



GCSE Examiners' Report

Computer Science
GCSE
Summer 2024

Introduction

Our Principal examiners' report provides valuable feedback on the recent assessment series. It has been written by our Principal Examiners and Principal Moderators after the completion of marking and moderation, and details how candidates have performed in each component.

This report opens with a summary of candidates' performance, including the assessment objectives/skills/topics/themes being tested, and highlights the characteristics of successful performance and where performance could be improved. It then looks in detail at each unit, pinpointing aspects that proved challenging to some candidates and suggesting some reasons as to why that might be.¹

The information found in this report provides valuable insight for practitioners to support their teaching and learning activity. We would also encourage practitioners to share this document – in its entirety or in part – with their learners to help with exam preparation, to understand how to avoid pitfalls and to add to their revision toolbox.

Further support

Document	Description	Link
Professional Learning / CPD	Eduqas offers an extensive programme of online and face-to-face Professional Learning events. Access interactive feedback, review example candidate responses, gain practical ideas for the classroom and put questions to our dedicated team by registering for one of our events here.	https://www.eduqas.co.uk/home/professional-learning/
Past papers	Access the bank of past papers for this qualification, including the most recent assessments. Please note that we do not make past papers available on the public website until 12 months after the examination.	Portal by WJEC or on the Eduqas subject page
Grade boundary information	Grade boundaries are the minimum number of marks needed to achieve each grade. For unitised specifications grade boundaries are expressed on a Uniform Mark Scale (UMS). UMS grade boundaries remain the same every year as the range of UMS mark percentages allocated to a particular grade does not change. UMS grade boundaries are published at overall subject and component level. For linear specifications, a single grade is awarded for the subject, rather than for each component that contributes towards the overall grade. Grade boundaries are published on results day.	For unitised specifications click here: Results and Grade Boundaries and PRS (eduqas.co.uk)

¹ Please note that where overall performance on a question/question part was considered good, with no particular areas to highlight, these questions have not been included in the report.

Exam Results Analysis	Eduqas provides information to examination centres via the WJEC Portal. This is restricted to centre staff only. Access is granted to centre staff by the Examinations Officer at the centre.	Portal by WJEC
Classroom Resources	Access our extensive range of FREE classroom resources, including blended learning materials, exam walk-throughs and knowledge organisers to support teaching and learning.	https://resources.edugas.co.uk/
Bank of Professional Learning materials	Access our bank of Professional Learning materials from previous events from our secure website and additional pre-recorded materials available in the public domain.	Portal by WJEC or on the Eduqas subject page.
Become an examiner with WJEC.	We are always looking to recruit new examiners or moderators. These opportunities can provide you with valuable insight into the assessment process, enhance your skill set, increase your understanding of your subject and inform your teaching.	Become an Examiner Eduqas

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Executive Summary

The performance of candidates in the GCSE Computer Science examinations this summer series was generally positive, showing an improvement compared to the previous year. Candidates demonstrated a good understanding of key concepts and principles across a range of topics, including programming, computer systems, and problem-solving.

Unit 1: Understanding Computer Science: Overall, candidates performed reasonably well in this written examination, with the mean total increasing from 39 out of 100 in 2023 to approximately 44 out of 100 this series. This suggests that the paper was more accessible for candidates.

Candidates demonstrated a good understanding of cybersecurity concepts, file handling, and programming constructs. However, they found algorithm design and programming refinement more challenging. Candidates struggled with questions that required them to demonstrate their ability to analyse problems in computational terms, design solutions, and evaluate and refine their work.

Areas for improvement include developing stronger skills in algorithm design, programming refinement, and effectively evaluating their progress during the examination. Providing more opportunities for candidates to practice these skills, as well as using the bank of WJEC resources to support teaching and learning, could help address these areas.

Unit 2: Computer Programming: Candidates performed well in the practical programming unit, particularly in the questions on file handling, GUI use, and understanding of authentication. They were also able to identify programming constructs from provided Python files, although the quality of their annotations was sometimes limited.

The more demanding topics of algorithm design and programming implementation were not as well answered. This reflects the historical trend of these skills in the computer science course. Continued practice and the use of WJEC resources to support the teaching of algorithm design and programming implementation would be beneficial.

Overall, candidates demonstrated a reasonably good understanding of cybersecurity, practical programming, and testing. However, they found the questions on evaluation and algorithm design more challenging, and this was reflected in the lower facility factors for these questions.

Areas for improvement	Classroom resources	Brief description of resource
General	Portal (WJEC)	Past papers, marking schemes and exemplar materials
General – administration	EDUQAS website	Specification
General – administration	EDUQAS website	Teacher guidance
Component 1 & 2	Digital Resources (edugas.co.uk)	Knowledge organisers
Component 1 & 2	Digital Resources (edugas.co.uk)	Theory booklet
Component 1 & 2	Ada Computer Science	Theory website

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COMPONENT 1 - UNDERSTANDING COMPUTER SCIENCE

Overview of the Component

Unit 1 contributes 50% of the qualification assesses a range of assessment objectives (AO) as follows:

- AO1 – 60 marks
 - Demonstrate knowledge and understanding of the key concepts and principles of computer science
- AO2 – 30 marks
 - Apply knowledge and understanding of key concepts and principles of computer science
- AO3 – 10 marks
 - Analyse problems in computational terms:
 - to make reasoned judgements
 - to design, program, evaluate and refine solutions.

During this series, a wide range of content was assessed, including:

- Translators
- Truth tables
- Secondary storage
- Boolean algebra
- Networks
- Routing traffic
- Representation of numbers
- Data structures
- Software tools
- Algorithms
- Professional standards
- Operating systems
- Legislation
- Hardware.

