GCSE

WJEC GCSE Computer Science

Approved by Qualifications Wales

Delivery Guide

Teaching from 2025
For award from 2027

This Qualifications Wales regulated qualification is not available to centres in England.

Made for Wales.
Ready for the world.

WJEC would like to thank the students and teachers of Fitzalan High School, Cardiff and Llanwern High School, Newport for their participation in the creation of these covers.

Contents

Aims of the Delivery Guide

The aim of the Delivery Guide is to give an overview of the qualification and to help teachers understand how we assess the GCSE. It will offer an introduction to the specification, an assessment overview, and will support teachers in better understanding how to prepare their learners for the assessment of the different units. More information on each unit can be found in the separate unit guides.

Qualification Structure

WJEC GCSE Computer Science consists of two units:

	Unit title	Type of Assessment	Weighting
Unit 1	Understanding Computer Science	Digital examination	50%
Unit 2	Computer Programming	On-screen examination based on a pre-released brief	50%

All units are compulsory.

Unit 1

The purpose of this unit is to:

- introduce learners to the key concepts and computational processes to be explored throughout the course
- consider the broad legal, social, ethical, environmental and professional consequences relevant to the use of technology
- consider the evolution of technologies that are relevant to the topics.

The unit will be based on the following:

- computer architecture:
  - components
  - peripheral devices
  - storage
- structure of systems and functions:
  - data types, including representation, storage and compression
  - data and file structures
  - automated systems
- how systems communicate:
  - networks and infrastructure
  - cybersecurity and personal privacy
- algorithms
- software:
  - principles of programming
  - software development, including the software development lifecycle (SDLC)
  - program construction
- logical operations
- operating systems
- systems development lifecycle.

Legal, social, ethical, environmental and professional dimensions and reference to the evolution of technologies will be integrated where appropriate into the above topics.

Unit 2

The purpose of this unit is to:

- explore the concept of programming
- develop programming skills using Python as the specified language
- encourage iterative problem solving and design
- develop the use of data modelling skills
- give learners the opportunity to build appropriate user interfaces.

The unit will be based on the following:

- investigation
  - decomposition
  - abstraction
  - pattern recognition
- design
  - algorithms
  - data modelling
- implementation
  - programming
  - user interfaces
- testing
- refinement, including evaluation.

Learners will require access to Python 3. The version of Python 3 required will be specified on the scenario issued to candidates and on the examination instructions.

The materials will be released, written using the standard Python IDLE IDE and will use TKINTER library for graphical user elements.

Centres may use an IDE of their choice for teaching programming knowledge and skills. However, learners are required to use the Python IDLE IDE version specified in the pre-release for the Unit 2 examination.

Summary of assessment

Unit 1: Understanding Computer Science **Digital examination*:* 1 hour 30 minutes** **50% of qualification** **80 marks**
Questions requiring objective responses, short and extended answers.
Unit 2: Computer Programming **On-screen examination based on a pre-released brief*:* 2 hours** **50% of qualification** **80 marks**
Set and marked by WJEC. The pre-released brief will include a scenario. A new scenario will be set by WJEC each year. The pre-released brief will be available via the WJEC Portal. The assessment will feature tasks based on the scenario.

Assessment Objectives

Unit 1

The distribution of the assessment objectives for this unit is:

AO1	AO2	AO3	Total
30%	15%	5%	**50%**

Unit 2

The distribution of the assessment objectives for this unit is:

AO1	AO2	AO3	Total
-	25%	25%	**50%**

Specification and Assessment Pack

When we develop new qualifications, we produce the following documents:

- Specification – this covers all the information and skills that learners are expected to know by the end of their course.
- Assessment Pack – this contains the Sample Assessment Materials (SAMs) i.e.: sample exam papers and sample NEA tasks, relevant controls for the NEA and, mark schemes

This guide builds upon the information in the specification and assessment pack to help further your understanding of said documents.

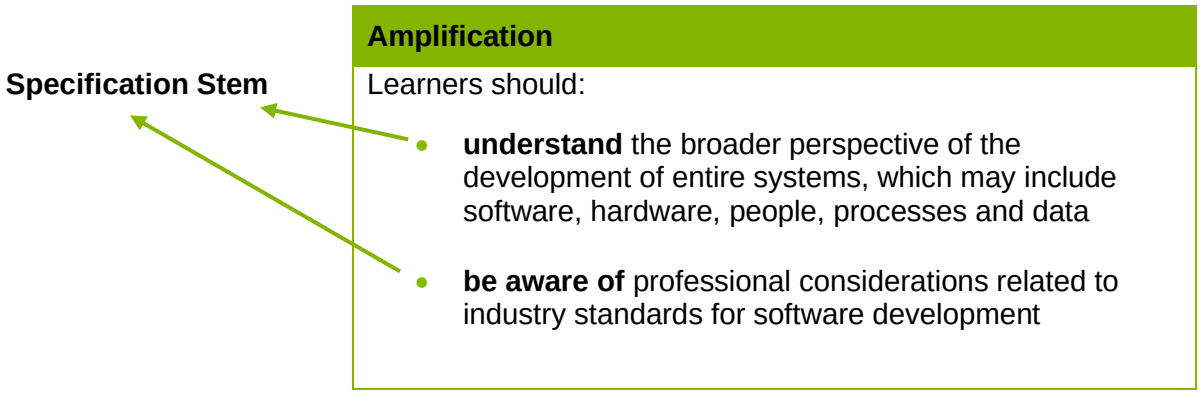
Understanding the specification amplification

