Year 11 Revision Schedule 2026

Subject/Course:	GCSE Computer Science (OCR)

This document has all units listed for the course. As we will have finished all the course material the upcoming mock exam will be two full papers – unit 1 and unit 2. Each one will be 1 hour 30 minutes, as it will be in the summer.

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
1.1 Systems Architecture	**The CPU**					1.1 – Systems architecture – Craig 'n' Dave knowledge video index 1.1 Systems Architecture — Langley Park School for Girls
	Describe the purpose of the CPU					
	State what Moore's Law relates to					
	Von Neumann Architecture					
	Describe Von Neumann Architecture					
	Registers					
	Define the term register					
	Name and describe what the MAR stores					
	Name and describe what the MDR stores					
	Name and describe what the PC stores					
	Describe what the accumulator stores					
	Name and describe what the CIR stores					
	Common CPU components and their function					
	Describe the purpose of the ALU including examples					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Describe the purpose of the CU including examples of signals					
	Describe the purpose of the Cache					
	The FDE cycle					
	Describe the fetch part of the FDE cycle					
	Describe the Decode part of the FDE cycle					
	Describe the execute part of the FDE cycle					
	Factors that affect the performance of a CPU					
	Define the term clock speed					
	Describe how large cache reduces the need to access slower RAM					
	Describe how the number of cores affects the performance					
	Embedded systems					
	Define the term embedded system					
	Describe the purpose of embedded systems					
	Give 3 examples of embedded systems					
1.2 Memory and Storage	**1.2.1 Primary Memory**					1.2 – Memory and storage – Craig 'n' Dave knowledge video index 1.2 Memory and Storage — Langley Park School for Girls
	Define and give examples of primary memory					
	Define the term volatile					
	Describe the difference between RAM and ROM					
	State what is stored on ROM and why ROM is suitable					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	State what is stored on RAM and why RAM is suitable					
	Virtual Memory					
	State what happens when RAM gets full (Virtual memory)					
	State where virtual memory lives					
	Describe what is meant by disk thrashing					
	Flash Memory					
	Describe what is meant by flash memory					
	1.2.2 Secondary Storage					
	Define the term secondary storage					
	Describe the need for secondary storage					
	Data storage characteristics					
	Order storage types in relation to capacity					
	Order storage types in relation to reliability					
	Order storage types in relation to cost					
	Order storage types in relation to read/write speed					
	Data Capacity					
	Order the units of bit, nibble, byte, kilo, mega, giga, tera, peta					
	Calculate the data capacity requirements of an image and sound file					
	Understand relative capacities of common file types e.g image/video					
	Common Types of Storage					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Give examples of optical storage					
	Give examples of magnetic storage					
	Give examples of solid state storage					
	Describe how data is stored on optical storage devices					
	Describe how data is stored on magnetic storage devices					
	Describe how data is stored on solid state storage					
	Suggest suitable storage devices for a given application					
	1.2.3 Units					
	Understand the relative size of bit, nibble, byte, kilo, MB, GB, TB, PB					
	Understand that computers only process binary data					
	1.2.4 Data storage					
	Convert positive denary integers into 8 bit binary					
	Convert 8 bit byte binary numbers into denary numbers					
	Add two 8 bit binary integers and explain overflow errors					
	Perform binary shifts					
	Convert positive denary integers into 2 bit hex					
	Convert 2 bit byte hex numbers into denary numbers					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Convert hex numbers into binary numbers					
	Convert binary numbers into hex numbers					
	Characters					
	Understand that characters can be represented as binary values					
	Define the term 'character set'					
	Explain the relationship between the no. of bits per character set & the no. of chars which can be represented (ASCII, extended ASCII & UNICODE)					
	Images					
	Explain how an image is represented as a series of pixels represented in binary					
	Describe the meta data that is included within a file					
	Describe the effect of colour depth on the size of an image file					
	Describe the effect of resolution on the size of an image file					
	Sound					
	Explain the how sound is sampled and stored in digital form					
	Explain the term amplitude					
	Explain the purpose of a digital to analogue converter					
	Describe what sample size is and its effect on the size of a sound file					