The mean total for Unit 1 this series was approximately 44 out of 100 marks. This represents a substantial increase when compared with the mean total of 39 out of 100 in 2023, with candidates finding the paper more accessible.

Comments on individual questions/sections

Q.1 A minority of candidates were able to tick the compilation stage that matched the description given. These candidates were also able to describe two different types of programming error.

Q.2 Many candidates were able to state the logical operator that had been used to produce the output in the truth table, with a majority able to tick the correct boxes to show the Boolean expression that represents the function described by each truth table.

Q.3 Many candidates were able to tick the secondary storage technology that matches the characteristic. This was the second best answered question of the paper.

Only a minority of candidates were able to describe the functional characteristics of solid-state storage. Popular answers failed to extend upon them having fast data access times.

Q.4 Around half of candidates were able to simplify the Boolean expressions using Boolean algebra and identities.

Q.5 Many candidates were able to draw lines between these devices to show this topology. A minority of candidates were able to give advantages of a star topology.

Around half of candidates were able to name and state the purpose of two protocols that the network might use for communication.

Q.6 Many candidates were able to complete the table, indicating the lowest cost routes from node A to each destination. This was the best answered question of the paper.

Q.7 A majority candidates were able to convert the given numbers into hexadecimal. Many were able to complete the table to calculate the binary addition of two numbers using an 8-bit register and demonstrate the concept of overflow, using a suitable binary addition example. Note that some candidate failed to show the correct carry bits, indicating that they had used a calculator to answer the question. This resulted in them losing a mark as the questions clearly asked them to show their workings.

Q.8 A minority of candidates were able to describe, using an example, the design of one-dimensional and two-dimensional arrays. A few candidates were able to describe the design, stopping at an example of a one-dimensional or two-dimensional grid.

Q.9 Around half of candidates were able to complete the sentences about IDE tools using only the words given. Only a few candidates were able to describe the break point and variable watch IDE tools and how they help when writing a program.

Q.10 A minority of candidates were able to write an algorithm, using pseudo-code, that will assist this analysis of sea levels since 1993. Many failed to loop for several readings and use the correct string handling for outputs, e.g. Largest monthly increase = " + "mm".

Q.11 A minority of candidates were able to describe the purpose and typical contents of a formal code of conduct for employees of an organisation. Only a few were able to demonstrate their understanding beyond providing clear guidelines for employees to follow in the workplace.

- Q.12** Many candidates were able to tick the interface that matches the characteristic provided by an operating system. A few candidates were able to explain how the operating system manages the CPU and interrupts. This was the worst answered question of the paper.
- Q.13** A few candidates were able to discuss the principles of the Regulation of Investigatory Powers Act 2000 and Regulation of Investigatory Powers Act 2000. Legislation.
- Q.14** Around half of candidates were able to explain their understanding when comparing the performance and features of the two PC specifications. These candidates showed adequate understanding of the requirements of the question and a satisfactory knowledge of the indicative content. They addressed the question, comparing the two specifications and used appropriate technical terminology referring to the indicative content.

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COMPONENT 2 – COMPUTER PROGRAMMING

Overview of the Component

This practical programming unit assess candidates' ability to problem solve, design algorithms and implement programming concepts

Comments on individual questions/sections

- Q.1** A majority of the available marks were awarded to candidates for this question on file handling, GUI use and understanding of authentication (login/passwords). This cybersecurity-based question was well answered.
- Q.2&3** Candidates scored well identifying programming constructs from the provided python files. The quality of the annotation was at times limited and candidates do need to be annotate in close reference to the correct lines of code and not at the top of the module.
- Q.4** These questions assessing algorithm design and composition were not as well answered as Q1,2,3. Algorithm design has historically been considered a more demanding topic whilst teaching computer science and this was demonstrated in the answers to this question.
- Q.6** The new programming implementation question assessed programming using the Python programming language. It was pleasing to see that a great many candidates had been well prepared and could attempt this question.
- Q.7** This section assessed candidates' ability to enter and use test data to test the functionality of the programming completed in previous questions. Candidates should be advised to read the question carefully and use the test data provided and not their own test data at this stage (earlier stages naturally can be tested).
- Q.8&9** The programming refinement question assessed programming adaptations using the Python programming language. It was pleasing to see that many candidates had been well prepared and could attempt this question.
- Q.10** Some candidates were unable to effectively evaluate the progress they made during the examination. Some candidates did not review the changes made during development and some candidates could not expand on their work.

A number of candidates did not attempt this question.

SUMMARY OF KEY POINTS

Candidates had a reasonably good understanding of cybersecurity, practical programming, and testing. They performed best in these questions.

Candidates found the questions on evaluation and algorithm design challenging, and this was reflected in the low facility factor for these questions

Supporting you

Useful contacts and links

Our friendly subject team is on hand to support you between 8.30am and 5.00pm, Monday to Friday.

Tel: 02920 265 401

Email: CS@eduqas.co.uk

Qualification webpage: [GCSE Computer Science | Eduqas](#)

See other useful contacts here: [Useful Contacts | Eduqas](#)

CPD Training / Professional Learning

Access our popular, free online CPD/PL courses to receive exam feedback and put questions to our subject team, and attend one of our face-to-face events, focused on enhancing teaching and learning, providing practical classroom ideas and developing understanding of marking and assessment.

Please find details for all our courses here: <https://www.eduqas.co.uk/home/professional-learning/>

Regional Rep Team

Our regional team covers all areas of England and can provide face-to-face and online advice at a time which is convenient to you.

Get in contact today and discover how our team can support you and your students.
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We support our education communities by providing trusted qualifications and specialist support, to allow our students the opportunity to reach their full potential.



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