

**Subject :** Computer Science

**Year Group:** 12

|                              | September to October   | October - December  | January - February   | February -Easter   | April - June  |
|------------------------------|--|---|--|--|---|
| <b>Scheme title</b>          | Logic Gates, Boolean Algebra, Number Systems, Binary   | Data Representation, Encryption   | Computer Architecture, Assembly Language   | Hardware and Software, Secondary Storage   | Moral, Social, Ethical, Communication & Networks  |
| <b>Purpose of scheme</b>     | SOW being updated  | SOW being updated   | SOW being updated  | SOW being updated  | SOW being updated   |
| <b>Knowledge in sequence</b> | SOW being updated  | SOW being updated   | SOW being updated  | SOW being updated  | SOW being updated   |
| <b>Skills</b>                | SOW being updated  | SOW being updated   | SOW being updated  | SOW being updated  | SOW being updated   |
| <b>Key Words</b>             | Integer, real/float, Boolean, character, string, date/time, pointer/reference, records (or equivalent), arrays (or equivalent). variable declaration, constant declaration, assignment, iteration, selection, subroutine (procedure/function). Exception Handling, Global Variable, Local Variable. Gate, Not, And, Or, XOR, Truth Table, Boolean, De Morgan, Boolean Algebra. Decimal, Binary, Hexadecimal, Floating Point, 2s Complement, Mantissa, Exponent. Bit, Byte, Nybble, Absolute Error, Relative Error, Range, Precision, Normalisation, Underflow, Overflow. | Data Structure, Array, Dimension, Fields, Records, Files. Character, ASCII, Unicode, Parity Bits, Majority Voting, Checksum, Check Digit. Analogue, Digital, Resolution, Colour Depth, Vector Graphics, Sample Size, Sample Resolution, Nyquist's Theorem. MIDI. Lossy, Lossless, RLE, Encryption, Vernam Cipher, Caesar Cipher, Plaintext, Ciphertext. | Abstraction, Processor, main memory, address bus, data bus, control bus, I/O controllers., Von Neumann, Harvard. Arithmetic logic unit, control unit, clock, general-purpose registers, program counter, current instruction register, memory address register, memory buffer register, status register, Fetch Execute Cycle, Instruction Set, Opcode, Operand, Addressing Mode, Interrupt, multiple cores, cache memory, clock speed, word length, address bus width, data bus width. | Hardware, Software, System Software, Application Software. operating systems, utility programs, libraries, translators (compiler, assembler, interpreter). Machine Code, Assembly Language, Imperative High Level Language. Barcode, RFID, Hard Disk, Optical Disk, Solid State Disk | Event Driven Programming, Moral, Ethical, Legal, Cultural. baud rate, bit rate, bandwidth, latency, protocol, Star, Bus, Peer to Peer, Client-Server, WiFi, CSMA/CA, RTS/CTS, SSID. |
| <b>End Point</b>             | SOW being updated  | SOW being updated   | SOW being updated  | SOW being updated  | SOW being updated   |
| <b>Assessment method</b>     | SOW being updated  | SOW being updated   | SOW being updated  | SOW being updated  | SOW being updated   |