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Describe what bit rate is and its effect on the size of a sound file					
	Describe what sampling frequency is & its effect on the size of a sound file					
	Describe how the above features affect the size of a sound file					
	1.2.5 Compression					
	Describe cases where compression is needed					
	Describe lossy compression and suggest a suitable file to use it on					
	Describe lossless compression and suggest a suitable file to use it on					
1.3.1 Networks and topologies	**Types of Network**					1.3 – Computer networks, connections and protocols – Craig 'n' Dave knowledge video index 1.3 Computer networks, connections and protocols — Langley Park School for Girls
	Define the term LAN					
	Define the term WAN					
	Factors that affect the performance of a network					
	State the factors that affect the performance of a network					
	The different roles of computers in a client server and P2P network					
	Describe what a P2P network is					
	Describe what a client server network is					
	Describe the purpose of a server					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Describe the role of a computer in a P2P network					
	Advantages of having a P2P network					
	Disadvantages of having a P2P network					
	Advantages of having a client server network					
	Disadvantages of having a client server network					
	The hardware needed to connect standalone computers into a LAN					
	Describe the purpose of a Wireless Access Point					
	Describe the purpose of a router					
	Describe the purpose of a switch					
	Describe the purpose of a NIC					
	Transmission Media					
	Identify 3 types of cable that can be used to transmit data					
	Understand relative cost/speed/interference between wire types					
	The Internet					
	Describe what the internet is					
	Describe the purpose of a DNS server					
	Describe the term 'hosting'					
	Star and Mesh Topologies					
	Describe what a topology is					
	Draw and describe the star topology					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Draw and describe the mesh topology					
	State the advantages & disadvantages of the star topology					
	State the advantages & disadvantages of the mesh topology					
1.3.2 Wired and wireless networks, protocols and layers	**WIFI**					
	Understand there are different frequencies/channels					
	Understand why we use bands 1, 6 and 11					
	Encryption					
	Understand the purpose of encryption					
	Understand the difference between symmetric/asymmetric					
	Ethernet					
	Understand that ethernet is a protocol for a wired connection					
	IP addressing, MAC addressing and protocols including					
	Purpose of an IP address					
	Recognise what an IP address looks like					
	Purpose of a MAC address					
	Recognise what a MAC address looks like					
	Describe what is meant by the term protocol					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Name and describe the purpose of:					
	TCP/IP					
	HTTP & HTTPS					
	FTP					
	POP					
	IMAP					
	SMTP					
	Layers					
	Describe what is meant by the term 'layer'					
	Describe the benefit of using layers					
	Describe what happens in each layer of the TCP/IP stack					
1.4 Network Security	**Identify and describe the following forms of attack**					1.4 – Network security – Craig 'n' Dave knowledge video index 1.4 Network Security — Langley Park School for Girls
	Passive					
	Direct					
	1.4.1 Threats posed to networks					
	Define the term malware					
	List 3 types of malware (randsomware, scareware, virus, worm . .)					
	Describe 3 types of malware					
	Describe the term phishing					
	Identify common features of phishing emails					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Describe the term social engineering					
	Describe the term brute force attack					
	Explain how DoS attack can be launched					
	Describe the effects of a DoS attack					
	Describe how data can be protected when stolen or intercepted					
	Describe what is meant by SQL injection					
	Describe the effects of SQL injection					
	Describe what a network policy is					
	Describe what a may happen if a company as a poor network policy					
	1.4.2 Identifying and preventing vulnerabilities					
	Describe internal and external penetration testing					
	Describe network forensics					
	Describe anti-malware software					
	Describe what a firewall is					
	Describe what is meant by user access levels					
	Describe the characteristics of a strong password					
	Describe the purpose of encryption					
	Describe how encryption works					
1.5 Systems Software	**Describe the purpose of**					1.5 – Systems software – Craig 'n' Dave knowledge video index

