 This session will begin at 4pm (update)

L3 Cambridge Advanced Nationals (AAQ)

IT: Data Analytics

Computing : Application Development

Vinay Thawait | *Subject Advisor*

Troubleshooting

Are you having issues with sound?

I can't hear anything. What should I do?

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I can't hear anything. Can I change the volume?

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Notification settings

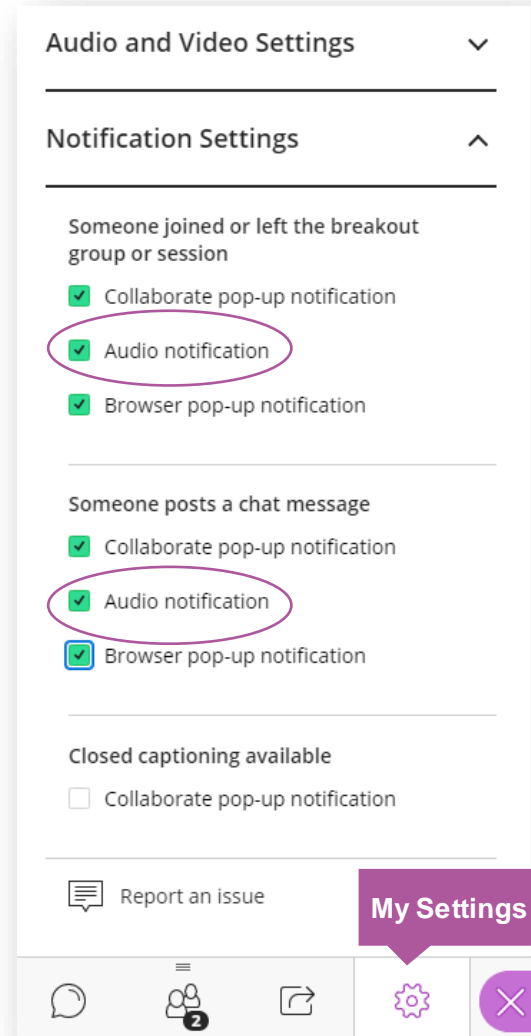
To avoid any distractions during the session, you may find it useful to mute notifications

Select 'My Settings' from the Collaborate panel

Click on 'Notification Settings'

Untick the 'Audio notification' radio buttons

You can also deactivate 'pop-up' notifications from this area



Introduction - Subject Advisors Team

COMPUTING TEAM



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Aims

- What the new Level 3 qualification landscape looks like, including the two routes for students and their qualifications options
- What Cambridge Advanced Nationals (AAQs) are and where they fit into the new post-16 landscape
- What is a full compensation marking model
 - How it will benefit teachers and students
- What teaching content looks like
- How it will be assessed

Policy Recap

L3 Qualification Landscape



The post-16 qualifications review - AAQs

- Students will have **two choices** post-16:
 - **Academic:** A-Levels and Alternative Academic Qualifications (AAQs)
 - **Technical:** T-Levels and Apprenticeships
 - Students on the academic route are expected to 1X AAQ alongside 2X A-Levels.
 - However, there are exceptions where:
 - A student has lower prior attainment
 - SEND students
 - In these cases, a programme of study that includes 2X AAQs and 1X A-Level might be more appropriate
- * Larger AAQs are only available in subjects that do not have a T-level, e.g. Sport

The post-16 qualifications review – Cambridge Technicals 2016

- [Cambridge Technicals L3 qualifications](#) (2016 suite) – **Final** teach in 2023/24

Level 3 Cambridge Technical in IT	Final funded new cohort	Defunded for new starts from
Level 3 Cambridge Technical (2016) Diploma in IT (720GLH)	September 2023	July 2024
Level 3 Cambridge Technical (2016) Extended Diploma in IT (1080GLH)	September 2023	July 2024

- A change to existing policies, for example, due to a change of government, this reform will be reviewed.
- Could lead to a continue of funding for current L3 IT qualifications.

Level 3 Cambridge Technical in IT	Final funded new cohort	Defunded for new starts from
Certificate in IT (180 GLH)	September 2024	July 2025
Extended Certificate in IT(360GLH)	September 2024	July 2025
Introductory Diploma in IT(360GLH)	September 2024	July 2025
Foundation Diploma in IT (540GLH)	September 2024	July 2025

<https://teach.ocr.org.uk/level-3-cambridge-technicals-in-it-defunding-reminder>

<https://teach.ocr.org.uk/level-3-cambridge-technicals-in-it-defunding-reminder>

The post-16 qualifications review – Cambridge Technicals 2016

Larger qualifications 720GLH and 1080 GLH offer for students starting in Sept 2024

Combine 2X 360GLH Cambridge Technical L3 qualifications

Combine 2X 540GLH Cambridge Technical L3 qualifications

Level 3 Cambridge Technical Foundation Diploma in IT (540GLH)



Level 3 Cambridge Technical Foundation Diploma in Business (540GLH)

or

Level 3 Cambridge Technical Foundation Diploma in IT (540GLH)



Level 3 Cambridge Technical Foundation Diploma in Digital Media (540GLH)

<https://www.ocr.org.uk/qualifications/cambridge-technicals/ucas-tariff-points/>

Combine 3X 360GLH Cambridge Technical qualifications

- [Level 3 Cambridge Technical Extended Certificate in IT \(360GLH\)/Introductory Diploma in IT \(360GLH\)](#)
- [Level 3 Cambridge Technical Extended Certificate in Business \(360GLH\)](#)
- [Level 3 Cambridge Technical Extended Certificate in Digital Media \(360GLH\)](#)

There are no restrictions in subject combinations and students can also take any of our Level 3 Cambridge Technicals alongside any [A-Levels](#) and the [Extended Project Qualification](#).

<https://teach.ocr.org.uk/level-3-cambridge-technicals-in-it-defunding-reminder>

New qualifications

Meaningful Changes



What is new in the Cambridge Advanced Nationals (AAQs)?

We have taken the opportunity to make meaningful changes that give teachers greater confidence in marking and reward students for the skills they are able to demonstrate.

Full compensation

**Designed with
teachers and
universities**

**Support and
resources**

**2-year assignment
life span**

**Complement A-
Levels**

**Mixed curriculum
suggestions**

**Clear and granular
assessment criteria**

**Focus on the
application of
knowledge**

**Larger sizes where
possible**

Compensation at unit level assessment

Hurdles based model

P1	M1	D1
P2	M2	D2
P3	M3	
P4		

In the hurdles-based model above, the student would fail to achieve a pass grade for the unit.

New Compensation based model

P1	M1	D1
P2	M2	D2
P3	M3	
P4		

Using our new compensation-based model, the same student would still achieve a result for the unit.

Expanded unit level assessment

An example of a 75GLH unit in our new Cambridge Advanced Nationals

Total number of criteria: **24** (12 Pass, 7 Merit, 5 Distinction)

Total required for a **Unit Pass: 10**

Total required for a **Unit Merit: 15**

Total required for a **Unit Distinction: 20**

The total required for a Pass, Merit or Distinction can come from any unit criteria (e.g., 8 pass, 2 merit and 2 distinction would result in an overall unit Pass).

