Qualification awaiting accreditation

CAMBRIDGE OCR

Sample assessment material

Cambridge OCR Level 2 Foundation Certificate in Digital Systems and Data

J002

Unit R202: Developing programming solutions

Version 0.1 | November 2026

ocr.org.uk/foundationcertificates

Introduction

This is a sample assessment material (SAM). It is an example Cambridge OCR-set assignment published alongside the specification. It is designed to show the style and tasks you can expect from our set assignments.

As the qualification develops, we may update the set assignment template. To help you get the most from this SAM, we also provide two supporting resources:

- **Assessment story** – this explains the structure of the qualification and our approach to both examined and non-exam assessment.
- **Student guide to NEA assignments** – this provides a summary for your students of key points about their Cambridge OCR-set assignments, including the importance of avoiding plagiarism.

Summary of updates

Section	Change	Version	Date
N/A	First draft – Awaiting accreditation.	0.1	11th November 2026

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Cambridge OCR-set Assignment

Sample assessment material

Cambridge OCR Level 2 Foundation Certificate in Digital Systems and Data

Unit R202: Developing programming solutions

Scenario Title: Campus Quest digital application

Valid for assessment from <month> 20XX to <month> 20XX.
For use by students beginning the qualification in <month> 20XX.

This is a sample Cambridge OCR-set assignment which should only be used for practice**.**

This assignment **must not** be used for live assessment of students.

The live assignments will be available on our secure website, 'Teach Cambridge'.

The Cambridge OCR administrative codes linked to this unit are:

- unit entry code R202
- certification code J002

The regulated qualification numbers linked to this unit are:

xxx/xxxx/x

Duration

About
- 10 hours of supervised time (GLH)
  (work that **must** be completed under teacher supervised conditions)

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Tasks for students and assessment criteria

Unit R202: Developing programming solutions

Scenario Title: Campus Quest digital application

Valid for assessment from <month> 20XX to <month> 20XX.
For use by students beginning the qualification in <month>20XX.

Scenario

Riverside School invites Year 5 and 6 students from local primary schools to its open evening every year. Each subject area sets a challenge to encourage visitors to explore the school. Students earn points for each challenge they complete.

Riverside School used paper scorecards to record points in previous years. The school wants to replace the paper system with a digital app called Campus Quest.

The school wants visiting students to use the app during the open evening. The visiting students will use it to record completed challenges, collect points and check their progress as they explore the school.

The application **must**:

- Allow the visiting students to enter their name.
- Display a menu of **four** subject area challenges.
- Allow a challenge to be selected and marked as completed.
- Prevent completed challenges from being selected again.
- Add the correct number of points for completed challenges to the total points achieved.
- Allow students to choose when to finish the Campus Quest.
- Display a final summary when a student has finished that shows:
  - Student name
  - Challenges completed
  - Total points achieved
  - Achievement level.

Riverside School has asked you to develop a **prototype** of the Campus Quest digital application.

The prototype **must** meet the requirements given and demonstrate how the final digital application would function during the open evening.

As this is a prototype, the digital application **does not need to run on a tablet device**. You may develop the prototype using **any suitable programming language** and development environment. The prototype **must** include program code that demonstrates the use of programming constructs, control structures and data structures.

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The challenges and points from the **four** subject areas to be used in the prototype are given below:

Subject area	Challenge	Points
English	Complete a spelling test	10
Mathematics	Complete a number puzzle	15
Science	Take part in a practical investigation	25
Computing	Complete a coding challenge	25

The different achievement levels are:

Points achieved	Achievement level
0-20	Explorer
21-50	Pathfinder
51+	Riverside Campus Quest Champion

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Task 1
Planning and designing the programming solution

Topics A and C are assessed in this task.

The task is:

Plan and design the Campus Quest digital application.

Your evidence **must** include:

- Requirements specification
- Interface design(s)
- Output design(s)
- Algorithm design(s)
- Test plan
- Written evidence.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P1: Create a requirements specification for the programming solution. (PO4)		**D1: Justify** your planning and design decisions in relation to the scenario. (PO3)
P2: Create user interface designs for the programming solution. (PO4) (**S**)		
P3: Create designs for the output(s) from the programming solution. (PO4)	**M1: Create** algorithm designs for the programming solution. (PO4)	
	M2: Create a test plan for the programming solution. (PO2)	

