

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

- All weekly revision resources accessed via Teams (Revision Homework)
- Smart revise <https://smartrevise.online/>
- Isaac Computing, Seneca Assignments and Craig n Dave Online Videos (YouTube).
- Fast 4 and Knowledge Organisers <https://missallgar01.github.io/studyhubcs/>

22/09/2025 Structure and function of the processor The Arithmetic and Logic Unit; ALU, Control Unit and Registers (Program Counter; PC, Accumulator; ACC, Memory Address Register; MAR, Memory Data Register; MDR, Current Instruction Register; CIR). Buses: data, address and control: how this relates to assembly language programs. Fetch-Decode-Execute	29/10/2025 CPU performance The factors affecting the performance of the CPU: clock speed, number of cores, cache. The use of pipelining in a processor to improve efficiency. Von Neumann, Harvard and contemporary processor architecture.	06/11/2025 Types of processors (The differences between and uses of CISC and RISC processors. GPUs and their uses (including those not related to graphics). Multicore and Parallel systems.	13/10/2025 Input, output and storage How different input, output and storage devices can be applied to the solution of different problems. The uses of magnetic, flash and optical storage devices. RAM and ROM. Virtual storage.	20/10/2025 Systems Software The need for, function and purpose of operating systems . Memory Management (paging, segmentation and virtual memory). Interrupts, the role of interrupts and Interrupt Service Routines (ISR), role within the Fetch-Decode-Execute Cycle.	03/11/2025 Systems Software Scheduling : round robin, first come first served, multi-level feedback queues, shortest job first and shortest remaining time. Distributed, embedded, multi-tasking, multi-user and Real Time operating systems.
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10/11/2025 Systems software BIOS. Device drivers. Virtual machines, any instance where software is used to take on the function of a machine, including executing intermediate code or running an operating system within another.	17/11/2025 Applications Generation The nature of applications, justifying suitable applications for a specific purpose. Utilities. Open source vs closed source.	24/12/2025 Data Types <ul style="list-style-type: none"> • Primitive data types, integer, real/floating point, character, string and Boolean. • Represent positive integers in binary. • Use of sign and magnitude and two's complement to represent negative numbers in binary. • Addition and subtraction of binary integers. • Represent positive integers in hexadecimal. • Convert positive integers between binary hexadecimal and denary. • Representation and normalisation of floating point numbers in binary. • Floating point arithmetic, positive and negative numbers, addition and subtraction. • How character sets (ASCII and UNICODE) are used to represent text. 	01/12/2026 Types of Programming Language Assembly language (including following and writing simple programs with the Little Man Computer instruction set). Modes of addressing memory (immediate, direct, indirect and indexed). Application Generation Translators: Interpreters, compilers and assemblers. Stages of compilation (lexical analysis, syntax analysis, code generation and optimisation). Linkers and loaders and use of libraries.
8/12/2025 Programming Techniques Programming constructs: sequence, iteration, branching. Global and local variables. Modularity, functions and procedures, parameter passing by value and by reference. Use of an IDE to develop/debug a program. Object-oriented languages with an understanding of classes, objects, methods, attributes, inheritance, encapsulation and polymorphism.	15/12/2026 Exchanging data Compression, Encryption and Hashing Lossy vs Lossless compression. Run length encoding and dictionary coding for lossless compression. Symmetric and asymmetric encryption. Different uses of hashing.	22/12/2005 Elements of computational thinking <ul style="list-style-type: none"> • Thinking abstractly • Thinking ahead • Thinking procedurally • Thinking logically • Thinking concurrently 	29/12/2025 Databases <ul style="list-style-type: none"> • Relational database, flat file, primary key, foreign key, secondary key, entity relationship modelling, normalisation and indexing • Methods of capturing, selecting, managing and exchanging data. Stacks, Queues and linked lists