Learners should be made aware of:

- the specification stems
- what the specification stems mean.

Specification Stems

When you look through the specification you will notice in the amplification column, we use a variety of wording before the list of content learners need to know; we call this a stem:



Each stem is used for a slightly different reason:

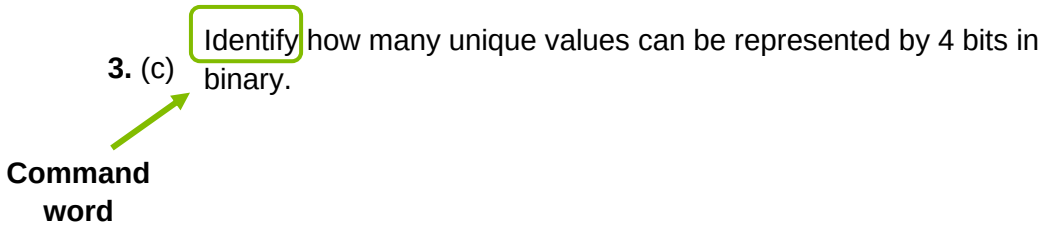
Specification Stem	When it is used
Learners should know	When learners are required to use direct recall.
Learners should be aware of	When learners do not need to understand all aspects of the specified content in detail. Teachers should refer to Guidance for Teaching documents for further guidance on the depth and breadth to which this content should be taught.
Learners should understand	When learners are required to demonstrate greater depth than straight identification or recall. For example, they can apply knowledge to familiar or unfamiliar contexts and can synthesise and evaluate information for a given purpose.
Learners should be able to	When learners need to apply their knowledge and understanding to a practical situation or demonstrate application of practical skills and techniques.

Command words

Learners should be made aware of:

- what command words are
- what each command word means
- what each command word assesses.

Command words are the words and phrases used in assessments that tell learners how they should answer the question or complete the task. Command words direct the learner through the question or task and indicate the nature of the response required.



The following tables are not exhaustive but will give you a good idea of the command words we typically use:

Command words for direct recall	
Command Word	**Requirements of response**
Account	Give reasons for.
Define	Give the precise meaning of a term.
Describe	Identify distinctive features and give descriptive, factual detail. *This is one of the most widely used command words. If an explanation is required then use two command words: 'describe and explain'.*
Drag and drop	Move to another part of a screen using a mouse or similar device.
Find	In response to a mathematical problem.
Give	Produce an answer from recall.
Identify/Tick/Click/ Circle	Point out and name from a number of possibilities.
Label	To designate with a name.
List	State the factors (with no explanation or elaboration).
Match/Link	To choose something that has the same quality as something.
Name	Identify or make a list.
Outline	Set out the main characteristics.
Place	Put in a particular position.
Sort/Order	Arrange systematically.
State	Express in clear terms.

Command words for application/demonstration of skills:	
Command Word	**Requirements of response**
Annotate	To describe the functionality of code.
Apply	Use knowledge and understanding of a theory or concept and relate it to a specified context. Put into effect in an appropriate way.
Calculate	Work out from given facts, figures or information. *This command word should only be used in the context of a mathematical question e.g. calculate the value of.*
Categorise/classify	Arrange into a particular classification or group.
Clarify	Make (an idea or situation) clear by describing it in more detail.
Change	Make an amendment to, for example, code as required by the question.
Communicate, write and speak	Share information by speaking or writing.
Complete	Add necessary items/information.
Compose	Write or create.
Convert	Change data from one specified form to another.
Demonstrate	Exemplify, describe with reference to examples.
Design	Decide upon the look and functioning of something by making or drawing plans.
Discuss	Present key points.
Display	Present information diagrammatically.
Draw	Draw a diagram/graph/line/picture.
Edit	To make changes to given data, object or code.
Explain	Give reasons or causes. Show an understanding of how or why something has occurred.
Explore	Investigate without preconceptions about the outcome.
Express	Use given information to rewrite a number or an expression in a specified form.
Illustrate/Show	Use a diagram or words to make clear how a concept or theory works in a particular context. Present clarifying examples. Refer to a case study or example.
Implement/Run	Put (a decision, plan, agreement, etc.) into effect/action.
Interrogate	Question formally and systematically.
Investigate	Carry out research or study into a subject or problem.
Make/Produce/Create	To create/make/manufacture.
Modify	Make changes to give a new orientation to or to serve a new end.
Perform	To carry out or execute a task, action, or activity.

