

Bilton School Planning for Progress over Time

Programme of Study 2019/20:

	Term 1 Computational thinking, Designing creating refining - algorithms and programming	Term 2 Additional programming techniques	Term 3 Testing /Defensive design	Term 4 Wired/wireless – network	Term 5 Networking	Term 6 System security
KS4	2/9/19 9/9/19 16/9/19 23/9/19 30/9/19 7/10/19 14/10/19 21/1/19	4/11/19 11/11/19 18/11/19 25/11/19 2/12/19 9/12/19 16/12/19	6/1/20 13/1/20 20/1/20 27/1/20 3/2/20 10/2/20	24/2/20 2/3/20 9/3/20 16/3/20 23/3/20 30/3/20	20/4/20 27/4/20 4/5/20 11/5/20 18/5/20	1/6/20 8/6/20 15/6/20 22/6/20 29/6/20 6/7/20 13/7/20
Year 10	Baseline assessments and DIRT L1/L2 – Principles of computation thinking - Abstraction L3/L4 – Identify inputs/outputs/ structure diagrams/Flow diagram L5/L6 – refine algorithms using pseudocode /MID TERM term assessment L7/L8 – Identify common errors/ trace tables L9/L10 - searching algorithms/ Binary and Linear search L11/L12– Sorting Algorithms/ Bubble/ merge and insertion L13/L14– Sorting Algorithms / insertion/ Revision	L17/L8 – Assessment/DIRT L1/L2 – String manipulation L3/L4–File handling L5/L06 – Subroutines and Imports /random MID TERM ASSESSMENT L07/08 – Records and SQL L09/10 – ARRAYS L11/L12 – Choose between two tasks to practice coding	L13/L14 – ASSESSMENT/DIRT L1/L2 – Purpose of testing (robustness) L3/L4 – Identify syntax and logic errors (robustness) L5/L6 – Refining algorithms L7/L8 – Revision and recap (go through homework) booklets L9/L10 – Assessment and DIRT	L1/L2 – Network introduction and Types of networks L3/L4 – Factors affecting networks performance L5/L6 – Client server and peer to peer /Network Hardware – Mid assessment questions (GCSE POD) L7/L8 – Network hardware L9/L10 – Virtual networks/CLOUD / revision and recap 10/L11 – Revision tasks and questions	L12/L13 – Assessment Dirt L1/L2 – Network medium and topologies L3/L4 – WIFI - Protocols (HTTP / HTTPS FTPPOP, IMAP, SMTP) L5/L6 – Protocols 4-layer model Packet switching L7/8 – Revision and recap (go through homework) booklets	Assessment /DIRT L1/L2 – Strategies criminals use (brute force attack/dos) L3/L4 – Data interception and theft/ /zero attack L5/L6 – Threats from social engineering (blagging/ phishing/ shouldering) L7/L8 – Threats posed to networks from malware – phishing/viruses/worms/Trojans/spyware/adware/sal levels/SQL HACK L9/L10 – Network policies/encryption/user access levels L11/L12 – Revision and recap (go through homework) booklets L11/L12 – Assessment and DIRT
Key dates and info / Progress and assessment	WEEK starting students to sit baseline test – 2/9/19 MID term assessment 23/9/2019 – Questions for mid assessment – based on algorithms and flowchart WEEK commencing on 21/1/2019 – Assessment – covers the entire topic WEEK commencing on 30/09/2019- Dirt PLC update for Algorithm topic By the assessment, students will be able to: 1 – complete a range of searches using code , identify flow chart structure and pseudocode for OCR 2 – build and use a range of searching and sorting methods 3 – Identify common errors using methods like trace tables 4 – Work out and solve some problems using flow chart or pseudocode	HOLIDAY: 1 WEEK WEEK commencing on 06/1/2020 – Assessment MID term assessment 25/11/2019 – Questions for mid assessment based on a programming task WEEK commencing on 06/1/2020 - Dirt PLC update for topic By the assessment, students will be able to: 1 – complete a range of string manipulation 2 – build programs that will save into files, learn sql and records and integrate with python 3 – use Arrays 1D and 2D and be confident in sub programs	HOLIDAY: 2 WEEKS WEEK commencing on 10/02/2020 – Assessment WEEK commencing on 10/02/2020 - Dirt PLC update for topic By the assessment, students will be able to: 1 – discuss different testing strategies and their defensive designs 2 – Be able to apply this to algorithms and program solving 3 – Identify a trac-table and dry run an algorithm	HOLIDAY: 1 WEEK Mid Assessment for the topic – 9/03/20 – Set on GCSE PODS Mid Dirt for the topic – 09/03/20 WEEK commencing on 20/04/2020 – Assessment WEEK commencing on 24/04/2020 - Dirt PLC update for topic By the assessment, students will be able to: 1 – discuss network types and their uses 2 – outline network performance factors and required hardware	HOLIDAY: 2 WEEKS WEEK commencing 18/05/2020 – Assessment WEEK commencing 18/05/2020 - Dirt PLC update for topic 1 – discuss security types 2 – strategies to keep your network and computer safe 3 – policies applied by companies to prevent security threats	HOLIDAY: 1 WEEK WEEK commencing 02/09/2020 – Assessment WEEK commencing 02/09/2020 - Dirt PLC update for topic WEEK 13/07/2020 – DIRT 1 – discuss security types 2 – strategies to keep your network and computer safe 3 – policies applied by companies to prevent security threats
Homework	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – Practice on string manipulation L3/L4 - OCR revision guide booklet Unit 2.2 on string file handling L5/L6 – Coding task practice	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet
Key vocabulary / Literacy opportunities	Flow diagram, Pseudocode, Abstraction, Decomposition, Linear search, Binary search, Insertion sort , Bubble sort	Previous KW Algorithm, flow diagram, pseudocode, Programming, data types, logic, variables, constant, selection and loops e.g. while / for N New KW – binary search, bubble sort, insertion, Tuples and dictionaries. /arrays	Testing, trace table, Logic and syntax errors , correct algorithms, dry run	Client-server, Hub, LAN, NIC.Packet. Peer-to-peer. Topology, WAN,	File management software, ftp, multitasking, Analogue signal, Bandwidth, Compression, Digital signal, Domain name, HTML, Internet, IP address, Lossless compression, Lossy compression, Protocol, Router/IP	Adware, Anti malware, Anti-virus, custom written software, device driver, disk formatting, firewall, malware, multitasking