*Boundaries will be reviewed over time

Expanded unit level example

75GLH unit (F202): 24 Criteria (12 Pass, 7 Merit, 5 Distinction)

Pass: 10 Merit: 15 Distinction: 20

Pass	Merit	Distinction
P1: Identify appropriate SMART success criteria against the purpose and user requirements.	M1: Explain the constraints for the project.	
P2: Identify the spreadsheet data model structure.	M2: Identify the formulae for the spreadsheet data model.	D1: Identify the formatting and validation for the spreadsheet data model. Include user comments and appropriate protection.
P3: Identify the HCI features for the spreadsheet.		
P4: Create a test plan to test the useability of the spreadsheet data model.	M3: Create a test plan to test the technical aspects of the spreadsheet data model.	D2: Justify the selection of tests to be used in the test plan through a test strategy.

Pass	Merit	Distinction
P5: Produce a spreadsheet data model based on the design documentation.	M4: Produce a functioning spreadsheet data model based on the design documentation.	
P6: Use formatting in the spreadsheet data model.	M5: Use linked worksheets and functions in the spreadsheet data model.	D3: Use validation, protection and data manipulation tools in the spreadsheet data model.
P7: Use simple formulae in the spreadsheet data model.		
P8: Carry out end testing of the spreadsheet data model and record the outcomes in a test plan.		

Pass	Merit	Distinction
P12: Compare the user requirement with the spreadsheet data model created.	M7: Assess the effectiveness of the HCI features in the spreadsheet data model.	D5: Evaluate the effectiveness of the spreadsheet data model and suggest improvements that could be made.

Pass	Merit	Distinction
P9: Develop outputs to be used to aid the analysis of the results of the spreadsheet model.	M6: Produce an analysis of the trends and/or patterns indicated by the outputs.	D4: Evaluate the outcomes of the analysis and make recommendations.
P10: Create the required content of the technical documentation for the spreadsheet data model.		
P11: Create the required content of the user documentation for the spreadsheet data model.		

Compensation at qualification level

Every criterion that a student achieves will count towards their final qualification outcome.

Hurdles based model

P1	M1	D1
P2	M2	D2
P3	M3	
P4		

In the hurdles-based model above, M1, M2 and D1 would not count towards the final qualification grade and the student would have achieved a Pass at unit level.

Compensation based model

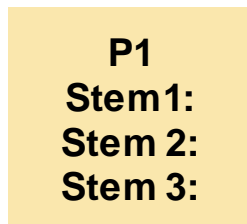
P1	M1	D1
P2	M2	D2
P3	M3	
P4		

Using our new compensation-based model, M1, M2 and D1 all count towards the final qualification grade, even if a student had not achieved a Merit or Distinction at unit level.

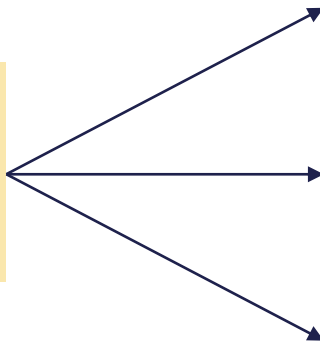
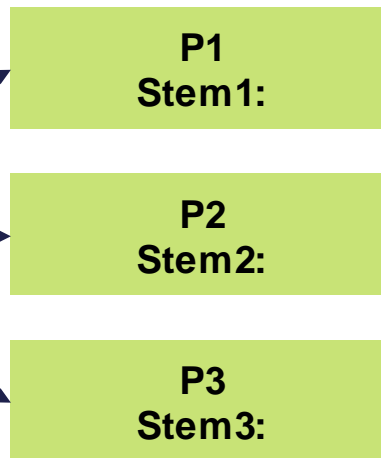
Granular, Clear and Specific Assessment Criteria

We have in most cases made criteria much more specific and granular. This aims to support teachers in identifying the evidence required to meet each criterion and rewards students for the evidence they were able to produce.

Traditional Vocational Qualification



Cambridge Advanced Nationals



It does not
increase
teaching and
learning time, or
assessment
volume.

Questions



OCR L3 Cambridge Advanced National (AAQ)

IT: Data Analytics

Computing: Application Development

Structure, Unit Content and Assessment Overview



CAMBRIDGE
ADVANCED
NATIONALS

Aim for higher

OCR
Oxford Cambridge and RSA



<https://teach.ocr.org.uk/cambridge-advanced-nationals>

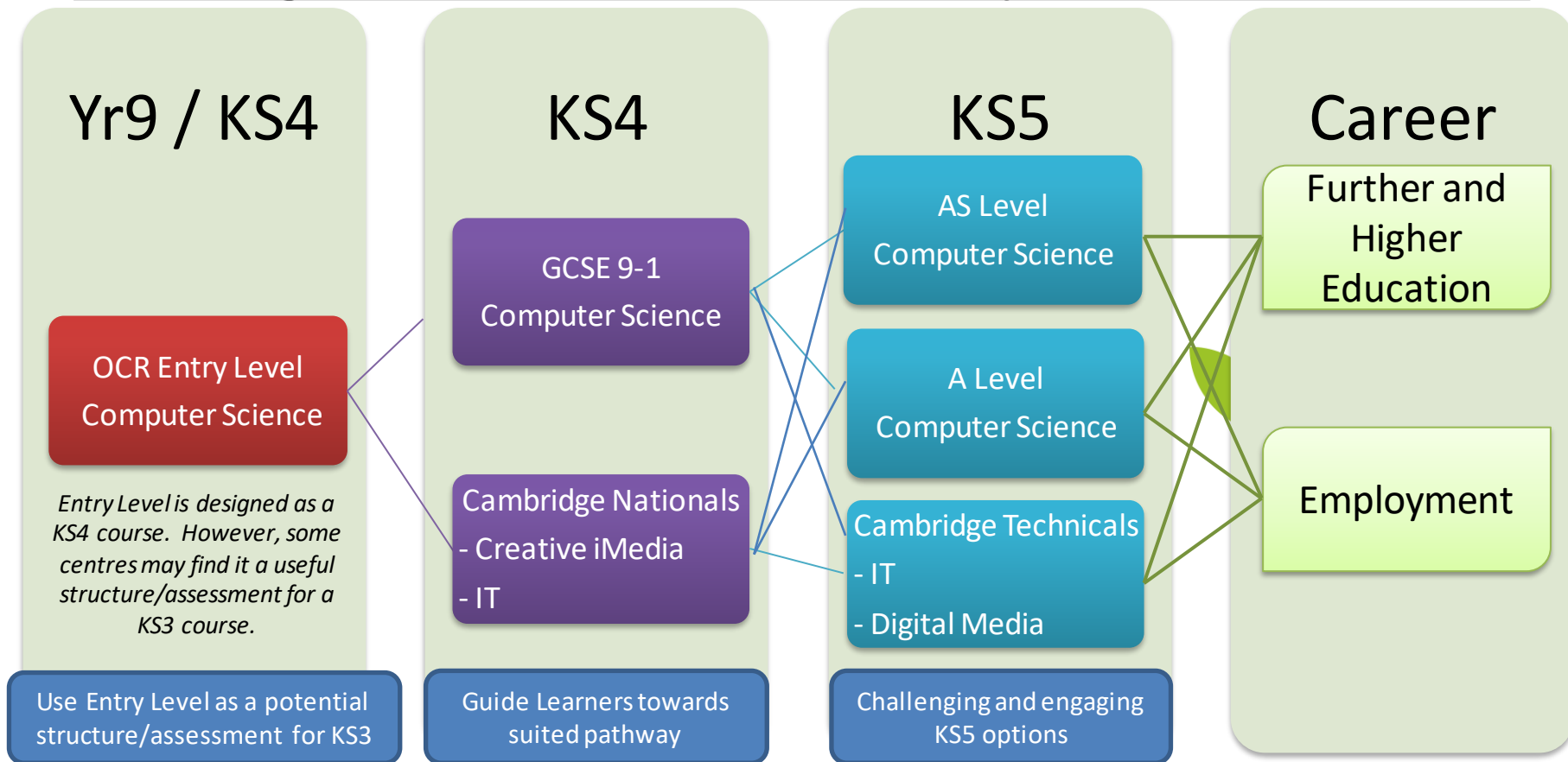
OCR L3 Cambridge Advanced National (AAQ)

