



Exploring the Future of Computing and Practical Onscreen Assessment

Over 30,000 students have taken our
onscreen assessment since 2022

Agenda

01 Computing Skills that Power the Future

02 Pearson in Computing Education and how to get involved

03 Qualification Design Principles

04 Assessment at a Glance

05 Paper 2 Case Study and Demo

06 Guidance and Support

Computing Skills that Power the Future

- Future-facing computing skills provide the foundation for success in education, employment, and life in a technology-driven society.
- Despite this [Schools Week](#) recently reported a 7% decline in GCSE Computing entries.
- [Pearson](#) have also reported that only 20% of GCSE entrants and 10% of A level entrants are female.
- This implies current computing pathways are not engaging a sufficiently diverse student population.
- This is concerning, as a recent [2024 Government review](#) approximately 7.4 million adults lack essential digital skills required for the workplace.
- The planned reform provides an opportunity to create a curriculum that is more relevant, inclusive and aligned with modern digital careers.

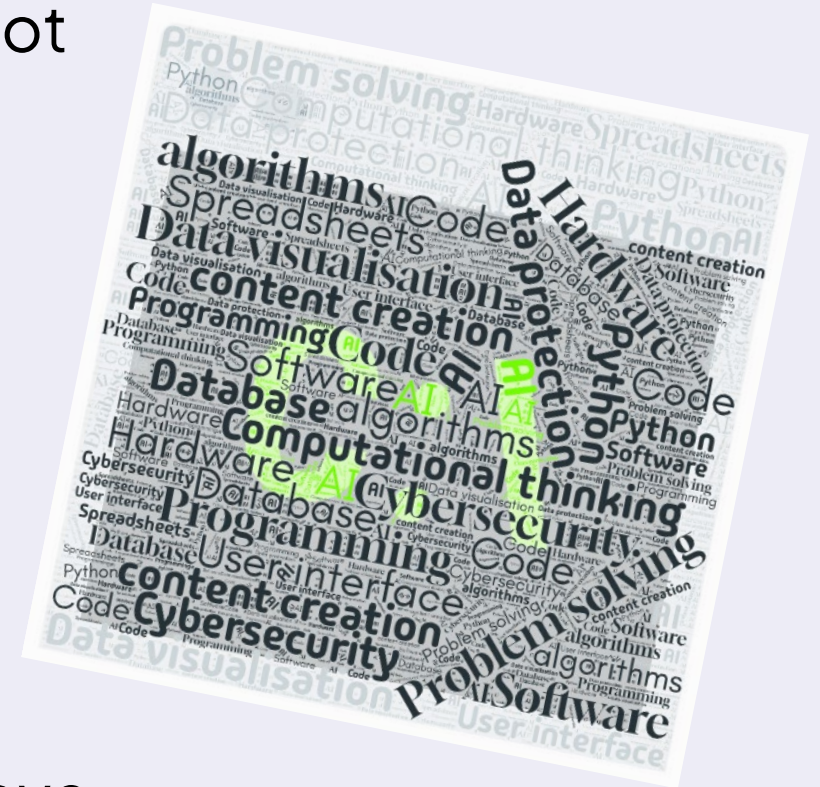


Computing Skills that Power the Future

The [Curriculum and Assessment Review \(CAR\)](#) marks a major shift in computing education, recognising that digital and AI skills are now essential for all learners, not just future programmers.

It identified several key themes across computing education:

- Computing should adequately prepare young people for the future workforce
- The curriculum should reflect emerging technologies.
- There is a need to broaden participation and improve access to high-quality computing education.



How can you get involved in the Computing reform?

Computing educators are at the centre of how the subject evolves.

It is now even more important than ever computing qualifications integrate knowledge and skills that power the future – engaging and equipping students for life with computer literacy, practical competence and problem-solving skills, connecting learning to real life and credible progression.

If you are interested in getting involved in shaping future developments in computing, [register your interest to join our teaching panel.](#)



» Pearson

Our GCSE Computer Science Qualification (with Onscreen Assessment for Paper 2)

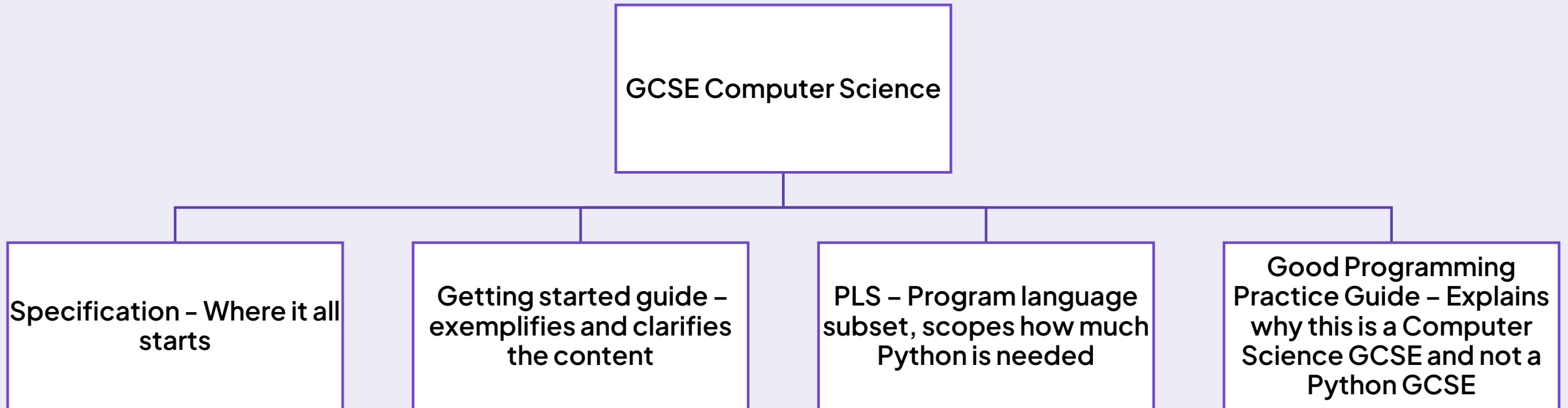
Our qualification design principles

Reform provides the opportunity to review our offer:

