

OCR J277 – 2020-2022  
 Component 1 – Computer Systems 1.5 hrs  
 Component 2 – Algorithms and Programming 1.5hrs

SUCCESS COMES FROM HARDWORK

# GCSE COMPUTER SCIENCE - LEARNING JOURNEY

EXAM



REVISION

T40. Compression  
Lossy and Lossless

T39. How is sound stored?  
Sample size, bit rate etc

T38. Image representation in Binary  
Including meta-data

T37. Representing Characters.  
ASCII, Uni-code etc

T36. Check Digits  
How are they used?

T35. Hexadecimal  
How can you convert between Hex, Binary and Denary?

T34. Binary Shift  
How is it done? What is an overflow error?



T33. Converting Binary to denary  
And reverse!

T32. Binary  
What are the units?

Topics 32-40  
Assessment/Post Assessment

Yr 11 Mocks



REVISION



REVISION

T26. Binary  
What are the units?

T27. Logic Gates  
AND, OR & NOT

T28. Computing related Mathematics  
+, -, \*, MOC, DIV

Topics 26-28  
Assessment/Post Assessment

T29. Levels of programming  
High & Low

T30. Translators  
Assembler/Compiler

T31. IDEs  
How do they help programmers?

Topics 19-20  
Assessment/Post Assessment

T20. Identifying Vulnerabilities  
Firewalls, Anti-virus etc

Topics 14-18  
Assessment/Post Assessment

T19. Forms of Attack  
Malware, phishing etc

Yr 10 Mocks

YEAR 11 GCSE

NEA



REVISION

NEA Development  
6 Hours

NEA Testing Design  
3 Hours

NEA Design Section  
2 Hours

NEA Analysis Section  
3 Hours

NEA Evaluation  
3 Hours

NEA Final Testing  
3 Hours

T1. Algorithms  
Algorithmic Logic

T2. Design  
Program Design

T3. Testing  
Types of Testing

T4. Programming Language  
Types of Programming Language

T5. Programming Environments  
Integrated Development Environment

Topics 14-18  
Assessment/Post Assessment

T18. Packet Switching.  
How does it work?

Topic 10-13  
Assessment/Post Assessment

T17. Network Layers  
what are the 4 key stages?

T16. IP/MAC Address  
What is the difference between the two?

T15. Understanding Wifi.  
How is frequency and channels involved?

T14. Star and Mesh Networks  
What is good/bad about each

T13. Virtual Networks  
What is a DNS? Why do we need virtual networks?

T12. Network Components  
What components are needed for networks?

T6. ROM and RAM  
What does ROM and RAM stand for? What is the difference between ROM and RAM?

T7. Virtual Memory  
What is a virtual system and why is it being used?

T8. Flash Memory  
What is flash memory and how is it used?

T9. Storage Devices  
List the different types of storage. identify when they would be used.

Topic 6-9  
Assessment/Post Assessment

T10. LAN/WAN network?  
What are the characteristics of each

T11. P2P/Client-server  
What are the characteristics? What are advant/disadvan of each

Topic 1-5  
Assessment/Post Assessment

L8 Programming Skills  
Date Function

L9 Programming Skills  
Sleep Function

L10 Programming Skills  
For Loops

L11 Programming Skills  
While Loops

L12 Programming Skills  
Subroutines

L13 Programming Skills  
Subroutine Functions

L14 Programming Skills  
Creating New Lists

L15 Programming Skills  
Multidimensional Lists

T5. System Architecture - Embedded Systems  
What is an embedded system? List examples.

L7 Programming Skills  
Random Characters

L6 Programming Skills  
Random Numbers

L5 Programming Skills  
Pseudocode & Flowcharts

L4 Programming Skills  
If Loops

L3 Programming Skills  
Data Types

L2 Programming Skills  
User Input Variables

L1 Programming Skills  
Variables

YEAR 10 GCSE

T4. System Architecture - Clocks/Cores  
What is clock speed? How can the number of cores affect performance?

T3. System Architecture - ALU/CU  
What is the role of the ALU, CU and cache memory? How can the amount of cache memory affect the performance?

T2. Systems Architecture - Addresses  
What is the MDR and MAR? What role does the program counter play? What is the accumulators job?

T1. System Architecture - CPU  
What is the CPU? How does it function? How does the fetch, execute system work?

Introduction  
Specification requirements. overview of course expectations, flipped learning, Folder Setup. Workbooks. Homework calendar. Student/Teacher expectations.

T1 Pre-Assessment  
Online Multiple choice Assessment.

START OF GCSE

Theory - 2 lessons a fortnight  
Programming - 3 lessons a fortnight