IT: Data Analytics

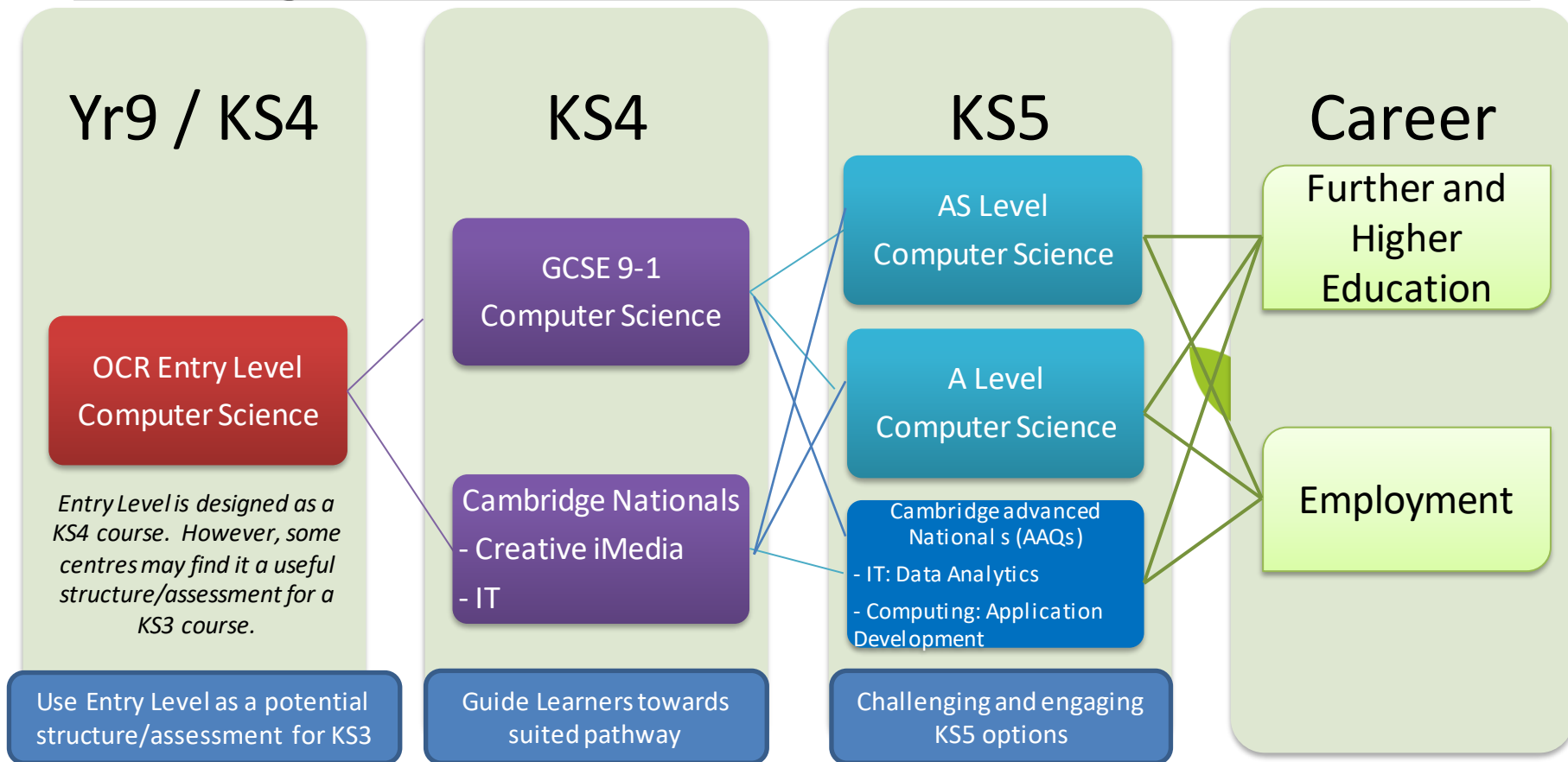
Structure, Unit Content and Assessment Overview



Computing Qualifications suite – currently available



Computing Qualifications suite – September 2025



A mix curriculum for Computing Qualifications

September 2025

KS5

A Level Computer
Science

Cambridge
Advanced National
(AAQ) in IT: Data
analytics

A Level Subject

KS5

A Level Computer
Science

Cambridge
Advanced National
(AAQ) in Application
development

A Level Subject

KS5

A Level Subject

Cambridge
Advanced National
(AAQ) IT or
Computing

A Level Subject

KS5

A Level Computer
Science

A Level Subject

A Level Subject

Cambridge Advanced National (AAQ) in IT: Data Analytics

Data Analytics (Extended Certificate) – H119 (360GLH)

Unit no	Unit title	Unit ref no (URN)	Guided learning hours (GLH)	How is it assessed?	Mandatory or optional
F200	Fundamentals of data analytics	TBC	75	E	M
F201	Big data and machine learning	TBC	70	E	M
F202	Spreadsheet data modelling	TBC	75	N	M
F203	Relational database design	TBC	70	N	O
F204	Data and the Internet of Everything (IoE)	TBC	70	N	O
F205	Data visualisation	TBC	70	N	O
F206	Data and digital marketing	TBC	70	N	O

Structure and Units

- Two mandatory externally assessed units
- One mandatory NEA unit
- Two optional NEA units (from four)

Cambridge Advanced National (AAQ) in IT: Data Analytics

Data Analytics (Certificate) – H019 (150GLH)

Structure and Units

Unit no	Unit title	Unit ref no (URN)	Guided learning hours (GLH)	How is it assessed?	Mandatory or optional
F200	Fundamentals of data analytics	TBC	75	E	M
F202	Spreadsheet data modelling	TBC	75	N	M

- One mandatory externally assessed unit
- One mandatory NEA unit

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Overview - Extended Certificate H119 and Certificate H019

F200 Fundamentals of data analytics

Assessed by exam - M

- Topic Area 1 Understanding data
- Topic Area 2 Managing data
- Topic Area 3 How data can be accessed and managed across platforms
- Topic Area 4 Legal considerations
- Topic Area 5 Job roles, skills and attributes in data analytics

Unit F200: Fundamentals of Data Analytics	
Topic Area 1: Understanding data	
Teaching content	Breadth and depth
1.1 Data, information and knowledge	
<ul style="list-style-type: none">□ What data, information and knowledge are□ Sources of data, information and knowledge□ Interaction of data, information and knowledge□ Data and information in society	<p>To include:</p> <ul style="list-style-type: none">□ Know what data, information and knowledge are□ The sources of data, information and knowledge□ The links and differences between data, information, and knowledge□ How data is converted to information□ The benefits and limitations of the use of data and information to organisations and individuals□ Know how data and information is used in society□ How the use of data and information can have a positive impact on society□ How the use of data and information can have negative consequences for society
1.2 Big data	
<ul style="list-style-type: none">□ What big data is<ul style="list-style-type: none">• Sources• Formats□ The scope of big data<ul style="list-style-type: none">• Applications• Situations used	<p>To include:</p> <ul style="list-style-type: none">□ The concept of big data□ How big data is structured□ What big data is used for□ The benefits and limitations of big data to organisations and individuals <p>Does not include:</p> <ul style="list-style-type: none">□ The evolution of big data□ Data preparation techniques□ Data mining techniques□ Big data infrastructure

Teaching must cover **both** the **teaching content** and **breadth and depth** columns.