- No surprises for students or teachers
- Prepares students for the future whatever the progression route may be
- Qualification built around clarity
- Delivers programming language required for student progression and future skills
- Resources to support delivery of the qualification
- Access to practice materials to support delivery
- Assessment should be accessible and manageable



Pearson Edexcel GCSE Computer Science (2020)



A Clear and Simple Structure

The qualification combines **written and practical elements**, balancing theory and practical application. This provides students with a rounded experience of Computer Science.

The qualification has a straightforward structure with **six comprehensive topic areas**, assessed through **two externally examined papers**.

- The written paper focusses on computational thinking, data, computers, networks, the issues and impact of computing in the world today.
- The practical onscreen assessment, which focuses on the ability to analyse and solve problems by designing, writing, testing and refining programs.

Topic Areas

① Computational thinking

② Data

③ Computers

④ Networks

⑤ Issues and impact

⑥ Problem solving with programming

Assessment at a glance

Paper 1 Principles of Computer Science

Paper code: 1CP2/01

- ✓ 75 marks
- 🕒 *Written examination: 1 hour 30 minutes*
- ⚖️ *50% of the qualification*

Content overview

This paper will assess Topics 1 to 5.

- 🔗 **Computational thinking** - understanding of what algorithms are, what they are used for and how they work; ability to follow, amend and write algorithms; ability to construct truth tables.
- 📁 **Computers** - understanding of hardware and software components of computer systems and characteristics of programming languages.
- 📡 **Networks** - understanding of computer networks and network security.
- 📊 **Data** - understanding of binary, data representation, data storage and compression.
- ⚡ **Issues and impact** - awareness of emerging trends in computing technologies, and the impact of computing on individuals, society and the environment, including ethical, legal and ownership issues.

Assessment overview

This paper consists of five compulsory questions, each one focused on one of the topic areas. The questions consist of multiple-choice, short-, medium- and extended-open-response, tabular and diagrammatic items.

Paper 2 Application of Computational Thinking

Paper code: 1CP2/02

- ✓ 75 marks
- 🕒 *Practical onscreen examination: 2 hours*
- ⚖️ *50% of the qualification*

Content overview

This paper will assess Topic 6: Problem solving with programming.

The main focus of this paper is:

- ✓ understanding what algorithms are, what they are used for and how they work in relation to creating programs
- ✓ understanding how to decompose and analyse problems
- ✓ ability to read, write, refine and evaluate programs.

Assessment overview

This paper is practical in nature and requires students to design, write, test and refine programs in order to solve problems.

Students will complete this assessment onscreen using their Integrated Development Environment (IDE) of choice.

They will be provided with:

- ✓ coding files
- ✓ a hard copy of the question paper
- ✓ Programming Language Subset (PLS) – as an insert in the question paper and an electronic version

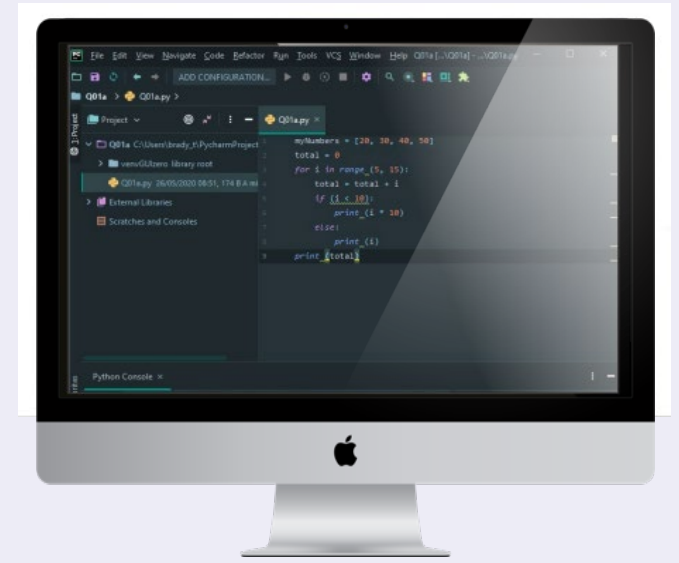
Students should then answer the six compulsory questions onscreen using Python 3.

Assessment overview

- Dual approach to the Pearson Edexcel GCSE 9-1 Computer Science qualification involves a written examination and a practical onscreen element
- Balance provides students with a rounded experience of Computer Science in comparison with a traditional paper-based exam that relies on students reading and writing pseudocode
- Paper ramping builds student confidence
- Consistent structure clarifies expectations
- Straightforward mark schemes make expectations clear for all
- Practical onscreen assessment allows schools to choose which integrated development environment (IDE) to use

- There is **no need** for internet access

- Students are able to complete activities using their IDE of choice, meaning familiarity



[Read more about our onscreen assessment in *Hello World*>](#)

Case Study – Read School

“I attended a Debriefing the Exam session run by my local NCCE Hub. Paul Long gave the introduction and offered a detailed mapping of the differences between the content of the GCSE courses. We also heard about the experiences of 15 or so Pearson Edexcel teachers. Every single one was positive about the exam that summer, including the practicalities of carrying out the Paper 2 onscreen assessment.”

