****1.1 Systems architecture**OverviewDifferent parts of the CPU and the Von Neumann Architecture.How the cpu moves information around (5) How the CPU uses its registers and cache Memory (2)Embedded systems and how they are embedded (2)**How to answer 1.1 exam****questions****1.2 Memory and storage**OverviewDifferent types of computer memory that are used within a computer system (4)How and why is virtual memory used, can this impact on the computer’s performance (2)**How to answer 1.2 exam****questions** | **1.3 Computer networks,****connections and protocols**OverviewWhy do we use LAN and WAN networks (2)Client Server and Peer to Peer networks, how they are set up and which is better. (2)Creating a Network, the hardware that is needed to do this (8)Assessment (1)**1.4 Network security (7)**OverviewWhat is security?Cyber-attacks and impact on businesses.Botnets how these are used to infiltrate systems(4)SQL Injection on computersystems (2)Assessment (1)**1.5 Systems software (8)**OverviewSystem software and its role within a computer system (4)Can utility software help the performance of a system (4) | **1.6 Ethical, legal, cultural and****Environmental impacts of digital technology**OverviewHow can Ethical, legal, cultural and environmental issues impact on digital technology and society that use the technology (6)**2.1 Algorithms**OverviewWhat is an algorithm (recap),Designing complex algorithms (2)Flowcharts (recap) Designing complex Flowcharts (4) | **2.1 Algorithms** (cont.)OverviewPseudocode, and linking them to given scenarios (4)**2.3 Producing robust programs**OverviewUsing Python to complete complex programming problems - continuing from Pseudocode tasks (10)**2.4 Boolean logic**OverviewBinary/Decimal/Hex conversionsCompleting complex Logic gate problems (5)Assessment (1)**2.5 Programming languages and Integrated Development Environments**Assessment (1) | **Exam revision****Paper 1 Answering** |  |

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