A Level Year 13 Computer Science Mock Exam Revision Timetable

We will be asking you to revise different topics from Unit 1 and Unit 2.

Exam

You will have 2 mock exam papers to do. They will each be 2 hours in length and take place during the Y13 Mock weeks, exact dates to follow.

Please see the revision program below to know which sections will be covered.

Resources

- Showbie has all the work you have done in class for this unit with lots of links and information.
- Access the Year 13 Mock revision resources via Showbie Class **J7TKA**
- Isaac Computing, Seneca Assignments and Craig n Dave Online Videos (YouTube).

What to revise – a suggested guide			
Date	**Unit 1**	**Unit 2**	**Revised**
Week 1 (18th Nov)	**Structure and function of the processor** • ALU, CU, Registers, Buses, data, address and control and how they relate to assembly language. • FDE Cycle and its effects on the registers. • CPU performance, pipelining and architectures. **Types of Processors** CISC and RSIC, GPUs and Multicore and Parallel systems. **Input, output and Storage** • Different types of devices, Magnetic, flash and optical storage, RAM and ROM, Virtual Storage	**Elements of computational thinking** • Thinking abstractly • Thinking ahead • Thinking procedurally • Thinking logically • Thinking concurrently	
Week 2	Web Languages HTML Web Languages CSS Web Languages JavaScript Client-server processing Search Engine Indexing and page rank algorithm	**Programming techniques** Programming constructs, variables, modularity, functions and procedures and use of IDE.	
Week 3	**Systems Software** • Operating Systems, • Memory Management • Interrupts • Scheduling • BIOS • Device Drivers • Virtual Machines.	**Algorithms** **Sorting and searching algorithms** • Bubble Sort • insertion sort • merge sort • quick sort Binary search and linear search.	

Week 4	**Software Development** • waterfall lifecycle, agile methodologies, extreme programming, the spiral model and rapid application development. • Merits and drawbacks of each methodology **Types of Programming Language** • Need for and characteristics of a variety of programming paradigms. • Procedural, Assembly, Object-oriented languages. Modes of address memory	**Programming techniques** Use of object-oriented techniques	
Week 5	**Numbers** • Primitive data types • Character Sets • Representing Positive and Negative numbers in binary • Addition and subtraction of binary • Positive hexadecimal • Converting positive integers. • Representation and normalisation of floating-point numbers • Arithmetic of FP numbers. • Bitwise manipulation and masks	**Data Structures** Stacks, Queues and linked lists	
Xmas Holidays Week 6	**Compression, Encryption and Hashing** • Lossy vs Lossless compression. • Run length encoding and dictionary coding for lossless compression. • Symmetric and asymmetric encryption. **Databases** • Relational database, flat file, primary key, foreign key, secondary key, entity relationship modelling, normalisation and indexing. • Methods of capturing, selecting, managing and exchanging data.	**Data Structures** Trees and Binary Trees Depth-first (post-order), breadth-first traversal or trees.	
Xmas Holidays Week 7	**Networks** • Characteristics of networks and the importance of protocols and standards. • The internet structure: • The TCP/IP Stack. • DNS • Protocol layering. • LANs and WANs. • Packet and circuit switching. • Network security and threats, use of firewalls, proxies and encryption. • Network hardware. • Client-server and peer to peer.	**Data Structures** Graph Data Structure Graph traversals	
Week 8	**Mock Exams – Paper 1**		
Week 9	**Mock Exams – Paper 2**		