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Assessment - Extended Certificate H119 and Certificate H019

Unit F200

OCR Level 3 Cambridge Advanced Nationals (AAQ) in IT: Data Analytics

F200 Sample paper

1 What is data?

Tick (✓) one box.

A general rule

Identity of things

Raw facts and figures

Useful items about something

☐
☐
☐
☐

[1]

2 In a chain of pizza restaurants, each restaurant uses a spreadsheet to keep track of their daily and weekly pizza sales.

This is part of the spreadsheet for one of the restaurants.

Pizza sizes	Prices	Number of pizzas sold		
		Sat	Sun	Total
Small	£9.00	40	20	60
Large	£14.00	90	10	100
Total		130	30	160

(a) Identify two different items of information the restaurant can get from this data.

1

2

[2]

F200 - Fundamentals of data analytics

F201 - Big data and machine learning

F202 - Spreadsheet data modelling

F203 - Relational database design

F204 - Data and the Internet of Everything (IoE)

F205 - Data visualisation

F206 - Data and digital marketing

Draft [Sample Assessment Materials](#)

MARK SCHEME

1	
Max mark	1
Answer	Raw facts and figures (1)
Guidance	Correct answer only
2 (a)	
Max mark	2
Answer	Any two from: <ul style="list-style-type: none">• Price of any size pizza (1)• Sales of any size pizza on any day (1)• Total sales of each size pizza (1)• Total overall pizza sales per day (1)• Total overall pizza sales over three days (1)
Guidance	1 mark for each correct answer. Do not accept: <ul style="list-style-type: none">• Answers about knowledge (as in 2b)• Pizza sizes (i.e. repeating headings with no context)• Prices (i.e. repeating headings with no context)• Number of pizzas sold (i.e. repeating headings with no context)

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Assessment - Extended Certificate H119 and Certificate H019

Unit F200

- 12 A new book-publishing company currently has seven staff in total. The book-publishing company wants to reorganise its data storage system.

Four staff work in the small main office and three work remotely from home. The company does not have dedicated IT staff. The staff mainly use word processing software, an accounts database, payroll system and an email system.

Discuss whether the book publishing company should use a Network Attached Storage (NAS) system.

In your answer you must write about:

- Any **benefits** for the book-publishing company
- Any **limitations** for the book-publishing company
- Whether you would recommend that the book-publishing company use an NAS and the reasons why.

[6]

12	
Max mark	6
Levels of Response	<p>Level 3 (high) 5-6 marks</p> <p>A thorough discussion which shows detailed evaluation, which includes:</p> <ul style="list-style-type: none">• a range of points from both sides of the argument• a detailed analysis in the context of the question• a clear conclusion(s) with detailed reasons/justifications• consistent use of appropriate subject terminology. <p>Level 2 (mid) 3-4 marks</p> <p>An adequate discussion which shows sound evaluation, which includes:</p> <ul style="list-style-type: none">• some points from both sides of the argument• some analysis in the context of the question• an adequate conclusion(s) with relevant reasons/justifications• some use of appropriate subject terminology.

Version 1 (July 2023)

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OCR Level 3 Cambridge Advanced National (AAQ) in IT: Data Analytics

F200 Sample paper mark scheme

<p>Level 1 (low) 1-2 marks</p> <p>A basic discussion which shows limited evaluation, which includes:</p> <ul style="list-style-type: none">• a few points from the argument• a limited analysis in the context of the question• a brief conclusion(s) with limited reasons/justifications• use of appropriate subject terminology is limited. <p>0 marks</p> <p>Answer is not worthy of credit.</p>

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Overview - Extended Certificate – H119

F201 Big data and machine learning

Assessed by exam - M

- Topic Area 1 The scope of managing big data
- Topic Area 2 The Infrastructure challenges of big data
- Topic Area 3 Big data, machine learning and artificial intelligence
- Topic Area 4 Legal and ethical issues in data management
- Topic Area 5 Environment and society

Unit F201: Big data and machine learning	
Topic Area 1: The scope of managing big data	
Teaching content	Breadth and depth
1.1 The six characteristics (6Vs)	
<ul style="list-style-type: none">□ Volume of data□ Variety of data types□ Velocity of streamed data□ Value of data□ Veracity of data□ Variability of data inconsistencies	To include: <ul style="list-style-type: none">□ Know what each characteristic is□ How each characteristic helps to define big data□ The purpose of each characteristic□ When each characteristic can be used
<ul style="list-style-type: none">□ Six steps for analysing big data<ul style="list-style-type: none">• Data collection• Data storing• Data cleaning• Data mining• Data analysis• Data consumption	To include: <ul style="list-style-type: none">□ Know what is involved in each step□ The role of each step in the process of managing big data□ When each analysis step can be used
1.2 The evolution of big data	
<ul style="list-style-type: none">□ Developments<ul style="list-style-type: none">• Database management systems• Internet of Everything (IoE)• Proliferation of devices generating digital data• Search engines• Web-based storage	To include: <ul style="list-style-type: none">□ How each development has contributed to the evolution of big data□ The benefits and limitations of each development in relation to the evolution of big data
1.3 How big data is captured	
<ul style="list-style-type: none">□ Data capture methods<ul style="list-style-type: none">• Digital images and videos• GPS signals• IoE connected devices• Natural language• Online surveys• Satellites• Sensors• Social media sites• Transactional records	To include: <ul style="list-style-type: none">□ Know what big data capture is□ Know how data capture methods are used to collect data□ When the data capture methods can be used□ The types of data generated by using the different data capture methods□ The benefits and limitations of each data capture method

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Assessment - Extended Certificate H119 and Certificate H019

Unit F202

Scenario

A pop-up shop has been set up to sell healthy snack foods. The busy owner wants a spreadsheet model to analyse the outgoing expenses, sales and profits for two weeks to help to decide whether to make the shop permanent. If the shop is shown to be profitable after two weeks, the owner will make the shop permanent.