“The most important reason for changing exam boards is the Paper 2 onscreen assessment”

“The students love the concept of the Programming Language Subset (PLS), as it neatly defines what they need to know. As one of our Year 11 students said, “The good thing about Pearson Edexcel is the PLS as the skill is assessing how to put code together [with trial and error]. AQA [and other Boards] assesses you on how much you know [without testing] which is unrealistic”.

Chris Sharples, Head of Computing



[Read the full case study >](#)

Student voice

"On-screen programming assessment seems like a really obvious thing to do. Given that computers are where you learn and practice coding, it makes sense that's also where you'd be assessed. This means that being taught on-screen Python is good preparation for the assessment.

Python is a great language to use for several reasons. It's free, it's a widely used language (it's used at companies such as Google, Facebook, Netflix and Amazon), it's highly in demand, and there's a great community to get involved with."

Harry Wake, Age 15, former student at Maple Hall School, now at University of Birmingham studying Computing



Check out Mission
Encodeable CPD Session
on How to create
effective and engaging
coding tasks

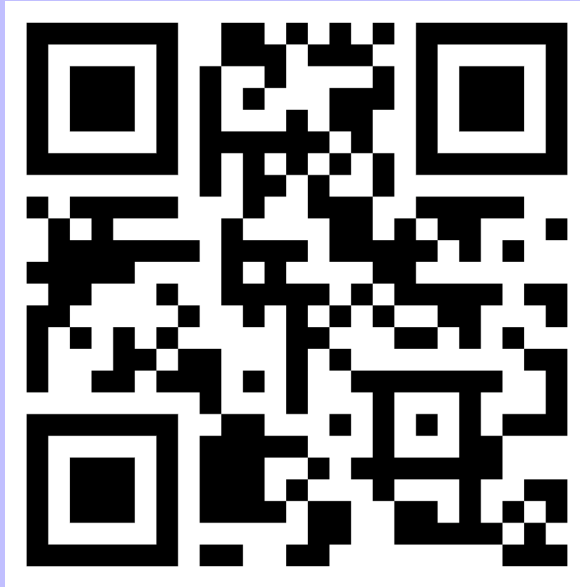
[Read the full case study >](#)

Paper 2 Onscreen Demonstration

Get the resources for our demo here



Data files



Question Paper



PLS

How does it work?

Is it online?

- No, it is on-screen, ideally no internet (we accommodate other arrangements that assure the security and integrity of the assessment)

Are there complicated installs to be done?

- No, ideally you use the same computers that students have been using for classroom activities
- They should be able to use the same IDE that they have been using for the whole of teaching and learning
- What if the IDE is online? – If you can show us that the assessment is secure, we will support this

What does the centre need to do?

- Provide a computer to the candidate with required tools installed
- Have an 'exam' account
- Ensure the controlled conditions are met

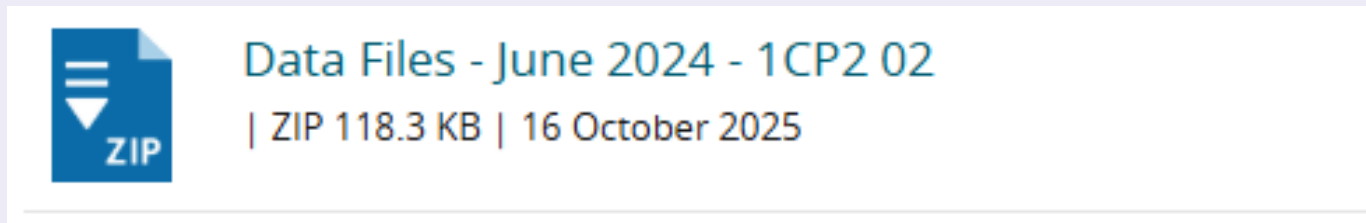
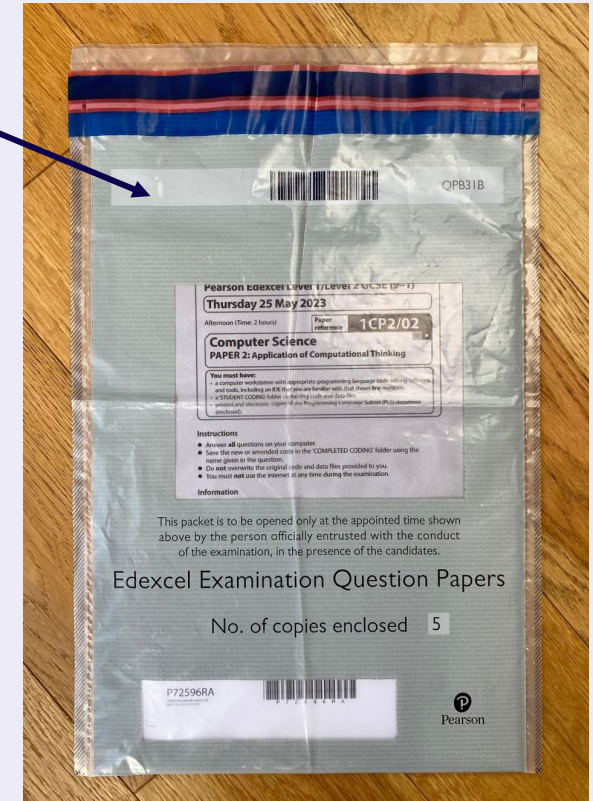
Are there challenges?