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Assessment guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
P1	• P1 relates to Topic A4. • Students **must** include the purpose, functional requirements, input requirements and output requirements of the programming solution. • The requirements specification **must** be sufficiently detailed for another programmer to understand the requirements of the programming solution.
P2	• P2 relates to Topics A3, A4 and unit R200 Topic A3. • Students **must** include sufficient detail to show how users will interact with the programming solution. • Students need to draw on knowledge and understanding from across the course of study in order to achieve P2 (**S**). • Students **could** use the tools listed in Topic A4.
P3	• P3 relates to Topics A3 and A4. • Students **must** include sufficient detail to show how the outputs will be communicated to the end users with the programming solution. • Students **could** use the tools listed in Topic A4.
M1	• M1 relates to Topics A2 and A4. • Students **must** design algorithms to show how the programming solution will operate and **must** incorporate structured logic. • Students **must** include sufficient detail for the sequence of processing to be interpreted by another programmer. • Students **must** use sequencing, selection and iteration when planning their algorithms. • Students **could** use the algorithm representation methods listed in Topic A4.
M2	• M2 relates to Topic C1. • Students **must** include the elements of programming solutions to test from Topic C1 which will be tested in their test plan. • We recommend that students use the test plan template provided to plan their tests. However, if students use a different template which is appropriate for the task, they **must not** be penalised for doing so. • Teacher provided templates **must not** include examples or instructions.
D1	• D1 relates to Topics A2 and A3. • Students **must** consider their interface designs, output designs and planned algorithms to achieve this criterion.

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Task 2
Creating the programming solution

Topic B is assessed in this task.

The task is:

Use software development tools to write and integrate code to create the Campus Quest digital application you planned and designed in **Task 1**.

Your evidence **must** include:

- Program code
- Written evidence
- Video/screen recordings demonstrating the programming solution.

Advice:

- If you use any code libraries or reusable code it **must be clearly referenced** and comply with any licensing requirements.
- If you use any AI-generated code or AI-assisted code suggestions it **must be clearly referenced** and comply with any licensing requirements.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P4: Create the user interface for the programming solution. (PO4)		**D2: Create** appropriate error handling **and** error message(s) for the user interface in the programming solution. (PO4)
P5: Use selection and iteration within the programming solution. (PO4)	**M3: Use** appropriate control structures within the programming solution. (PO2)	**D3: Use** appropriate code libraries or reusable code in the programming solution. (PO2)
	M4: Use appropriate data structures within the programming solution. (PO2)	
P6: Use appropriate naming conventions in the programming solution. (PO2)	**M5: Use** source code indentation **and** comments to make the programming solution maintainable. (PO2)	
P7: Create output(s) that communicate processing outcomes to the user. (PO4)		
		D4: Justify the programming constructs used in the programming solution. (PO3)

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Assessment guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
General	• In **Task 2**, ideally students will create the programming solution designed in **Task 1.** However, if students deviate from their designs, they must not be penalised when assessing **Task 2**. • The programming solution must contain program code that demonstrates the use of programming constructs, control structures and data structures identified in Topic B1. • Evidence of program code can be screenshots. • To confirm assessment decisions made for some of the criteria for this task, the Cambridge OCR moderator will need to be able to see the final programming solution. Therefore, students must provide video/screen recordings of the programming solution being demonstrated.
P4	• P4 relates to Topic B2. • The video/screen recording of the programming solution will be sufficient evidence for this assessment criterion.
P5	• P5 relates to Topic B1. • Students **must** use both selection **and** iteration within their programming solution. • The program code from the programming solution will be sufficient evidence for this assessment criterion.
P6	• P6 relates to Topic B1. • Students **must** use a consistent and understandable naming convention for variables, constants and any data structures/program structures used. • For the naming conventions to be understandable, someone who hasn't seen the code before **must** be able to interpret it. • The program code from the programming solution will be sufficient evidence for this assessment criterion.
P7	• P7 relates to Topic B2. • The video/screen recording of the programming solution will be sufficient evidence for this assessment criterion.
M3	• M3 relates to Topic B1. • Students **could** make use of programming constructs identified in Topic B1. • The program code from the programming solution will be sufficient evidence for this assessment criterion.

