

GCSE ICT
Unit 4: Creating Digital Products

Assessment Guidance

March 2012

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Introduction

The aim of this guide is to exemplify the standard of evidence required for GCSE ICT, Unit 4: Creating Digital Products.

It should be used in conjunction with the exemplar student work and commentaries available in the [documents section](#) of the GCSE ICT website.

The GCSE ICT Controlled Assessment [Teacher Support Book](#) and [podcast](#) provide further information on controlled assessment.

Overview of controlled assessment in Unit 4

The Unit 4 CAB consists of **four** related activities, each of which has a different focus.

Activity 1	20 marks	Students carry out an investigation of digital products and write a product review of one product (1a). They create a detailed proposal for the product they have chosen to create (1b). They review their work carefully and make changes as necessary.
Activity 2	38 marks	Activity 2 requires students to create detailed product designs and develop content for their product (2a and 2b). They should ensure that the product's usability, functionality and accessibility is thoroughly tested and refined as appropriate (2c and 2d). They review their work carefully and make changes as necessary.
Activity 3	10 marks	Students create a digital showcase (3a). They review their work carefully and make changes as necessary.
Activity 4	12 marks	Students carry out an evaluation of the outcomes of individual activities and the task as a whole, including consideration of their own performance.

Unit 4 contributes 30% of the total marks for the Double Award.

Edexcel sets the controlled assessment task for Unit 4. All work, with the exception of research and preparation, must be done in the classroom under informal supervision.

There is a limit of 40 hours of supervised time allowed for completion of the controlled assessment task.

Students' controlled assessment work is internally assessed and externally moderated.

The Controlled Assessment Brief (CAB)

The CAB is an interactive document designed to be read on-screen. It provides a context for the controlled assessment task. The context is sufficiently open-ended to allow students to carry out research and develop outcomes that interest them.

Each CAB consists of four activities and includes supporting files and reminders to help students maximise their achievement.

Detailed support notes accompany each CAB, providing additional information for teachers about what students are expected to do and produce. Teachers should read these notes carefully before their students start work on the CAB.

CABs are valid for two years starting in June of the year following their publication.

The Controlled Environment

A maximum of 40 hours must be allocated for work on the CAB under controlled conditions. All work, with the exception of research, asset gathering and preparation, must be done in the classroom under informal supervision with the 40 hours.

	Must be completed under controlled conditions	Can be completed outside the controlled environment
Investigation / Research		✓
Product review	✓	
Proposal	✓	
Gather assets for use in digital products e.g. photographs, sounds, video footage		✓
Initial Designs		✓
Design documentation	✓	
End of activity reviews	✓	
Digital Product	✓	
Showcase	✓	
Evaluation	✓	

Guide to marking controlled assessment

Students' controlled assessment work is internally assessed and externally moderated using the assessment criteria published in the specification. The same generic criteria are used for all CABs.

Each assessment criterion applies to a number of key items of evidence.

Independent working

Students are expected to work independently on the controlled assessment task. They may be given feedback, but must make their own decisions on how to respond.

Teaching in support of a particular CAB activity must be completed before students start work on that activity. For example, teaching of different types of testing should be completed before students start work on Activity 2.

Teaching should not be limited to the digital products identified in a particular CAB. Students will benefit from producing different types of digital products, especially if they have the opportunity to review examples of good practice.

In addition to technical skills, students need to be able to reflect on the fitness for audience and purpose of the products that they develop.

In some instances students may need guidance from the teacher in order to move on. This needs to be taken into account when deciding on a mark for each strand and recorded on the Candidate Assessment Record (CAR).

Feedback

Every student should have at least one test buddy and act as a test buddy themselves. Students need to understand the role of the test buddy - to provide feedback on products as they are developed. They need to know how to give and act upon feedback. They must reflect on feedback received and given in the end of activity reviews and in the Activity 4 evaluation.

In addition, students may wish to ask other people – in particular representatives of the target audience for feedback on the products they are developing. To facilitate this, they are allowed to take copies of products they are working on out of the controlled environment.

However, work on products that will be submitted for assessment / moderation must only be carried out in the classroom under controlled conditions. It is up to the teacher to monitor any digital materials that students bring into the controlled environment.

Marking

Teachers must use the assessment criteria provided in the specification for GCSE ICT to mark their students' controlled assessment work.

For all strands, a 'best fit' strategy should be used to select the mark band that best describes a student's performance in that strand. There are three mark bands for each criterion.