Revision Schedule 2026

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						1.5 Systems Software — Langley Park School for Girls
	Application software					
	Systems software					
	Utility software (including 2 examples)					
	1.5.1 Operating Systems					
	Describe the features of an OS					
	Describe the features of a GUI					
	Describe the pros/cons of a GUI					
	Describe the features of a command line interface					
	Describe the pros/cons of a command line interface					
	Describe how an OS manages the CPU when multi tasking					
	Describe how an OS manages memory when multi tasking					
	Describe the term peripheral					
	Describe the purpose of a driver					
	Describe what user management processes an OS manages					
	State what file management processes an OS manages					
	1.5.2 Utility System Software					
	Describe the purpose of encryption software					
	Describe how a disk becomes fragmented					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Describe the purpose of defragmentation software					
	Describe the purpose of compression					
	Describe the differences between lossy and lossless compression					
	Describe the purpose of automatic backup software					
	Describe what a full backup is					
	Describe what an incremental backup is					
	Describe the pros/cons of a full backup					
	Describe the pros/cons of an incremental backup					
1.6 Ethical, legal, cultural and environmental concerns	**Understand the following**					1.6 – Ethical, legal, cultural and environmental concerns – Craig 'n' Dave knowledge video index 1.6 Ethical, legal cultural .. — Langley Park School for Girls
	What a stakeholder is					
	Technology can have positive and negative impacts on stakeholders					
	Technology has a positive & negative impact on the environment					
	That some projects may be seen as unethical					
	What censorship is					
	The need to consider the cultural impact of technologies					
	The privacy issues brought about by technology					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Open source VS Proprietary software					
	Identify 2 examples of open source software					
	Identify 2 examples of proprietary software					
	Describe the difference between open source and proprietary software					
	Describe the pros/cons of open source software					
	Describe the pros/cons of proprietary software					
	Be able to recommend a type of licence for a given scenario including benefits and drawbacks					
	Legislation					
	Explain the purpose of the data protection act					
	Explain the purpose of the computer misuse act					
	Explain the purpose of the copyright designs and patents act					
	Explain the purpose of creative commons licensing					
	State the 8 principles of the data protection act					
	State the 4 levels of offence under the computer misuse act					
	Give 3 ways people often break copyright law					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Name and describe 3 different types of software license					
2.1 Algorithms	**2.1.1 Computational Thinking**					2.1 – Algorithms – Craig 'n' Dave knowledge video index 2.1 Algorithms — Langley Park School for Girls
	Define the term abstraction					
	Explain the benefits to humans and computers of using abstraction					
	Give 2 examples of where abstraction has been used					
	Define the term decomposition					
	Breakdown a larger problem using decomposition					
	Understand that not all problems have a computer based solution					
	Break a problem down into an algorithm (algorithmic thinking					
	2.1.2 Designing, creating and refining algorithms					
	Identify the inputs, processes, and outputs for a problem					
	Produce simple diagrams to show: • The structure of a problem Subsections and their links to other subsections					
	Identify syntax/logic errors in code and suggest fixes					
	Create and use trace tables to follow an algorithm					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Be able to write an IF statement in pseudocode					
	Be able to write a case statement in pseudocode					
	Be able to write a FOR loop in pseudocode					
	Be able to write a WHILE loop in pseudocode					
	Be able to write a DO WHILE loop in pseudocode					
	Be able to write a function/procedure in pseudocode					
	Draw a flow chart, identify flow chart symbols					
	Be able to trace an algorithm					
	2.1.3 Searching and sorting algorithms					
	Perform a binary search on a set of sample data					
	Perform a linear search on a set of sample data					
	Understand why binary is considered faster than linear					
	Understand when to use a linear search over a binary search					
	Understand how a binary search is a form of divide and conquer					
	Perform a bubble sort on a set of sample data					
	Perform a merge sort on a set of sample data					