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M4	• M4 relates to Topic B1. • Students **must** use appropriate data structures for the data being stored or processed. • Students **could** make use of the data structures identified in Topic B1. • The program code from the programming solution will be sufficient evidence for this assessment criterion.
M5	• M5 relates to Topic B1. • Students can use the code readability features available within a software development environment. • For the code to be maintainable, someone who hasn't seen it before must be able to be interpret it. • The program code from the programming solution will be sufficient evidence for this assessment criterion.
D2	• D2 relates to Topics B1 and B2. • Students **must** implement error handling and error message(s) to manage invalid or unexpected user input and prevent unintended behaviour in the programming solution. • The video/screen recording of the programming solution and program code from the programming solution will be sufficient evidence for this assessment criterion.
D3	• D1 relates to Topics B1 and B3. • Students **must** integrate code they have written themselves with code libraries and/or reusable code to create the programming solution. • Where code libraries and reusable code are used this **must** be clearly identified and source acknowledged. • Students **must** comply with any applicable licensing requirements relating to externally sourced code. • The program code from the programming solution will be sufficient evidence for this assessment criterion.
D4	• D4 relates to Topic B1. • Students will make reasoned judgements on how well the selected programming constructs contribute to the programming solution.

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Task 3
Testing the programming solution

Topic C is assessed in this task.

The task is:

Test the functionality of the Campus Quest digital application you created in **Task 2** using your test plan from **Task 1** as a starting point.

Your evidence **must** include:

- A completed test plan including your test results
- Written evidence.

Use the assessment criteria below to tell you what you need to do in more detail.

Pass	Merit	Distinction
P8: Complete the planned testing of the programming solution. (PO4)	**M6**: **Complete** retesting on errors corrected**.** (PO4)	**D5: Evaluate** the effectiveness of the testing approaches used to test the programming solution. (PO3)
P9: Use the results of testing to identify and correct errors in the programming solution**.** (PO2)		

Assessment guidance

This assessment guidance gives you information to meet the assessment criteria. There might not be additional assessment guidance for each criterion. It is only given where it is needed. You must read this guidance before you complete your evidence.

Assessment Criteria	Assessment guidance
General	• We recommend that students use the test plan template provided. However, if students use a different template which is appropriate for the task, they must not be penalised for doing so. • Teacher provided templates **must** not include examples or instructions.
P8	• P8 relates to Topic C1 and C2. • Ideally students will use the approach planned in **Task 1**. However, if students deviate from the proposed testing, they should not be penalised. • Students **must** complete sufficient testing to assess the functionality of the programming solution. • Students **must** record the outcomes of testing in their test plan.

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P9	• P9 relates to Topic C2. • Students **must** provide evidence of corrections being made. • The video/screen recording or screenshots of the programming solution will be sufficient evidence for this assessment criterion.
M6	• M6 relates to C1 and builds on P9. • Students **must** record the outcomes of retesting in their test plan.
D5	• D5 relates to C1. • Students will make reasoned judgements on how effective their approaches to testing were.

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Template for test table

Test description	Test data	Expected result	Actual result	Retesting

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Command words

Command word	Definition
Adapt	Change to make suitable for a new use or purpose.
Analyse	Break information into parts and consider relationships, patterns or characteristics to interpret meaning or suggest impacts using a logical chain of meaning.
Assess	Consider factors that apply and which are the most important or relevant.
Calculate	Work out a numerical answer using appropriate methods.
Choose	Provide an answer from appropriate options.
Complete	Finish a task by adding to given information.
Compare	Provide details about the similarities and differences between two or more items, situations or actions.
Create	Produce an output or artefact in response to a task or problem.
Describe	Give an account that includes all the relevant characteristics, qualities or events.
Draw	Produce a diagram/sketch/graph with sufficient detail to show the answer.
Discuss (how/whether/etc)	Consider a range of relevant points for and/or against an argument or scenario, to make a reasoned judgement.
Evaluate	Make a judgement about value, importance or effectiveness, using evidence to support your answer.
Examine(d)	To look at or scrutinise in detail.
Explain	Give reasons for and/or causes of something; make something clear by giving information.
Interpret	Use given information to translate meaning, patterns or relationships.
Justify	Make and support a judgment or offer an opinion using evidence and reasoning.
Label	Add information to given source material.

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Command word	Definition
List	Provide a series of terms or points without elaboration.
Mark	Indicate specific feature or location on given source material.
Measure	Establish a value using a suitable measuring instrument and/or technique.
Plan	Consider, set out and communicate what is to be done.
Plot	Indicate specific feature or locations on given source material.
Recommend	Put forward a supported judgment.
Research	Do a detailed study in order to discover (new) information or reach a (new) understanding.
Set up	Prepare a system or set of equipment for operation.
Suggest	Give possible solutions or ideas for consideration.
Summarise	To sum up or give a short account in your own words.
Use	Apply the information provided or apply prior learning of knowledge, understanding and/or skills. Put acquired skills and methods into action for a given purpose.

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