Adjacent descriptions should be used when making judgements and use made of intermediate marks when performance exceeds the lower mark description and only partially satisfies the higher mark description. The mark bands include a number of aspects of performance and there will be times when a student has not fulfilled all aspects of the lower mark description but has exceeded it for most aspects of the description. In these cases professional judgement is needed. If a mark in the higher mark band is awarded this must be clearly justified in the CAR.

There is no need to wait until students have completed the whole controlled assessment task before starting to assess what they have produced. The outcomes of an activity can be informally assessed once it is completed. However – time permitting - students must be allowed to revisit work they have already submitted in order to try to improve it. They will also need access to the work they produced in Activities 1, 2 and 3 in order to complete the Activity 4 Evaluation.

Once the 40 hours of controlled assessment time is over and work has been formally submitted and marked it must not be returned to students and should be retained until the results have been issued.

Annotation

Assessment decisions, along with a clear rationale for the marks awarded, must be recorded on the CAR.

Given that the outcomes students produce are digital, it is not feasible for teachers to annotate work in the traditional way. Instead, they should write any comments they wish to make on the CAR.

The CAR should also be used to direct the moderator to the location of any evidence that might otherwise be overlooked. This is particularly important since in most cases more than one item of evidence will need to be considered when judging performance against an assessment criterion, or to justify the award of marks that is not straightforward. Moderators will be trying to agree with the centre marks and need to understand the rationale behind the award of the marks given. This should be a more straightforward process if the annotations on the CAR are helpful. Centres will receive a feedback report on their marking for each session that work is submitted. The feedback is likely to be more helpful if the centre rationale is clear to the moderator.

Internal standardisation

If more than one teacher in a centre is assessing students' controlled assessment work their marking be standardised to ensure that all students at the centre have been marked to the same standard. This should include a common agreed approach to the treatment of students receiving additional support, the decision on the mark band to use when evidence is not straightforward and the completion of the CAR.

One person within the centre should be responsible for internal standardisation.

External moderation

Students are expected to produce digital evidence of achievement. Details of what to submit and how this should be presented are provided in each CAB. The Moderator's Toolkit provides further information on accepted file formats.

Centres should ensure that students are aware of accepted formats for submitting work for moderation.

Selection of product type

Although there are four different types of products that students can produce, some centres may wish to restrict their students' choice of products, but ideally students should still have a choice of at least two.

This will allow them to focus in on the specialist skills of their staff and the strengths of their students.

Students must also decide the target audience and purpose of the product. Whichever product is chosen, students must ensure that there is user input via a suitable user interface and an element of user control.

We would expect students to create products that include, for example:

Game: scoring system (i.e. rules to progress/win), single player at a time (or alternate plays for multiplayer), sprite interaction (with other sprites and/or environment), some original assets.

Interactive multimedia product: - have a clear pathway(s) through the product, include accessibility features, different types of interaction, animation, range of different assets (animations, sounds, images etc), user-input (form, request for information, search feature, interactive quiz or questionnaire)

Database with customised user interface: minimum of 2 related tables, minimum of 1 input form, searches of related tables (using multiple search criteria where relevant), use of a switchboard or menu system, outputs (e.g auto-report functionality, mail merge), should contain enough data to demonstrate full functionality (approx 25 records, but could be fewer), functioning user interface (front end).

Web-based interactive product: - interactivity, working navigations (5 screens is sufficient), accessibility features, different types of links (hotspots, hyperlinks etc), animation, range of different assets (animations, sounds, images etc), user-input (form, request for info, search feature, interactive quiz or questionnaire), viewable in a web browser.

Activity 1

Activity 1 focuses on:

- Topic 1: Investigate and review digital products
- Topic 2: Proposal
- Topic 8: Working efficiently and safely.

Assessment criterion 1a – Investigation

The focus of activity in this strand is information gathering.

Investigation

The investigation must be of the same type of product as students have decided to produce. Students can carry out their investigation outside of the controlled assessment time and make notes to support their product review. This may be a necessity if the product chosen cannot be viewed on the centre's network.

Students should investigate a small range of products of the type they have selected in order to help them select the product they will review.

Product Review

Teachers should ensure that students have chosen an appropriate product for review. It must be of a complete product that is designed for other people to use. It could be a professionally produced and packaged product, but could equally be something an amateur has done.

Within the product review students must consider the strengths and weaknesses, functionality, usability and accessibility of the product they have chosen as well as giving a general overview. Students also have to decide how they would rate the product with regards to its functionality, accessibility and usability as well as formulating an overall rating for the product. Students must also make some suggestions as to how they think the product could be improved. Students can ask their test buddy for feedback on their review.