- You will require enough computers, although you can stagger start times to facilitate this
- IT support back up during the assessment is important

How does it work?

We send you Exam papers and PLS (by post)

- You arrange exam user accounts on computers in your centre
- We publish digital assets (files) you drop these into the exam accounts



- The 2-hour exam takes place
- You send us (digitally) the candidates work

Administrative support

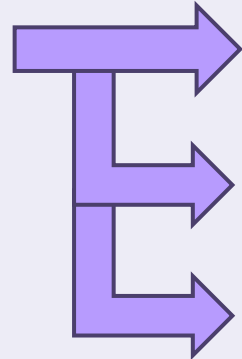
You will find support documents on our website under

Forms and Administration

We have a helpful guide for Chromebook schools



We have helpful checklists for the main protagonists








The ICE is a must for Exams Officer, Teacher and IT Support



Forms and administration (5) SORT BY Latest

Centre guidance

-  [Guidance for Chrome Schools](#)
Updated May 2024
| PDF 312.7 KB | 10 November 2022
-  [1CP2 02 Examination Officer Checklist](#)
| PDF 203.0 KB | 04 December 2025
-  [1CP2 02 Invigilator Checklist](#)
| PDF 142.2 KB | 12 December 2025
-  [1CP2 02 IT Tech Checklist](#)
| PDF 160.4 KB | 12 December 2025
-  [1CP2 02 Instructions for the conduct of the examination \(ICE\) v2.0.1 Summer 2026](#)
| PDF 4.4 MB | 02 February 2026

What does the Question Paper look like?

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Tuesday 21 May 2024

Afternoon (Time: 2 hours) **Paper reference 1CP2/02**

Computer Science
PAPER 2: Application of Computational Thinking

You must have:

- a computer workstation with appropriate programming language code editing software and tools, including an IDE that you are familiar with which shows line numbers
- a 'STUDENT CODING' folder containing code and data files
- printed and electronic copies of the Program Language Subset (PLS) document (enclosed).

Instructions

- Answer **all** questions on your computer.
- Save the new or amended code in the 'COMPLETED CODING' folder using the name given in the question.
- Do **not** overwrite the original code and data files provided to you.
- You must **not** use the internet at any time during the examination.

Information

- The total mark for this paper is 75.
- The marks for **each** question are shown in brackets
– use this as a guide as to how much time to spend on each question.
- The 'STUDENT CODING' folder in your user area includes all the code and data files you need.

Advice

- Read each question carefully before you start to answer it.
- Save your work regularly.
- Check your answers and work if you have time at the end.

Front page always worth a good look

Must haves

- Computer
- Place to save files
- Printed and digital PLS

Instructions

- Answer all Questions
- Save your work
- No internet

Information

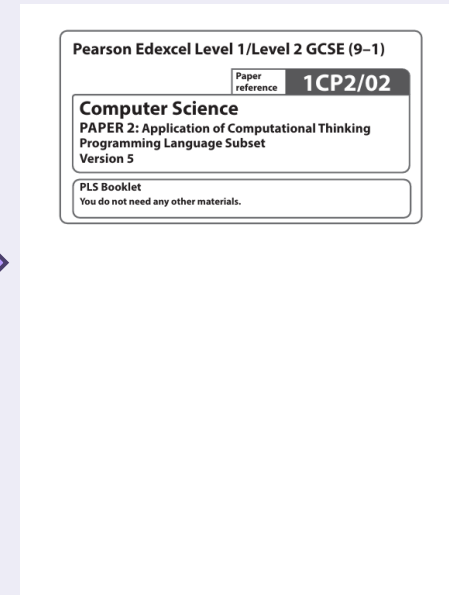
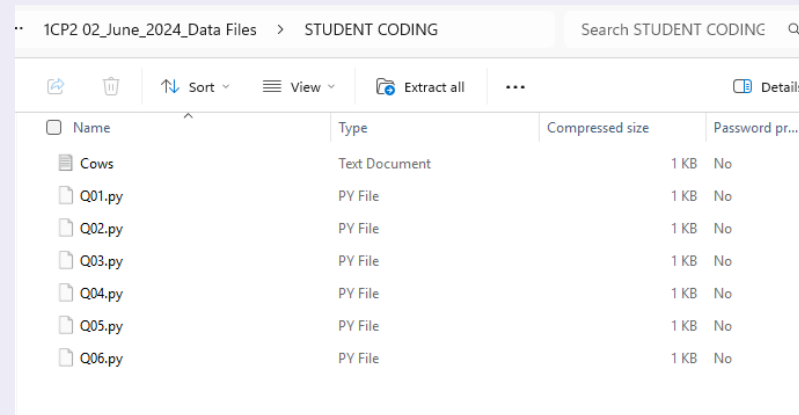
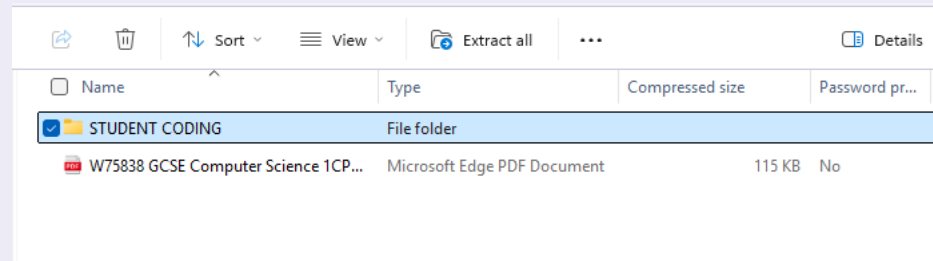
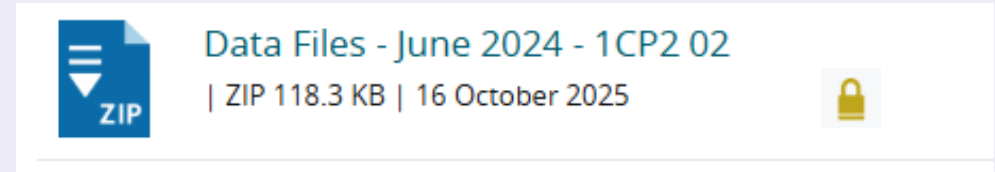
- Total marks 75
- Marks for each question shown
- Where to find the starter code files