Requirements

The owner wants the spreadsheet model to:

- Open with an easy-to-use human computer interface (HCI) which links to the different worksheets
- Store and keep track of stock data
- Store supplier data
- Store daily sales data for a two-week period
- Calculate selling price per unit of each item
- Calculate daily profit for each item
- Calculate which items need reordering and the cost of each order
- Calculate overall profit over the two-week period
- Show the effect on business income if the profit margin is increased or decreased
- Produce a report which analyses the future profitability of the shop and makes appropriate recommendations
- Produce visual representations of:
 - income from the most and least profitable items
 - total outgoings and total income for the two-week period
 - average daily sales of each item during the two-week period
- Be protected by this password: **healthySnacks**

Information

- The cost price of each item is the cost of one item in a pack
- The selling price of each item is 20% higher than the cost price
- The default profit margin is 20%
- A product must be re-ordered when the minimum stock level is reached. The number ordered should bring the product back as close to the maximum stock level as possible
- When an item is reordered, it will arrive the next day and is included in the next day's stock, i.e. if you reorder on Monday, the order will arrive on Tuesday and will need to be included in Tuesday's stock
- The current rental costs are £60 per week

These data sheets have been provided:

- Stock data
- Supplier data
- Sales data

You **must** use them to plan, create and test your spreadsheet.

Task 1

Planning and designing the model

Topic Areas 1 and 2 are assessed in this task.

The task is:

Plan the new spreadsheet model for the pop-up shop using appropriate design tools and documentation.

Prepare a test plan for your spreadsheet model.

You will need to look at the data provided to help you plan.

Your evidence **must** include:

- All your planning documentation.

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

Pass	Merit	Distinction
P1: Identify appropriate SMART success criteria against the purpose and user requirements.	M1: Explain the constraints for the project.	
P2: Identify the spreadsheet data model structure.	M2: Identify the formulae for the spreadsheet data model.	D1: Identify the formatting and validation for the spreadsheet data model. Include user comments and appropriate protection.
P3: Identify the HCI features for the spreadsheet.		
P4: Create a test plan to test the usability of the spreadsheet data model.	M3: Create a test plan to test the technical aspects of the spreadsheet data model.	D2: Justify the selection of tests to be used in the test plan through a test strategy.

Cambridge Advanced National (AAQ) in IT: Data Analytics

Unit Assessment - Extended Certificate H119 and Certificate H019

Unit F202

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	<ul style="list-style-type: none">Students must present success criteria as SMART objectives.The SMART objectives must be linked to the purpose and user requirements from the scenario.
M1	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
P2	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
M2	<ul style="list-style-type: none">Calculations must be expressed as headings, not cell references.
D1	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
P3	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
P4	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
M3	<ul style="list-style-type: none">There is no assessment guidance for this criterion.
D2	<ul style="list-style-type: none">Students must write a test strategy statement, not a lengthy document.

Advice:

- Remember to clearly reference any information used from books, websites or other sources to support your evidence.

Task 1

Planning and designing the model

Topic Areas 1 and 2 are assessed in this task.

The task is:

Plan the new spreadsheet model for the pop-up shop using appropriate design tools and documentation.

Prepare a test plan for your spreadsheet model.

You will need to look at the data provided to help you plan.

Your evidence **must** include:

- All your planning documentation.

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

Pass	Merit	Distinction
P1: Identify appropriate SMART success criteria against the purpose and user requirements.	M1: Explain the constraints for the project.	
P2: Identify the spreadsheet data model structure.	M2: Identify the formulae for the spreadsheet data model.	D1: Identify the formatting and validation for the spreadsheet data model. Include user comments and appropriate protection.
P3: Identify the HCI features for the spreadsheet.		
P4: Create a test plan to test the useability of the spreadsheet data model.	M3: Create a test plan to test the technical aspects of the spreadsheet data model.	D2: Justify the selection of tests to be used in the test plan through a test strategy.



Questions

Assessment Overview

IT: Data Analytics



Cambridge Advanced National (AAQ) in IT: Data Analytics

Assessment Overview - Certificate H019 and Extended Certificate H119

Extended certificate H119

- F200 Exam 1 hour 15 minutes – M (75 GLH) 60 marks
- F201 Exam 1 hour 30 minutes – M (70 GLH) 60 marks
- F202 NEA 15 GLH – M (75 GLH)
- F203 NEA 15 GLH – O (70GLH)
- F204 NEA 15 GLH – O (70GLH)
- F205 NEA 15 GLH – O (70GLH)
- F206 NEA 15 GLH – O (70GLH)

Certificate H019

- F200 Exam 1 hour 15 minutes – M (75 GLH)
 - 60 marks
- F202 NEA 15 GLH – M (75GLH)

4.1.4 Performance objectives (POs):

Each Cambridge Advanced National (AAQ) qualification has four Performance Objectives.

PO1	Show knowledge and understanding
PO2	Apply knowledge and understanding
PO3	Analyse and evaluate knowledge, understanding and performance
PO4	Demonstrate and apply skills and processes relevant to the subject

PO1 is assessed in the externally assessed unit only.

PO4 is assessed in the NEA units only.

Knowledge and understanding

This is what we mean by knowledge and understanding:

Knowledge	<ul style="list-style-type: none">• Be able to identify or recognise an item, for example on a diagram.• Use direct recall to answer a question, for example the definition of a term.
Understanding	<ul style="list-style-type: none">• To assess and evidence the perceived meaning of something in greater depth than straight identification or recall.• Understanding will be expressed and presented using terms such as: how; why; when; reasons for; advantages and disadvantages of; benefits and limitations of; purpose of; suitability of; recommendations for improvement; appropriateness of something to/in different contexts.

Cambridge Advanced National (AAQ) in IT: Data Analytics

Assessment Overview - Certificate H019 and Extended Certificate H119

All results from each unit are awarded on the following scale:

- Distinction (D)
- Merit (M)
- Pass (P)

The overall qualification grades are awarded:

- Distinction* (D*)
- Distinction (D)
- Merit (M)
- Pass (P)
- Unclassified (U)

Cambridge Advanced National (AAQ) in IT: Data Analytics

Assessment Overview - Certificate H019 and Extended Certificate H119

Certificate Qualification:

Unit	Maximum raw mark/number of criteria	Maximum uniform mark (UMS)	Distinction* (UMS)	Distinction (UMS)	Merit (UMS)	Pass (UMS)
F200	60	60	-	48	36	24
F202	24	60	-	48	36	24
Qualification Totals	84	120	108	96	72	48

Extended Certificate Qualification:

Unit	Maximum raw mark/number of criteria	Maximum uniform mark (UMS)	Distinction* (UMS)	Distinction (UMS)	Merit (UMS)	Pass (UMS)
F200	60	60	-	48	36	24
F201	60	60	-	48	36	24
F202	24	60	-	48	36	24
F203	24	60	-	48	36	24
F204	24	60	-	48	36	24
F205	24	60	-	48	36	24
F206	24	60	-	48	36	24
Qualification Totals	192	300	270	240	180	120

Calculating the qualification grades

Cambridge Advanced National (AAQ) in IT: Data Analytics

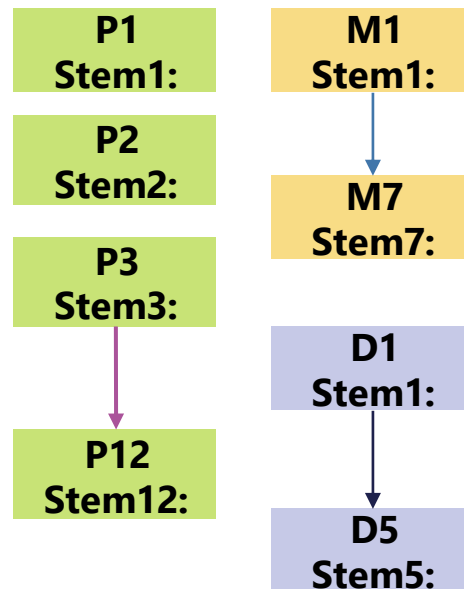
Assessment Overview - Certificate H019 and Extended Certificate H119

The table below shows **the design thresholds** for each grade outcome for the NEA assessments in these qualifications.