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Perform an insertion sort on a set of sample data					
	Describe the pros and cons of each sorting algorithm					
2.2 Programming fundamentals	**Programming Terms**					2.2 – Programming fundamentals – Craig 'n' Dave knowledge video index 2.2 Programming Techniques — Langley Park School for Girls
	Define and use variables					
	Define and use constants					
	Use a range of mathematical operators including DIV and MOD					
	Use the assignment operator appropriately					
	List and describe 6 data types					
	Understand that you can cast between certain data types					
	Programming Constructs					
	Describe the sequence construct					
	Describe the selection construct including 2 examples					
	Describe the iteration construct including 3 examples					
	Explain the difference between a count & condition controlled loop					
	String Manipulation					
	Define, identify and use concatenation					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Trace and use the length function					
	Find a substring within a longer string					
	Extract a character(s) at a certain position from a longer string					
	Change an uppercase string to a lowercase string					
	Boolean					
	Follow the logic of AND, OR, NOT,					
	File Handling					
	Use the basic file handling operations: open, read, write, close					
	Records					
	Be able to create a record to store data					
	SQL					
	List the results of a simple query written in SQL (AND, <, OR, > …)					
	Write a simple query in SQL					
	List the results of a SQL query containing a wildcard (Like %, _)					
	Write a query in SQL using a wildcard					
	Arrays					
	Define the term 1d array					
	Define the term 2d array					
	Describe the data required to declare a 1d, 2d array					
	Initialise data in a 1d array					

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Initialise data in a 2d array					
	Write pseudo code that includes a 1d/2d array					
	Functions and Procedures					
	Define the term function					
	Define the term procedure					
	Identify a function					
	Identify a procedure					
	Write a function					
	Write a procedure					
2.3 Producing Robust Programs	**2.3.1 Defensive design considerations**					2.3 – Producing robust programs – Craig 'n' Dave knowledge video index 2.3 Robust Programs — Langley Park School for Girls
	Define the term validation					
	Define the term sanitisation					
	Identify when validation has been used in an algorithm					
	Identify when sanitisation has been used in algorithm					
	Describe 5 types of validation (length, type, range, presence, format)					
	Describe the purpose of and give an example of verification					
	Define the term authentication					

Revision Schedule 2026

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Identify different methods of authentication					
	Maintainability					
	Describe the need for comments in code					
	Identify where comments should be inserted into code					
	Understand the importance of indenting code					
	Recognise when to use indentation					
	2.3.2 Testing					
	Describe the purpose of testing					
	Define the term syntax error					
	Define the term logic error					
	Describe iterative testing					
	Describe terminal testing					
	Be able to select appropriate valid, invalid and borderline test data					
2.4 Boolean Logic	**Logic gates and truth tables**					2.4 – Boolean logic – Craig 'n' Dave knowledge video index 2.4 Boolean Logic — Langley Park School for Girls
	Why data represented in computer systems in binary form					
	Draw and trace simple logic diagrams using AND, OR, NOT					
	Combine Boolean operators using AND, OR and NOT to two levels					
	Draw truth tables					

Topic	Key knowledge/skills/questions	R	A	G	Revised	Resources/activities/links
	Applying computing related mathematics including MOD and DIV					
2.5 Programming languages and IDEs	**2.5.1 Languages**					2.5 – Programming languages and IDEs – Craig 'n' Dave knowledge video index 2.5 Programming Languages and IDEs — Langley Park School for Girls
	Describe the term source code					
	Describe the term machine code					
	Describe the difference between high level and low level languages					
	Understand low level languages have a one-to-one relationship					
	Understand low level languages have a one-to-many relationship					
	State the purpose of a translator					
	Describe the characteristics of assembly code					
	Describe how an assembler works					
	Describe how a complier works					
	Describe how an interpreter works					
	State the purpose of an IDE					
	2.5.2 The Integrated Development Environment					
	Text editor					
	Error diagnostics					
	Run-time environment					
	Translators					