Advice

- Read each question
- Save your work
- Check your answers

Let's look at the data file

- Available in a Zip archive
- Inside is a folder and the PLS document
- In the folder at ethe seed code files.
- There will not ALWAYS be a text file but if there is it will ALWAYS be a comma separated value formatted text file.



Let's look at a question

This is from Summer 2024 Paper 2 Q1

Answer ALL questions.

Suggested time: 10 minutes

1 A program is written to provide information about the rainbow.

Colours and wavelengths are stored in arrays. For example, the colour Violet is produced when the wavelength is from 380 to 424

The user enters an index and the colour at that array location is displayed. The user enters a wavelength and the colour for that wavelength is displayed.

Open file **Q01.py**

Amend the code to:

- fix the syntax error on original line 5
waveTable = [380, 425, 450, 492, 577, 597", 622]
- fix the NameError on original line 6
found = false
- fix the syntax error on original line 8
wavelength = 0123
- fix the syntax error on original line 15
index = int (input ("Enter an index: "))
- fix the NameError on original line 21
color = rainbow[index]
- fix the ValueError on original line 22
print (int (colour))
- fix the logic error on original line 26
if ((wavelength < 380) and (wavelength > 622)):
- fix the logic error on original line 29
index = 1
- fix the logic error on original line 35
elif (waveTable[index] <= wavelength):
- fix the logic error on original line 37
print (rainbow[index - 2])

Do **not** change the functionality of the given lines of code.

Do **not** add any additional functionality.

Save your amended code as **Q01FINISHED.py**

(Total for Question 1 = 10 marks)

```
1 # -----
2 # Global variables
3 # -----
4 rainbow = ["Violet", "Indigo", "Blue", "Green", "Yellow", "Orange", "Red"]
5 waveTable = [380, 425, 450, 492, 577, 597", 622]
6 found = false
7 index = 0
8 wavelength = 0123
9 colour = ""
10
11 # -----
12 # Main program
13 # -----
14 # User chooses a colour index
15 index = int (input ("Enter an index: "))
16 if (index < 0):
17     print ("Indexes cannot be zero")
18 elif (index > 6):
19     print ("Indexes cannot be more than six")
20 else:
21     color = rainbow[index]
22     print (int (colour))
23
24 # User chooses a colour based on wavelength
25 wavelength = int (input ("Enter a wavelength "))
26 if ((wavelength < 380) and (wavelength > 622)):
27     print ("Invalid wavelength")
28 else:
29     index = 1
30     # Look for a wavelength less than or equal to user's choice
31     while (not found):
32         if (wavelength == waveTable[index]):
```

Further example

This is from Summer 2024 Paper 2 Q6

Suggested time: 25 minutes

6 A program is required to process data about cows. The data is stored in a comma separated value text file named Cows.txt

The columns in the data file are:

- name
- breed
- tag number.

Open file **Q06.py**

Write a program to meet these requirements:

- create a key for each cow in the data. A valid key is a single string consisting of (in this order)
 - the first two letters of the breed name
 - the tag number integer divided by 100
 - the first two letters of the cow's name
- create a record for each cow. A valid record consists of (in this order)
 - a key, a tag number, a name and a breed
- store the record for each cow in the `cowTable`
- call the supplied subprogram, `showTable()`, to display the contents of the `cowTable`
- the program must work with any number of lines in the data file.

Use comments, white space and layout to make the program easier to read and understand.

Do **not** add any additional functionality.

Save your amended code as **Q06FINISHED.py**

(Total for Question 6 = 15 marks)

```
1 # -----  
2 # Global variables  
3 # -----  
4 cowTable = []  
5  
6 # =====> Write your code here  
7  
8 # -----  
9 # Subprograms  
10 # -----  
11 def showTable (pTable):  
12     for cow in pTable:  
13         print (cow)  
14  
15 # -----  
16 # Main program  
17 # -----  
18 # =====> Write your code here  
19  
20  
21
```

Demo summer 2024 Paper 2

Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Tuesday 21 May 2024

Afternoon (Time: 2 hours) **Paper reference 1CP2/02**

Computer Science
PAPER 2: Application of Computational Thinking

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Information

- The total mark for this paper is 75.
- The marks for **each** question are shown in brackets
– use this as a guide as to how much time to spend on each question.
- The 'STUDENT CODING' folder in your user area includes all the code and data you need.