Place	Put in a particular position.
Populate	Add specified items to
Propose	Suggest a course of action based on supported reasons.
Prove	Demonstrate validity on the basis of evidence.
Record	Obtain and store data and information.
Relate	Demonstrate connections between items.
Review	Survey information.
Select/Choose	Make an appropriate choice from a range of options.
Shift	Use arithmetic shift functions.
Simplify	Re-write an expression or a number in a simpler form
Suggest	Put forward an idea, reason or course of action.
Summarise	Give a shortened version of something, stating its main points without detail.
Test	To apply a test as a means of diagnosis.
Transform	To change something into a new form.
Translate	Change words into a different language.
Use	Apply the information provided to a particular theory or concept. Employ, take or hold something for a purpose.
Write	Formulate and write down (for example an algorithm).

Command words for synthesis and evaluation	
Command Word	**Requirements of response**
Advise	Suggest a proposal or course of action based on supported reasons.
Analyse	Separate information into components identify their characteristics.
Assess	This is an evaluative question, meaning that there are a number of possible explanations/arguments/outcomes. Make an informed judgement. Make a judgement about the quality or value of something.
Compare	Identify **similarities**.
Consider	Review and respond to given info.
Contrast	Identify **differences only**.
Develop	To extend, advance, or elaborate.
Discuss	Examine an issue in detail in a structured way, taking into account different ideas.
Distinguish	Identify the differences between two or more factors.
Evaluate	Judge from available evidence.
Examine	Investigate closely.

Insert	Adding or placing new data or an object within an existing structure.
Interpret	Translate information into a recognisable form.
Justify	Support case with evidence.
Program	Add or create programming code to perform a specific task or solve a particular problem.
Recommend/Improve	To suggest as appropriate.
Review	To consider something with the intention making changes if necessary.
Solve	Obtain the answer(s) using **a relevant or specified** mathematical method.
Suggest	State a possible reason or course of action.
Support	To maintain or advocate.

Mark Schemes

Mark schemes and/or assessment criteria test the intended learning outcomes for a component. They describe the knowledge and skills (and possibly attitude) that a candidate is expected to demonstrate in their responses, and they are then used in marking the work.

Objective based mark scheme:
For very short answer questions requiring one correct response.

Question		Answer	AO1	AO2	AO3	Total Mark
3	(b)	Convert the binary number 00110010_2 into hexadecimal.				
		Award **one** mark for the following: • 32_{16}		1		1

Points based mark scheme
For short answer questions with a range of possible responses

Question		Answer	AO1	AO2	AO3	Total Mark
4	(b)	TCP and IP are two protocols that combine to allow communication between computer systems on a network. Name **three** items found in a TCP / IP packet.				
		Award **one** mark for each of the following, up to a maximum of **three** marks: • Source address • Destination address • Information which enables the data to be reassembled into its original form • Other tracking information • The data itself • A checksum that authenticates the data, i.e. checks it hasn't been corrupted.	3			3

Levels based mark schemes
For questions requiring extended responses

Band	AO3
3	**5-6 marks** The candidate has: • shown strong understanding of the requirements of the question and a clear knowledge of the indicative content. Clear knowledge is defined as a response that provides five to six relevant detailed points from the indicative content • shown a sustained line of reasoning which is coherent, relevant, substantiated and logically structured • used appropriate computer science terminology.
2	**3-4 marks** The candidate has: • shown some understanding of the requirements of the question and sound knowledge of the indicative content. Sound knowledge is defined as a response that provides three to four relevant detailed points from the indicative content • shown a line of reasoning which is partially coherent, largely relevant, supported by some evidence and with some structure • used mainly appropriate computer science terminology.
1	**1-2 marks** The candidate has: • shown limited understanding of the requirements of the question and superficial knowledge of the indicative content. Superficial knowledge is defined as a response that provides one to two relevant points from the indicative content • shown a basic line of reasoning which is not coherent, largely irrelevant with very little structure • used limited computer science terminology.
0	**0 marks** No attempt made or no response worthy of credit.

Important Dates

First Teaching of WJEC GCSE subject	September 2025
First release of Unit 2 brief	September 2025
First assessment for Unit 1	Summer 2026
First assessment for Unit 2	Summer 2027
First Certification	Summer 2027