Unit size (GLH)	70	75
Total number of criteria	24	24
Number of pass criteria	12	12
Number of merit criteria	7	7
Number of distinction criteria	5	5
Total number of criteria needed for a unit pass	10	10
Total number of criteria needed for a unit merit	15	15
Total number of criteria needed for a unit distinction	20	20

- Made criteria much more specific and granular
- Support teachers in identifying the evidence required to meet each criterion
- Rewards students for the evidence they were able to produce.

Granular criteria



Our new L3 Cambridge Advanced National (AAQ)

Computing: Application Development

Structure, Unit Content and Assessment Overview



Cambridge Advanced National (AAQ) in Computing: Application Development

Application Development (Extended Certificate) – H129 (360GLH)

Unit no	Unit title	Unit ref no (URN)	Guided learning hours (GLH)	How is it assessed?	Mandatory or optional
F160	Fundamentals of application development	TBC	75	E	M
F161	Developing application software	TBC	70	E	M
F162	Designing and communicating UX/UI solutions	TBC	75	N	M
F163	Game Development	TBC	70	N	O
F164	Web Development	TBC	70	N	O
F165	Immersive technology solution development	TBC	70	N	O
F166	Software development	TBC	70	N	O

- Two mandatory externally assessed units
- One mandatory NEA unit
- Two optional NEA units (from four)

Cambridge Advanced National (AAQ) in Computing: Application Development

Application Development (Certificate) – H029 (150GLH)

Unit no	Unit title	Unit ref no (URN)	Guided learning hours (GLH)	How is it assessed?	Mandatory or optional
F160	Fundamentals of application development	TBC	75	E	M
F162	Designing and communicating UX/UI solutions	TBC	75	N	M

- One mandatory externally assessed unit
- One mandatory NEA unit

Cambridge Advanced National (AAQ) in Computing: Application Development

Unit Overview - Extended Certificate H129 and Certificate H029

F160 Fundamentals of application development

Assessed by exam – M

- Topic Area 1 Types of software used in application design
- Topic Area 2 Software development models
- Topic Area 3 Planning application development projects
- Topic Area 4 Application design scoping
- Topic Area 5 Human computer interface and interaction
- Topic Area 6 Job roles and skills

Unit F160: Fundamentals of application development	
Topic Area 1: Types of software used in application design	
Teaching content	Breadth and depth
1.1 Programs and applications	
<ul style="list-style-type: none">□ Programs□ Applications	<p>To include:</p> <ul style="list-style-type: none">□ Know what a program is□ Know what an application is□ Know the characteristics of a program□ Know the characteristics of an application□ Know the function of an application□ The relationship between programs and applications□ Know the different types of device that use programs/applications
1.2 Operating Systems (OS) for application software	
<ul style="list-style-type: none">□ Network□ Open OS□ Proprietary	<p>To include:</p> <ul style="list-style-type: none">□ Know the characteristics of each type of operating system used to run application software□ The advantages and disadvantages of each type of operating system□ Know the types of device that use each type of operating system□ How defined client requirements affect the selection of an operating system
1.3 Application types and categories	
1.3.1 Application types <ul style="list-style-type: none">□ Communication□ Educational□ Entertainment□ Games□ Lifestyle□ Productivity□ Protection and utility□ Web browsers	<p>To include:</p> <ul style="list-style-type: none">□ The purpose of each application type□ The characteristics of each application type
1.3.2 Application software categories <ul style="list-style-type: none">□ Open□ Closed□ Shareware□ Freeware□ Embedded	<p>To include:</p> <ul style="list-style-type: none">□ Know the characteristics of each application software category□ The purpose of each application software category

Cambridge Advanced National (AAQ) in Computing: Application Development

Unit Overview - Extended Certificate – H129

F161 Developing application software

Assessed by exam - M

- Topic Area 1 Application software considerations
- Topic Area 2 Data and flow in application software
- Topic Area 3 API and protocols
- Topic Area 4 Application software security
- Topic Area 5 Operational considerations
- Topic Area 6 Legal considerations

Topic Area 4: Application software security	
Teaching content	Breadth and depth
4.1 Security considerations	
<ul style="list-style-type: none">□ Threats<ul style="list-style-type: none">• Botnets• Denial of Service (DOS)/Distributed Denial of Service (DDoS)• Hacking• Lack of supplier support• Malicious spam• Malware• Out of date<ul style="list-style-type: none">○ Software○ Hardware○ Firmware□ Physical security mitigations<ul style="list-style-type: none">• Biometrics• Cable locks• Cameras• Locks• RFID• Safe• Swipe cards□ Digital security mitigations<ul style="list-style-type: none">• Access rights• Anti-malware• Back-up• Cryptography• Encryption<ul style="list-style-type: none">○ At rest○ In transit• Firewalls<ul style="list-style-type: none">○ Hardware○ Software• Two-Factor Authentication (2FA)	<p>To include:</p> <ul style="list-style-type: none">□ Know current threats to application security□ The risk(s) to application security posed by each current threat□ Know current physical and digital security mitigations□ How current physical and digital security mitigations protect application software from threats <p>Does not include:</p> <ul style="list-style-type: none">□ The details of specific threats□ The details of the specific workings of mitigations

Teaching must cover **both** the **teaching content** and **breadth and depth** columns.

Cambridge Advanced National (AAQ) in Computing: Application Development

Unit Assessment - Extended Certificate H129

Unit F161

OCR Level 3 Cambridge Advanced Nationals (AAQs) in Application Development

F161 Sample paper

An application is being developed to help primary school students with their maths. The application will be accessed through a website both in school and remotely.

- 1 (a) Explain one advantage and one disadvantage to a user of accessing an application through a website.

Advantage

.....

.....

Disadvantage

.....

.....

[4]

Students could use a desktop device when accessing the maths application.

- (b) Identify two characteristics of desktop devices that make them suitable to access applications.

1

2

[2]

- (c) (i) Identify one device that students could use to access the maths application at home other than a desktop device.

.....[1]

MARK SCHEME

1a	
Max mark	4
Answer	<p>Up to two marks each for one advantage and one disadvantage:</p> <p>One mark for identifying the advantage/disadvantage.</p> <p>One mark for saying how the advantage/disadvantage affects a user accessing an application through a website.</p> <p>Advantage e.g.:</p> <ul style="list-style-type: none">The application website can be located using a search engine (1) so users are not restricted to accessing the application on a single device (1)The application website can be accessed at any time on a range of devices in any location (1) so it's both convenient and accessible for users (1)The website address can be bookmarked (1) meaning users can go directly to the website through a shortcut (1) <p>Credit any other appropriate response.</p> <p>Disadvantage e.g.</p> <ul style="list-style-type: none">The website may be spoofed (1) so users may access a fake website if the web address is not checked (1)If the website is not search engine optimised (1) then it may not appear at the top of search results/be found by the user (1)If security measures are not maintained (1) a virus/example could be attached leading to a cyber-attack on users (1) <p>Credit any other appropriate response.</p>
Guidance	<p>Up to two marks max for explaining an advantage and two marks max for explaining a disadvantage.</p> <p>The focus of the question is generic. The answer does not have to be applied to the context but accept answers that are applied.</p>

F160 - Fundamentals of application development

F161 - Developing application software

F162 - Designing and communicating UX/UI solutions

F163 - Game development

F164 - Website development

F165 - Immersive technology solution development

F166 - Software development

Draft [Sample Assessment Materials](#)

Cambridge Advanced National (AAQ) in Computing: Application Development

Unit Assessment - Extended Certificate H129

Unit F161

The website and maths application will be stored in a private cloud. To access the private cloud, schools need to register and pay a subscription. When the subscription has been paid, schools receive a school username and auto-generated password. Each teacher and student will have their own log-in details to access the application. Students can be added or removed at any time during the subscription.