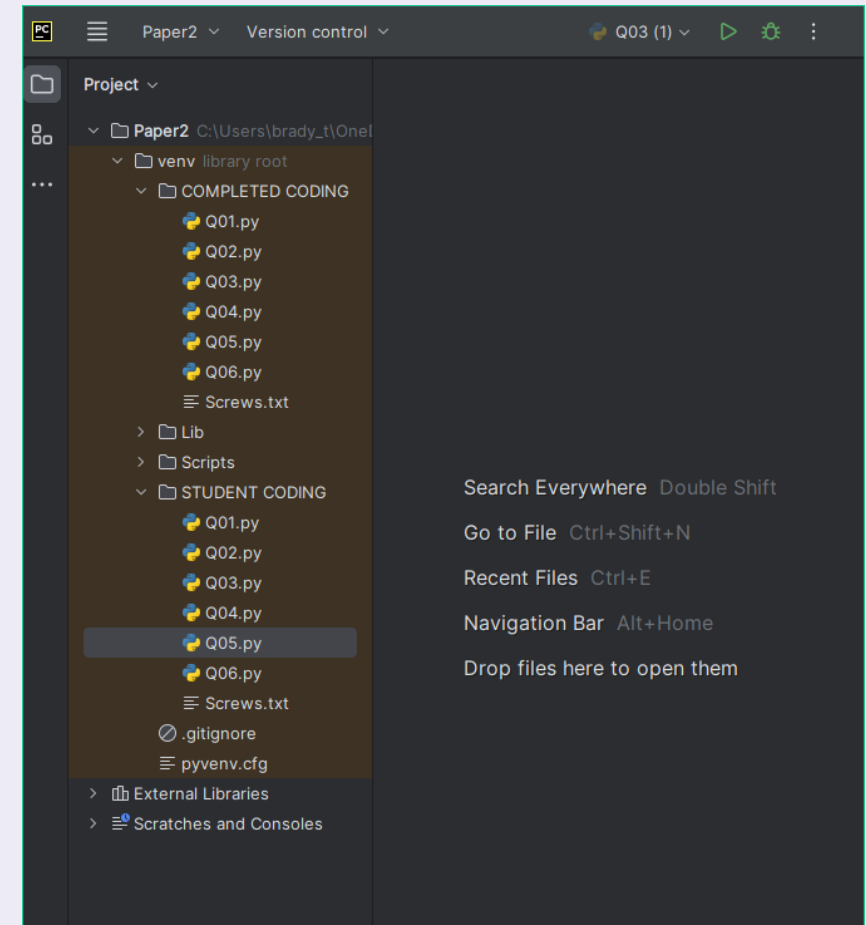
Pearson Edexcel Level 1/Level 2 GCSE (9–1)

Tuesday 21 May 2024

Afternoon (Time: 2 hours) **Paper reference 1CP2/02**

Computer Science
PAPER 2: Application of Computational Thinking
Programming Language Subset
Version 5

PLS Booklet
Do not return this Booklet with the question paper.










Where can I get more examples?

These videos from the [qualification web page](#) under the dropdown '**Video Resources**' show me working through the Sample Assessment paper 2 Q1 to Q6.

There are also full sets of solutions and examiner commentary for the SAM Paper 2 and the 3 sets of Specimen papers under the dropdown '**Exemplar exam material**' on this same page.

You can access any of the past papers or specimen papers and try it for yourself!

 VID	Part 1 Get Started with Paper 2 Video 10 June 2020
 VID	Part 2 Question 1 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020
 VID	Part 3 Question 2 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020
 VID	Part 4 Question 3 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020
 VID	Part 5 Question 4 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020
 VID	Part 6 Question 5 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020
 VID	Part 7 Question 6 from Paper 2 (SAM) and Mark Scheme Video 10 June 2020

Support for planning, delivery and assessment

Free support from Pearson

We provide free supportive resources to help you deliver our GCSE Computer Science (9-1) including:

Plan

- Mapping documents
- Comprehensive Scheme of work
- Getting started guide
- Training events

Teach

- Specification
- Getting started guide
- Program Language Subset (PLS)
- Good Programming Practice Guide
- Network events

Track and Assess

- Sample Assessment Materials (SAMs)
- Specimen Papers
- Exemplar student responses
- Results Plus and Exam Wizard
- Item Level Mark Data

Our free comprehensive Scheme of Work includes:

Lesson plans, practical activities and solutions that have been written for the specification.

A wealth of resources to support teaching Python that have been designed for you and for your students



Access to Scripts

An online service, included as part of your qualification fees, that allows educators to view their candidates marked scripts online or download as a PDF.

ResultsPlus and examWizard

ResultsPlus

ResultsPlus is our online results analysis tool for teachers. Included as part of your qualification fees, ResultsPlus gives you a detailed breakdown of your students' performance in Pearson Edexcel exams.

