GCSE (9–1)

Computer Science

J277 GCSE (9–1) Computer Science
Moving from AQA

Moving from AQA

Are you currently teaching AQA Computer Science GCSE (8525)? This short guide will take a look at our GCSE in Computer Science, show you how it compares to the current AQA qualification and how you can easily move to teaching our specification.

We have a general Getting Started guide on our subject web page which compliments this Moving guide. The Getting Started guide directs you to core support, resources and how to stay up to date.

1 Specification overview

	AQA	OCR
Assessment model	2 written papers Paper 1: 2hr Paper 2: 1hr 45 90 marks each	2 written papers Paper 1: 1hr 30 Paper 2: 1hr 30 80 marks each
AO weightings	AO1: 30% AO2: 40% AO3: 15–20% 30%	AO1: 30% AO2: 40% AO3: 30%
Paper structure	Paper 1: Computational thinking and programming skills. A mix of multiple choice, short answer and longer answer questions assessing programming, practical problem-solving and computational thinking skills. Candidates will need to answer questions using one of the following: • C# • Python (version 3) • VB.NET. Paper 2: A mix of multiple choice, short answer, longer answer and extended response questions assessing SQL programming skills and theoretical knowledge.	Paper 1: Computer systems. This paper consists of multiple choice questions, short response questions and extended response questions. Paper 2: Computational thinking, algorithms and programming. In Section B, questions are answered using either the OCR Exam Reference Language or any high-level programming language

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	AQA	OCR
Programming requirements	AQA have a Practical Programming requirement to engage students with practical experience of programming. These skills are then tested within paper 1.	We have a Practical Programming requirement to engage students with practical experience of programming. These skills are then tested within paper 02.

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Please note: the content summaries below are a high level overview only – they are not meant to be a complete list of all content differences.

Computer systems theory content (OCR Component 01)

Topic	You will not need to teach…	Our J277 specification contains…
CPU		✓ Registers: The purpose of each register, what it stores (data or address) ✓ Program counter ✓ Accumulator
Storage		✓ Virtual memory
Numbers	✓ Addition of 3 binary numbers	✓ Addition of 2 binary numbers
Images	× Converting between binary and simple bitmap images	
Data compression	× Huffman Trees × Creation/Interpretation of Huffman trees × Calculations using Huffman coding × Run Length Encoding × Representation of data using Run Length Encoding	✓ Lossy and Lossless Compression
Systems architecture	× Buses	
Networks	× Personal Area Network × Bus topologies × UDP × 4 layer TCP/IP model (Names and describe each layer)	✓ Hardware to connect to networks ✓ Client/Server and Peer-Peer networks ✓ DNS (Domain Name Server) ✓ Hosting ✓ Mesh topology ✓ POP protocol ✓ The concept of layers

Topic	You will not need to teach…	Our J277 specification contains…
Network security	× Pharming × Misconfigured access rights × Removal media × Unpatched / outdated software	✓ Brute force ✓ Denial of service attacks ✓ SQL injection
Ethical and legal		✓ Legislation relevant to Computer Science

Algorithms and programming theory content (OCR Component 02)

Topic	You will not need to teach…	Our J277 specification contains…
Algorithms	× Efficiency comparisons × XOR gate	✓ Structure diagrams ✓ Insertion sort
Programming languages	× Explain differences between machine code and assembly language × Assemblers	✓ Integrated Development Environments
Relational databases SQL	× Relational database knowledge	
Programming Techniques	×	✓ Basic file handling

2 Exam reference language

We use a set of commands to frame our examination questions. This means our questions are posed clearly and consistently. These commands are known as **Exam Reference Language**.

We also use it within our resources.

Candidates should be able to **recognise** and understand this. They do **not** need to **memorise** it.

OCR's Exam Reference Language (ERL) mimics real life programming languages and syntax. This means it should be easily recognisable no matter what language you teach in class.

Example

```
if answer == "Yes" then
    print("Correct")
elseif answer == "No" then
    print("Wrong")
else
    print("Error")
endif

switch day :
    case "Sat":
        print("Saturday")
    case "Sun":
        print("Sunday")
    default:
        print("Weekday")
endswitch
```

We have a specific document to help and support you and which gives further guidance.

3 Programming language choice

We continue to be the only exam board to offer **free choice in the language that you use** within the classroom.

Any language you choose should ideally cover all programming techniques within the specification.

However, there is nothing to stop you using more than one language to demonstrate different ideas.

We also offer a range of ideas for projects and challenges for you to use in the classroom on the 'Planning and teaching' page for the J277 qualification.

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Though we make every effort to check our resources, there may be contradictions between published support and the specification, so it is important that you always use information in the latest specification. We indicate any specification changes within the document itself, change the version number and provide a summary of the changes. If you do notice a discrepancy between the specification and a resource, please contact us.

OCR acknowledges the use of the following content: N/A

Whether you already offer OCR qualifications, are new to OCR or are thinking about switching, you can request more information using our Expression of Interest form.

Please get in touch if you want to discuss the accessibility of resources we offer to support you in delivering our qualifications.