Assessing students' work

Where to look for the evidence

- Product Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects a student's achievement in this strand.

When marking students' work teachers should focus on the quality/relevance of the information they have selected, rather than the quantity.

0	No rewardable content.
1-4 marks	The student has made some relevant comments about the strengths and weaknesses of the product, using extracts from the product to support the comments.
5-7 marks	The student has made relevant comments with some evaluation of the product's strengths and weaknesses, including functionality and the user interface, using extracts from the product to support the comments.
8-10 marks	The student has produced a realistic evaluation of the strengths and weaknesses of the product, including functionality, usability and accessibility, illustrated by well-chosen extracts from the product.

Assessment criterion 1b – Proposal

The proposal should be used to explain the product that will be built. It should address all of the following aspects to access the top mark band:

- characteristics (capability, interests, age, skills, frequency of use) of target audience
- purpose of product
- overview and key features of the product, including input, processing and output, interactivity and accessibility
- plans for testing and feedback
- resources required
- how the product will be demonstrated
- success criteria
- the product should be appropriate for its intended purpose and target audience and given the amount of time available / skills of students

In the unlikely event that a student's proposal is for a different type of product to that they review, this should be explained in the CAR.

Quality of written communication is not assessed in this criterion; it is perfectly acceptable for students to use notes or bullet points, as long as these are clear.

Assessing students' work

Where to look for the evidence

- Proposal

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the proposal is fit for purpose.

0	No rewardable content.
1-4 marks	The student has produced an outline proposal for an appropriate product, some of which is relevant.
5-7 marks	The student has produced an informed proposal for an appropriate product.
8-10 marks	The student has produced a comprehensive and convincing proposal for an appropriate product.

Activity 2

Activity 2 focuses on:

- Topic 3: Design
- Topic 4: Development
- Topic 5: Testing and Refinement
- Topic 8: Working efficiently and safely.

Development log

Activity 2 is the largest activity, taking the longest amount of time to complete and contributing the largest number of marks. Students should use the development log to document their progress throughout the design and development stages of their project. The development log should also help students manage their time, record feedback and outline any changes they have made to their product design as a result of feedback. As students are only required to submit their final version of their product and their product designs, the development log is key to showing how the product and its designs have evolved and for also outlining the important design decisions that have been made. This is a document that students should use throughout the Activity rather than completing it retrospectively.

Assessment criterion 2a – Design

This criterion assesses a student's ability to produce design documentation for digital products. The types of design documentation produced will depend on type of product. Feedback from others should be sought and used to refine and improve the product designs. Students must be clear that producing designs retrospectively fulfils no useful purpose and will gain no marks.

Designs should be sufficiently detailed to clarify ideas, allow constructive feedback and facilitate implementation.

Students should have recorded any feedback they have received on their designs and have indicated what action they took as a result. This may be evidenced within the design documentation, the Development log or within the Activity 2 review.

The final products are not expected to match their initial designs exactly. In all likelihood, students will have made some changes as a result of feedback and testing.

Assessing students' work

Where to look for the evidence

- Development log
- Design documentation
- Activity 2 Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the data collection and modelling has contributed accurate information upon which to base recommendations.

0	No rewardable content.
1-4 marks	The student has recorded some stages of the design process, including an indication of how the product will function, what the user interface will look like, and main content required. They have made some comments on design decisions.
5-7 marks	The student has recorded most of the design process, giving details of how the product will function, what the user interface will look like and content required. They have commented on important design decisions.
8-10 marks	The student has recorded the complete design process, clearly showing how the product will function, what the user interface will look like, and content required. They have justified important design decisions.

Assessment criterion 2b – Gathering and preparing content

Gathering content / assets

Students should have identified what digital content is required in their initial designs. They may gather content outside the controlled environment without any direct supervision. However, preparation of assets and work on the products themselves must take place under supervision.

For a database product a variety of appropriate content would include different data types (text, Boolean, number, memo etc.) They may have also used images or logos for the user interface. They may have prepared the content by normalisation, or optimised images.

If external links are used in a product, students should detail this in their assets table.

Assessing students' work

Where to look for the evidence

- Assets table
- Activity 2 Product
- Activity 2 Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the set of products is fit for purpose.

0	No rewardable content.
1-2 marks	The student has gathered content, some of which is appropriate, for use in the product.
3-4 marks	The student has gathered and prepared appropriate content for use in the product.
5-6 marks	The student has gathered and prepared a variety of appropriate content for use in the product.