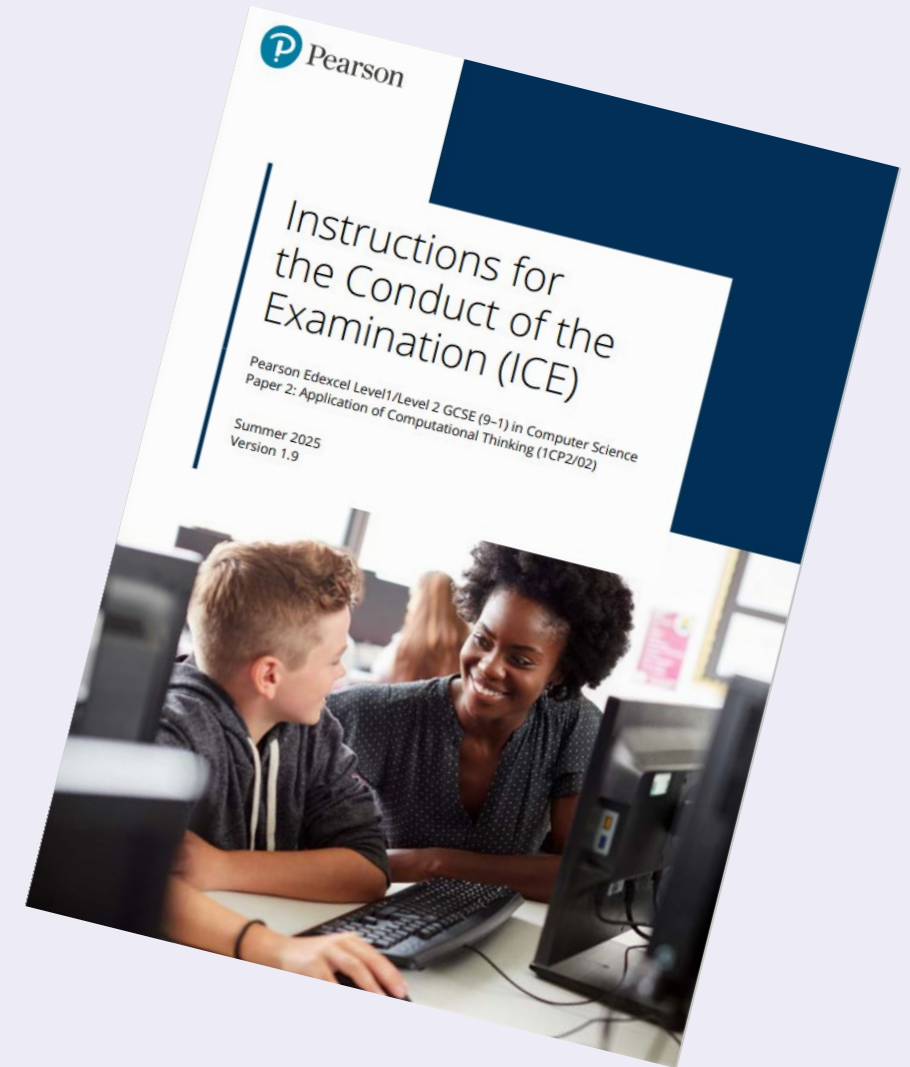
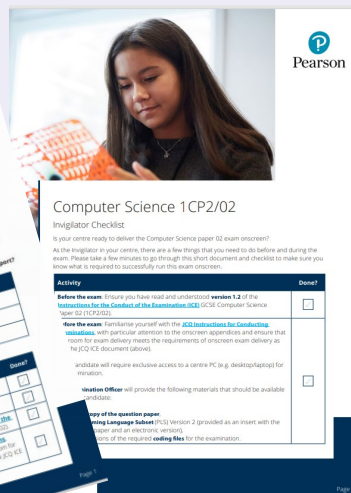
examWizard

examWizard is a free exam preparation tool containing a bank of past Edexcel exam questions, mark schemes and examiners' reports to help you create your own tailored resources e.g., mock exams, topic tests, homework or revision activities. It works in conjunction with ResultsPlus using test feedback to create exam practice papers for cohorts or individual learners.



Support for delivering assessments

- ICE
- Role specific checklists
- Seed code delivery & Computer and user account setups
- IT Support and contingency



What to expect on exam day



Release of secure materials.



[Learner Work Transfer](#), our digital evidence portal, enables centres to upload and submit the zip file for each candidate and an examiner will then receive the candidate's work for marking.



Our website has guidance documents and videos which can further support you and your centre with this process.

Pearson

EDEXCEL ONLINE

Monday 14 Mar 2022

Select Qualification ▾

- Edexcel Accounts ▶
- Centre Accounts ▶
- Training Event Bookings ▶
- Tracking ▶
- ResultsPlus ▶
- International Centre Terms & Conditions
- Centre Search
- Access Arrangements Online
- View Invoices ▶
- OSCA
- Script Viewer

Learner Work Transfer ▶ Standards Verification

T Level Orders Examination / Moderation

T Level Results

Learner Work Transfer (LWT)

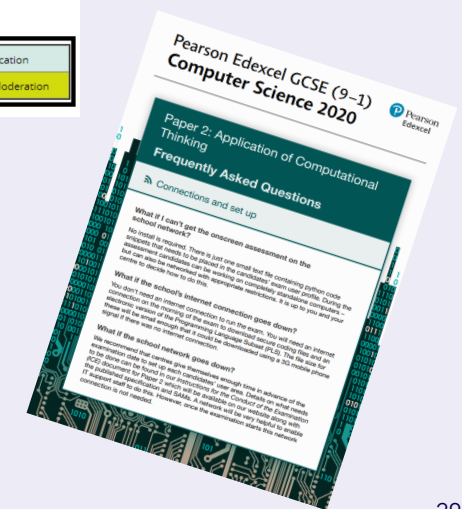
Article Index

What is Learner Work Transfer?

The Learner Work Transfer portal allows Edexcel Online users to securely transfer digital evidence required for assessment to Pearson Associates. Evidence is transferred via a 'request', which is created at paper/unit level.