Connected knowledge	P2 exam content AS / A level computer science	P2 exam content AS / A level computer science	P2 exam content AS / A level computer science	P1 exam content AS / A level computer science	P1 exam content AS / A level computer science	P1 exam content AS / A level computer science
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	Term 1 LANGUAGES / IDES	Term 2 Ethics of computing	Term 3 System software	Term 4 Reteach Topics based on MOCK PLCS	Term 5 Reteach Topics based on MOCK PLCS	Term 6
KS4	2/9/19 9/9/19 16/9/19 23/9/19 30/9/19 7/10/19 14/10/19 21/11/19	4/11/19 11/11/19 18/11/19 25/11/19 2/12/19 9/12/19 16/12/19	6/1/20 13/1/20 20/1/20 27/1/20 3/2/20 10/2/20	24/2/20 2/3/20 9/3/20 16/3/20 23/3/20 30/3/20	20/4/20 27/4/20 4/5/20 11/5/20 18/5/20	1/6/20 8/6/20 15/6/20 22/6/20 29/6/20 6/7/20 13/7/20
Year 11	BASELINE ASSESSMENT /DIRT L1/L2 – levels of programming / characteristics of programming L3/4 – purpose and function of translators/ Compilers Characteristics of compiler and interpreter L5/6 – Characteristics of compiler and interpreter Common tools in IDE L7/8– Revision and questions L9/10 –Assessment/DIRT L11/12 - Mock prep L13/14 - Mock Prep _ allow space for mock exams	Mock / DIRT L1/L2 – Ethical issues/Privacy L3/L4 – Legal and cultural L5/L6 – Environmental/stakeholders L7/L8 – Open source L10/L11 – Copyright designs and patents/Software licences	L12/L13 – Assessment and DIRT L1 /L2 – Functions of an OS L3/L4 – Utility programs L3/L4 – Application software L5/L6 – Revision and questions L7/L8 – Assessment and dirt	ALLOW SPACE F FOR MOCK EXAMS SYSTEMS ARCHITECTURE/Data representation Memory and storage BOOLEAN LOGIC SYSTEM SOFTWARE/SECURITY ALGORITHMS AND PSEUDOCODE – EXAM PREP	Theory revision Practical revision Theory revision Practical revision Theory revision	HOLIDAY: 1 WEEK
Key dates and info / Progress and assessment	WEEK commencing on 07/10/2019 – Assessment WEEK commencing on 07/10/2019- DIRT PLC update for Algorithm topic By the assessment, students will be able to: 1 – Levels of programming, IDEs, compilers and interpreters 2 – Common tools in an IDE	HOLIDAY: 1 WEEK 11/11/2019 – MOCK and DIRT By the assessment, students will be able review ethics of computing 2 – Know the different laws 3 – Apply different laws to a given scenario	HOLIDAY: 2 WEEKS 06/01/2020 - Assessment and DIRT 10/02/2020 - Assessment and DIRT of system software By the assessment, students will be able to: 1 – Understand the Functions of an OS 2 – Know the difference between Utility software and application software 3 – Able to give examples of Utility and application software and describe them thoroughly	HOLIDAY: 1 WEEK By the Mock assessment, students will be able review using PLC for individual student – Reteach topics based on PLC	HOLIDAY: 2 WEEKS By the Mock assessment, students will be able review using PLC for individual student – Reteach topics based on PLC	HOLIDAY: 1 WEEK June – PC6 yrs. 7-10 only
Homework	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	L1/L2 – GCSE POD – Videos and multiple-choice questions L3/L4 - OCR revision guide booklet L5/L6 – OCR Exam questions booklet	Exam questions and pods set using PLC	
Key vocabulary / Literacy opportunities	Auto documentation, code editor, debugger, error diagnostics, ide , runtime environment, syntax	KW: Data protection, Crime, Copyright, Open source, Close source	KW: OS, WINDOWS, UTILITY SOFTWARE, APPLICATION SOFTWARE.			
Connected knowledge	Will assist in P2 exam content Year 13 – Comp1 and Comp2	Will assist in P1 exam content Year 13 – Comp1	Will assist in P1 exam content Year 13 – Comp1			