- 2 Explain one advantage and one disadvantage to schools of the maths application being stored in a private cloud.

Advantage

.....

.....

.....

Disadvantage

.....

.....

.....

[4]

2	
Max mark	4
Answer	<p>Up to two marks each, for one advantage and one disadvantage.</p> <p>One mark for identifying the advantage/disadvantage.</p> <p>One mark for saying how the advantage/disadvantage affects schools.</p> <p>Advantage e.g.:</p> <ul style="list-style-type: none">• There is an increased level of security (1) so the school can be assured that the risk of data breaches is reduced and student data will not be leaked (1)• Schools know that pupil data is stored securely in line with data protection legislation. (1) This means that the school can have confidence that it is protecting the personal information of the students appropriately (1)• Greater scalability (1) so extra students can be added within the constraints of the subscription with no risk of running out of storage space for their progress (1)• Increased reliability (1) so the school can be assured of access to the website/application at any time if students/teachers are working from home (1) <p>Credit any other appropriate response.</p> <p>Disadvantage e.g.:</p> <ul style="list-style-type: none">• Remote access may be limited due to the increased security (1) meaning students/teachers may not always have access when needed as devices used may not be trusted (1)• The subscription may be more expensive than other storage options (1) meaning with limited school budgets the cost may be prohibitive (1)• The links to the private cloud/password may go into teacher spam/junk folders (1) meaning access to the cloud for students may be limited (1) <p>Credit any other appropriate response.</p>
Guidance	Up to two marks max for explaining an advantage and two marks max for explaining a disadvantage.

Cambridge Advanced National (AAQ) in Computing: Application Development

Unit Overview - Extended Certificate H129 and Certificate H029

F162 Designing and communicating UX/UI solutions

Assessed by an NEA assignment - M

- Topic Area 1 Principles of UX and UI design
- Topic Area 2 Plan UX/UI solutions
- Topic Area 3 Design UX/UI solutions
- Topic Area 4 Communicate UX/UI solutions
- Topic Area 5 Review and improve UX/UI solutions

Topic Area 5: Review and improve UX/UI solutions	
Teaching content	Exemplification
5.1 Review the fitness for purpose of UX/UI solutions	
<ul style="list-style-type: none">□ Suitability for meeting:<ul style="list-style-type: none">• Client requirements• User requirements• Solution requirements□ Application of UX/UI design principles	To include: <ul style="list-style-type: none">□ How to assess strengths and weaknesses of UX/UI solutions□ How to compare UX/UI solutions against requirements□ How to assess the application of UX/UI design principles
5.2 Improvements to UX/UI solutions	
<ul style="list-style-type: none">□ User experience□ Use of UX/UI design principles□ Use of principles of UX/UI design psychology□ Use of UX/UI interface standards	To include: <ul style="list-style-type: none">□ How to assess potential improvements to UX/UI solutions Does not include: <ul style="list-style-type: none">□ Implementing improvements to UX/UI solutions
5.3 Review the processes used to plan, design and communicate UX/UI solutions	
<ul style="list-style-type: none">□ Effectiveness of processes used□ Effectiveness of tools and techniques used	To include: <ul style="list-style-type: none">□ How to assess the strengths and weaknesses in the processes used to plan, design and communicate UX/UI solutions□ How to assess the effectiveness of the processes used to plan, design and communicate UX/UI solutions□ How to assess the effectiveness of tools and techniques used to plan, design and communicate UX/UI solutions



Questions

Assessment Overview

Cambridge Advanced National (AAQ) in Computing: Application Development

Assessment Overview - Certificate H029 and Extended Certificate H129

Extended certificate H129

- F160 Exam 1 hour 15 minutes - M (75GLH) – 60 marks
- F161 Exam 1 hour 30 minutes – M (70GLH) – 60 marks
- F162 NEA 15 GLH – M (75GLH)
- F163 NEA 15 GLH – O (70GLH)
- F164 NEA 15 GLH – O (70GLH)
- F165 NEA 15 GLH – O (70GLH)
- F166 NEA 15 GLH – O (70GLH)

Certificate H029

- F160 Exam 1 hour 15 minutes – M (75GLH)
- 60 marks
- F162 NEA 15 GLH – M (75GLH)

4.1.4 Performance objectives (POs):

Each Cambridge Advanced National (AAQ) qualification has four Performance Objectives.

PO1	Show knowledge and understanding
PO2	Apply knowledge and understanding
PO3	Analyse and evaluate knowledge, understanding and performance
PO4	Demonstrate and apply skills and processes relevant to the subject

PO1 is assessed in the externally assessed unit only.

PO4 is assessed in the NEA units only.

Knowledge and understanding

This is what we mean by knowledge and understanding:

Knowledge	<ul style="list-style-type: none">• Be able to identify or recognise an item, for example on a diagram.• Use direct recall to answer a question, for example the definition of a term.
Understanding	<ul style="list-style-type: none">• To assess and evidence the perceived meaning of something in greater depth than straight identification or recall.• Understanding will be expressed and presented using terms such as: how; why; when; reasons for; advantages and disadvantages of; benefits and limitations of; purpose of; suitability of; recommendations for improvement; appropriateness of something to/in different contexts.

Cambridge Advanced National (AAQ) in Computing: Application Development

Assessment Overview - Certificate H029 and Extended Certificate H129

All results from each unit are awarded on the following scale:

- Distinction (D)
- Merit (M)
- Pass (P)

The overall qualification grades are awarded:

- Distinction* (D*)
- Distinction (D)
- Merit (M)
- Pass (P)
- Unclassified (U)

Cambridge Advanced National (AAQ) in Computing: Application Development

Assessment Overview - Certificate H029 and Extended Certificate H129

Certificate Qualification:

Unit	Maximum raw mark/ number of criteria	Maximum uniform mark (UMS)	Distinction* (UMS)	Distinction (UMS)	Merit (UMS)	Pass (UMS)
F160	60	60	-	48	36	24
F162	24	60	-	48	36	24
Qualification Totals	84	120	108	96	72	48

Extended Certificate Qualification:

Calculating the
qualification
grades

Unit	Maximum raw mark/ number of criteria	Maximum uniform mark (UMS)	Distinction* (UMS)	Distinction (UMS)	Merit (UMS)	Pass (UMS)
F160	60	60	-	48	36	24
F161	60	60	-	48	36	24
F162	24	60	-	48	36	24
F163	24	60	-	48	36	24
F164	24	60	-	48	36	24
F165	24	60	-	48	36	24
F166	24	60	-	48	36	24
Qualification Totals	192	300	270	240	180	120

Keeping you updated

Support and Next Steps




Resources and Support

What is available now:

- Specification
- Mapping guide
- Sample Assessment Materials (SAMs)