Before you try to access Learner Work Transfer, you will need to ensure that you have the Basic Access permission on your Edexcel Online account.

There are two portals to support the varying assessment methods of our different qualifications.



Training

We have a range of training available to provide flexible options for you:

[On-demand and pre-recorded training](#)

[Centre based training](#)

[Live training](#)

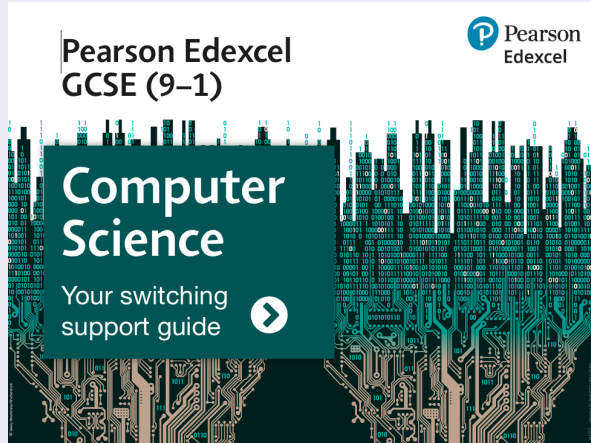
We are currently planning two live events for the Autumn Term.

- [Exam Insights Summer 2026](#)
- [Tackling 6-Mark Questions in Paper 1.](#)

The image displays six training cards arranged in a 2x3 grid. Each card is for 'GCSE (9-1) Computer Science 2020' and features a blue and green abstract graphic on the right side. The cards are as follows:

- Top Row:**
 - Card 1:** 'Pearson Edexcel GCSE (9-1) Computer Science: Feedback on Summer 2022 - Comp...'. Duration: 20mins.
 - Card 2:** 'Planning and Delivering the new GCSE Computer Science specification from 20...'. Duration: 1hr.
 - Card 3:** 'SAMs Specimen Set - Pearson Edexcel GCSE Computer Science 2020: Teaching an...'. Duration: 2-10hrs.
- Bottom Row:**
 - Card 4:** 'Specimen Set 1 - Pearson Edexcel GCSE Computer Science 2020: Preparing Stud...'. Duration: 2-10hrs.
 - Card 5:** 'Specimen Set 2 - Pearson Edexcel GCSE Computer Science 2020: Preparing Stud...'. Duration: 2-10hrs.
 - Card 6:** 'Specimen Set 3 - Pearson Edexcel GCSE Computer Science 2020: Preparing Stud...'. Duration: 2-10hrs.

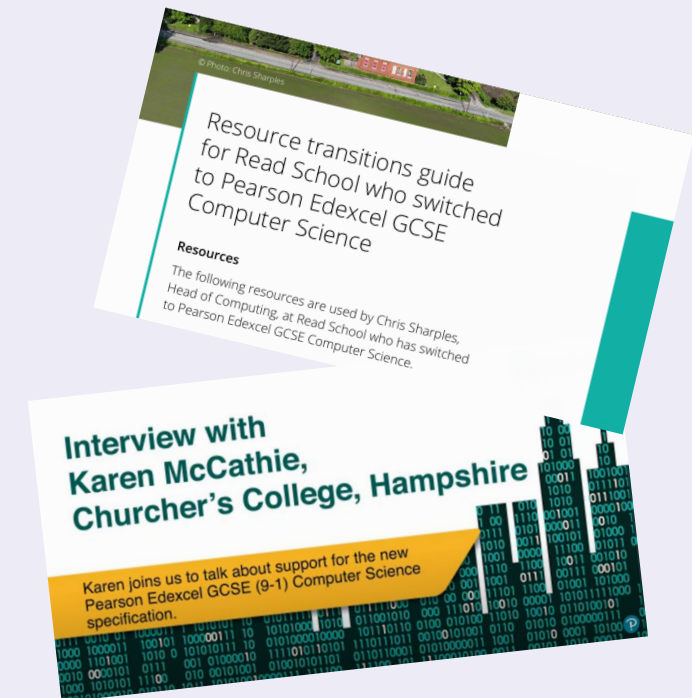
New to GCSE Computer Science?



If you are new to GCSE Computer Science or you are thinking of switching, take a look at our free teaching and learning support.

- [Support switching guide](#)
- [Resource transition guide](#)
- [Contact form for us to talk you through a switch](#)

- Chris Sharples, Head of Computing, at Read School explains why he chose to switch to Pearson Edexcel GCSE Computer Science, the school's transition journey with links to all the resources and a schedule to help others make their own transition as easy and as effective as possible. Find out why he and the students are so pleased that they made the switch. [View the case study and transition guide here.](#)
- Karen McCathie, Head of Computer Science and ICT at Churcher's College, shares her experience with the free resources we've provided.



Dedicated Computer Science Subject Advisor



Tim Brady, our subject expert offers expert help and advice.

You can book an appointment with Tim through our weblink here [Digital, IT & Computer Science](#)

You can email for support or assistance:
TeachingComputerScience@pearson.com
TeachingICT@pearson.com

You can join the Facebook network:
[GCSE Computer Science Facebook Group](#)

You can also keep up to date with the latest Computer Science information through our monthly update from our Subject Advisor.
[Sign up for this here](#)

If you would like **to join our teacher panel** to shape the future Computing qualifications and, **give your view on supportive resource**. Use the **QR code** below to fill out our registration form.





Thanks for your attention.

Happy to take any questions
from delegates.