Assessment criterion 2c – Functionality

User instructions should be in the form of onscreen help. There is no need to create a user manual. The product is the focus of this activity and its assessment. It is important that the product works. Effective testing can be inferred from the functionality and quality of the product. The development log and other documentation can be used to fill gaps in evidence that cannot be inferred from the product. They will also support the evaluation in Activity 4.

Assessing students' work

Where to look for the evidence

- Development log
- Test log
- Activity 2 Product
- Activity 2 Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the set of products is fit for purpose.

0	No rewardable content.
1-4 marks	Some aspects of the product work as intended and the functionality demonstrates limited awareness of purpose. User instructions are basic. The student has carried out limited functionality testing, but with little effect.
5-8 marks	Most aspects of the product work as intended and the functionality demonstrates some awareness of purpose. User instructions cover key aspects. Functionality testing has been carried out, but not all of it was effective.
9-12 marks	The product works as intended and the functionality demonstrates good awareness of purpose. User instructions are clear and complete. Effective functionality testing has been carried out.

Assessment criterion 2d – User interface

Effective testing can be inferred from the usability, accessibility and quality of the user interface. The development log, and other documentation should be used to fill gaps in evidence that cannot be inferred from the product.

Assessing students' work

Where to look for the evidence

- Assets table
- Development log
- Test log
- Activity 2 Products
- Activity 2 Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the set of products is fit for purpose.

0	No rewardable content.
1-4 marks	The user interface demonstrates limited awareness of users' capability and needs. The student has carried out limited usability testing, but with little effect.
5-7 marks	The user interface demonstrates some awareness of users' capabilities and needs. Usability and accessibility testing has been carried out, but not all of it was effective.
8-10 marks	The user interface demonstrates good awareness of users' capabilities and needs. Effective usability and accessibility testing has been carried out.

Activity 3

Activity 3 focuses on:

- Topic 6: Showcase
- Topic 7: Evaluating outcomes
- Topic 8: Working efficiently and safely.

Assessment criterion 3a – Showcase

The showcase should promote the product features/content to a specified target audience. The target audience may not be the same as for the product itself (e.g. parents if the product is aimed at young children). The showcase should contain repurposed content from the product.

Assessing students' work

Where to look for the evidence

- Showcase
- Activity 3 Review

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the extent to which the designs show what the final product will look like and how it will work.

0	No rewardable content.
1-4 marks	The student has presented their product using some appropriate content.
5-7 marks	The student has showcased their product using appropriate content and features.
8-10 marks	The student has showcased their product using effective content and features to promote the product to the target audience.

Activity 4

Activity 4 focuses on:

- Topic 7: Evaluating outcomes.
- Topic 8: Working efficiently and safely.

Assessment criterion 4 – Evaluation

This criterion assesses the student's ability to evaluate what they produce and to reflect critically on the strengths and weaknesses of their own performance.

Feedback from others should be used to inform the review process.

Suggestions for improvement should be valid and specific.

Stronger students will have evaluated the quality of the feedback they gave and received.

Quality of Written Communication (QWC)

QWC is assessed in Activity 4, Evaluation.

Marking should initially consider the **content** of the Evaluation, ignoring the statements referring the QWC.

Having identified a mark band and then a mark for the content, the assessor should then assess the QWC.

If the QWC statement that is the best fit equals or exceeds the content mark, the content mark will apply. The content mark **cannot be increased** as a result of assessment of QWC.

If the QWC statement that applies is in a lower mark band, the mark should be reduced **within** the content mark band.

Assessing students' work

Where to look for the evidence

- Evaluation

Teachers should note on the CAR the location of any other source of evidence for this strand, e.g. activity reviews, that they have taken into consideration.

Finding the 'best fit'

A 'best fit' strategy should be used to decide on the mark that best reflects the quality of the evaluation.

0	No rewardable content.
1-4 marks	<p>The student has made undeveloped comments about the outcomes of individual activities or the project as a whole.</p> <p>The student has used everyday language but their response lacks clarity and organisation. Spelling, punctuation and the rules of grammar are used with limited accuracy.</p>
5-8 marks	<p>The student has made comments, some of which are developed about the outcomes of individual activities and the project as a whole. Some suggested improvements are made.</p> <p>The student has used some specialist terms and their response shows some focus and organisation. Spelling, punctuation and the rules of grammar are used with some accuracy.</p>
9-12 marks	<p>The student has made effective evaluative comments about the outcomes of activities and the project as a whole, including feedback given and received, and their own performance. Effective improvements are suggested.</p> <p>The student has used appropriate specialist terms consistently and the response shows good focus and organisation. Spelling, punctuation and the rules of grammar are used with considerable accuracy.</p>

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