Working now:

- Switching guide
- 'Understanding the assessment' guidance: examined and moderated
- Student guides to NEA assignment
- Curriculum planners
- Sample exemplars
- Specific CPD events



Sample Assessment Materials

F200 - Fundamentals of data analytics
F201 - Big data and machine learning
F202 - Spreadsheet data modelling
F203 - Relational database design
F204 - Data and the Internet of Everything (IoT)
F205 - Data visualisation
F206 - Data and digital marketing



Sample Assessment Materials

F160 - Fundamentals of application development
F161 - Developing application software
F162 - Designing and communicating UX/UI solutions
F163 - Game development
F164 - Website development
F165 - Immersive technology solution development
F166 - Software development

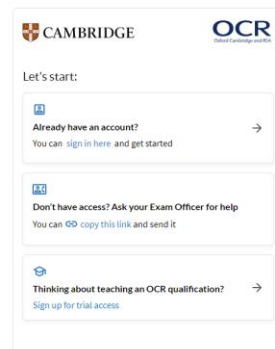
Resources and Support – Teach Cambridge

[Teach Cambridge](#) is our secure website that provides teachers with a single point of access to support and resources provided by OCR and Cambridge University Press and Assessment.

This includes secure materials, such as set assignments, examiners' reports, and exemplars, as well as online, on-demand training and many other teaching resources such as schemes of work and curriculum plans.

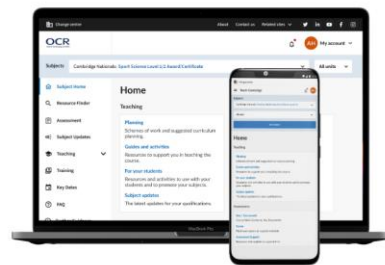
There are several benefits to support you as a teacher:

- receive targeted updates about subjects relevant to you.
- save time and effort searching for resources, training and support over multiple pages.
- the powerful search function in Teach Cambridge enables you to quickly find all the resources and training you need for your subject and save them to your own personalised homepage.
- you'll only see updates and resources, content and training relevant to your subjects.
- you can favourite the content, so resources you need regular access to are easy to find every time.



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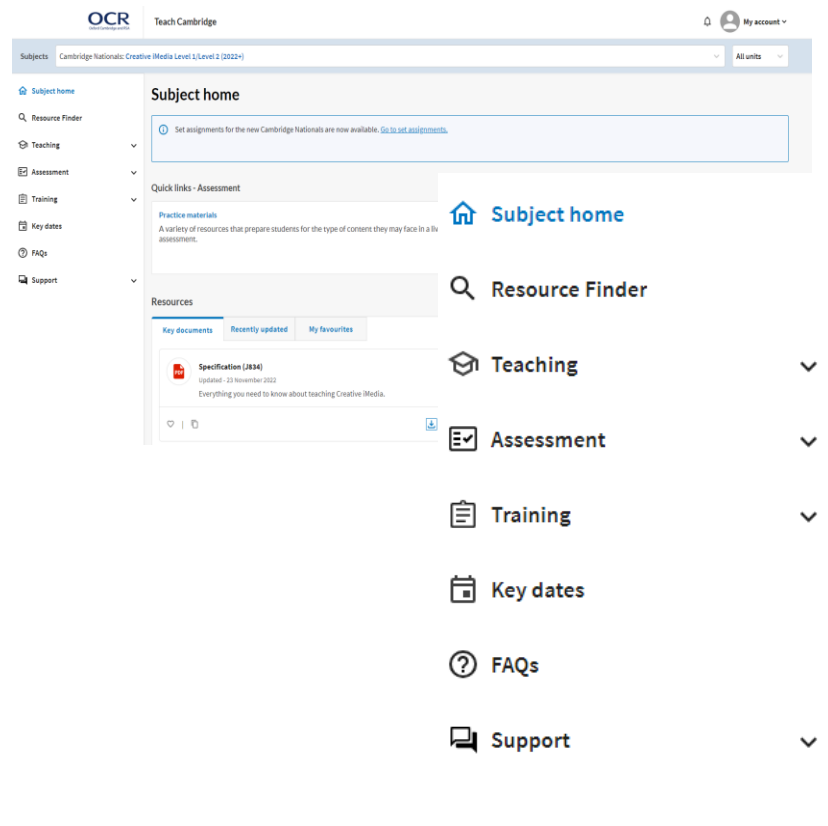
Resources and Support

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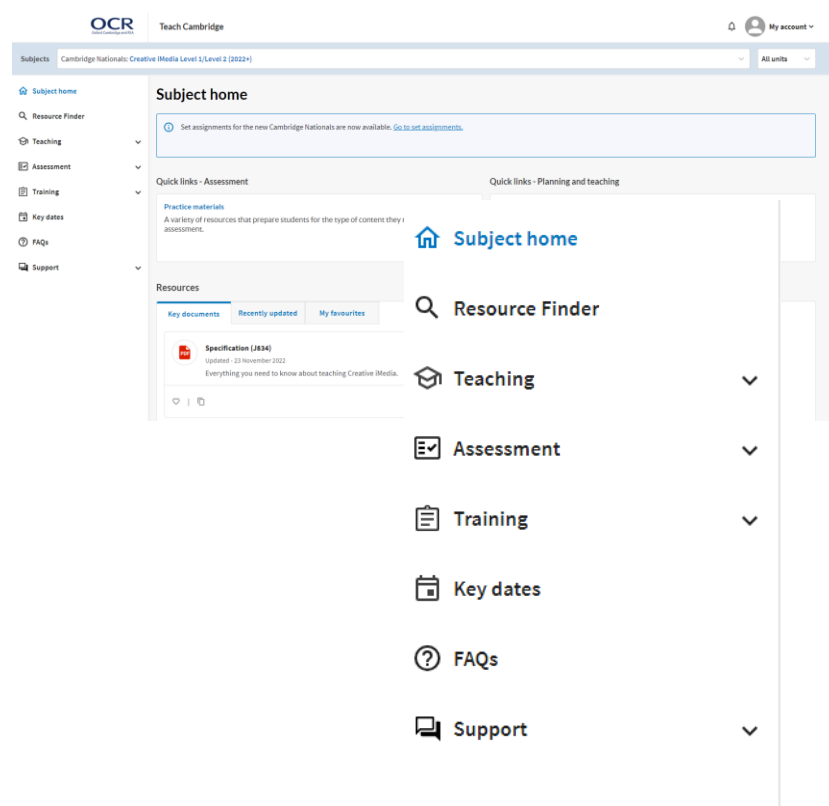
Resources and Support

Active Results – access our free online results analysis to help you review exam performance on individual candidates, cohorts, whole centre and national averages. [Active Results \(ocr.org.uk\)](https://ocr.org.uk).

Endorsed Textbooks – See the textbooks and other resources that are endorsed by OCR for this subject.

Support – links to newsletters, blogs and teacher network events for your qualification.

Access to scripts – accessed via My Cambridge, exams officers can download copies of your students' completed question papers or 'scripts' so your centre can decide whether to request a review of marking and to support teaching and learning.



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COMPUTING TEAM



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- sign up to [Teach Cambridge](#)
- contact the subject advisor with any questions or to arrange a follow up call/Teams meeting on by calling our support centre on 01223 553998 or emailing support@ocr.org.uk



Any Further Questions

