

# YEAR 10 CURRICULUM MAP: OCR GCSE Computer Science

EOY Assessment Point

## COMP01

- 1.1 Systems Architecture
- 1.2 Memory
- 1.3 Storage
- 1.4 Wired and Wireless Networks
- 1.5 Network Topologies, Protocols and Layers
- 1.6 System Security
- 1.7 Systems Software
- 1.8 Ethical, legal, cultural and environmental concerns

## COMP02

- 2.1 Algorithms
- 2.2 Programming Techniques
- 2.3 Producing Robust Programs
- 2.4 Computational Logic
- 2.5 Translators and facilities of languages
- 2.6 Data Representation

**HT6: Practical Programming Project**

HT1 – HT6 KSU  
HT5-

EOY Paper-based exam to cover all topics (weighted 75% Paper 1, 25% paper 2 questions)  
  
Assessment of practical programming project - intervention if required to ensure project is complete and ready to send to exam board.

**1.8 Ethical, legal, cultural and environmental concerns**

**Paper 2 content covered:**  
  
2.1 Algorithms  
2.2 Programming Techniques  
2.3 Producing Robust Programs  
2.5 Translators and facilities of languages  
  
Students undertake a 20 hour practical programming project (This is subject to change in new specification)

**1.6 System Security & 1.7 Systems Software**

**Assessment Point: Summative or AFL**

Forms of attack  
Threats posed to networks  
Identifying and preventing vulnerabilities  
  
The purpose and functionality of systems software  
Operating systems  
Utility system software

Online assessment of each topic area (2 x per HT).  
Intervention & resits for students who fall below target grade  
  
Homework exam-question practice.  
  
Written Feedback  
  
Use of PLC to self-assess progress.

How to investigate and discuss Computer Science technologies while considering:  
ethical issues  
legal issues  
cultural issues  
environmental issues.  
privacy issues.  
How key stakeholders are affected by technologies  
Environmental impact of Computer Science  
Cultural implications of Computer Science  
Open source vs proprietary software  
Legislation relevant to Computer Science:  
The Data Protection Act 1998  
Computer Misuse Act 1990  
Copyright Designs and Patents Act 1988  
Creative Commons Licensing  
Freedom of Information Act 2000.

**1.4 Wired and Wireless Networks & 1.5 Network Topologies**

Types of networks  
Factors that affect the performance of networks  
The different roles of computers in a client-server and a peer-to-peer network  
The hardware needed to connect stand-alone computers into a Local Area Network  
Transmission media  
The internet as a worldwide collection of computer networks:  
DNS (Domain Name Server) hosting the cloud  
The concept of virtual networks.  
  
Star and mesh network topologies  
Wifi  
Ethernet  
The uses of IP addressing, MAC addressing, and protocols  
The concept of layers  
Packet switching.

**1.2 Memory & 1.3 Storage**

**Assessment Point: Summative or AFL**

The difference between RAM and ROM  
The purpose of ROM in a computer system  
The purpose of RAM in a computer system  
The need for virtual memory  
Flash memory  
  
The need for secondary storage  
Data capacity and calculation of data capacity requirements  
Common types of storage  
Suitable storage devices and storage media for a given application, and the advantages and disadvantages of these, using characteristics: capacity speed portability durability reliability cost.

Online assessment of each topic area (2 x per HT).  
Intervention & resits for students who fall below target grade  
  
Homework exam-question practice.  
  
Written Feedback  
  
Use of PLC to self-assess progress.

**HT1: 1.1 Computer Hardware & 2.1**

The purpose of the CPU  
Von Neumann architecture  
common CPU components and their function:  
The function of the CPU to fetch and execute instructions stored in memory  
How common characteristics of CPUs affect their performance  
Embedded systems