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OCR
Oxford Cambridge and RSA

Moderators' report

A LEVEL

DESIGN AND TECHNOLOGY: PRODUCT DESIGN

OCR Level 3 Advanced GCE in Design and Technology: Product Design

H406

For first teaching in 2017

H406/03/04 Summer 2025 series

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Introduction

Our Moderators' reports are produced to offer constructive feedback on centres' assessment of moderated work, based on what has been observed by the moderation team. These reports include a general commentary of accuracy of internal assessment judgements, identify good practice in relation to evidence collation and presentation, and comment on the quality of centre assessment decisions against individual Learning Objectives. The report also highlights areas where requirements have been misinterpreted and provides guidance to centre assessors on requirements for accessing higher mark bands. Where appropriate, the report will also signpost other sources of information that centre assessors will find helpful.

OCR completes moderation of centre-assessed work in order to quality assure the internal assessment judgements made by assessors within a centre. Where OCR cannot confirm the centre's marks, we may adjust them in order to align them to the national standard. Any adjustments to centre marks are detailed on the Moderation Adjustments report, which can be downloaded from Interchange when results are issued. Centres should also refer to their individual centre report provided after moderation has been completed. In combination, these centre-specific documents and this overall report should help to support centres' internal assessment and moderation practice for future series.

Online courses

We have created online courses to build your confidence in delivering, marking and administering internal assessment for our qualifications. Courses are available for Cambridge Nationals, GCSE, A Level and Cambridge Technicals (2016).

Cambridge Nationals

All teachers delivering our Cambridge Nationals suite are asked to complete the Essentials for the NEA course, which describes how to guide and support your students. You'll receive a certificate which you should retain.

Following this you can also complete a subject-specific Focus on Internal Assessment course for your individual Cambridge Nationals qualification, covering marking and delivery.

GCSE, A Level and Cambridge Technicals (2016)

We recommend all teachers complete the module on Online courses – NEA for their subject. These courses provide subject-specific information about course content; how to prepare for planning, marking and submitting; and support with understanding the marking criteria.

Accessing our online courses

You can access all our online courses from our teacher support website Teach Cambridge.

These free online courses currently cover the end-to-end NEA process for teachers. You'll find the link to the **Online courses** under the **Assessment** or **Training** tab – hover over **Assessment** or **Training** on the horizontal menu and select **Online courses** from the dropdown.

These self-paced online courses are intended for any teachers. During the course, you will engage with interactive content on subjects such as guidance on unit content, structure and administrative processes.

If you have any queries, please contact our Customer Support Centre on 01223 553998 or email support@ocr.org.uk.

General overview

We were, again, delighted to receive and moderate some outstanding examples of iterative design in the development of a product, within this Product Design endorsed specification.

Candidates who did well generally:	Candidates who did less well generally:
• understood the iterative design journey • had regular contact with their user/stakeholders throughout their iterative design journey • developed their ideas through the use of both physical and digital prototyping methods • tested their final product with their user within the required environment of expected use.	• worked in a linear manner • did not have direct real time contact with users • demonstrated limited ideas and development.

Mandatory requirement – electronic portfolios
It is important that centres are aware now that electronic portfolios are mandatory. A4/A3 style paper portfolios are no longer acceptable. It is common for most centres to either send work via a USB drive or to upload their work, along with the CDF and CRF, directly to the Submit for Assessment platform. Both methods work well, with using Submit for Assessment being a significant step forward in terms of efficiency, and it was evident that centres found this helpful.

When centres use unencrypted USB drives, it can be very useful. Passwords should be short and clear. Centres need to avoid using problematic passwords i.e. avoid using similar letters and numbers such as 1 and l, or o and 0.

Excessive file sizes can be a challenge including complex presentations which take a long time loading. Compressing all electronic work before uploading is a vital step for centres to complete. Also, candidates are not required to include an excess of slides, i.e. over one hundred, in their portfolio.

Interactive dialogue is a vital component within the philosophy of this specification. However, there is **absolutely no requirement** for a presentation to have upwards of 15/20 videos embedded. We would not expect a candidate to have more than ten and there is no requirement to have numerous videos on a single page/slide.

Many centres provided a separate folder containing **'clearly labelled'** videos, enabling most moderators to view all video files. It is **preferable** however that this facility is used as a **backup** as viewing videos in context is a far more valuable exercise. Where videos are unable to be embedded within a portfolio, it would be helpful for them to be directly hyperlinked to the source. Several centres made effective use of externally hosted media within candidate portfolios to demonstrate stakeholder interaction, testing and other primary evidence. This reduced the number of excessive file sizes keeping them manageable and easy to access. However, centres should be mindful that the moderator will need full access permissions for any externally hosted media as "access was denied" on a few occasions.

Centres should be aware that unless work is required for archiving or awarding purposes then it is our intention to return all work that is sent at the end of the moderation series.

Please do not, under any circumstances upload individual videos to the Submit for Assessment platform.

NEA Forms and Administration

Centres should be aware that there are only two forms that are required alongside the students work: The Candidate Record Form (CRF) and the Candidate Declaration Form **(CDF).** The CDF must be signed by both student and teacher.

The CRF is an interactive form that correctly totals candidate marks for each strand thus avoiding clerical errors. This form should not be completed by hand in pencil or pen. Colleagues are urged to use this digital form as it saves the moderation team many hours in chasing up on clerical errors that slow the moderation process a great deal.

The CCS160 (Centre Authentication Form) should not be sent in with the sample, it should be signed by all teachers involved and retained within the centre as required by JCQ.

Observations and comments on the Candidate Record Forms (CRF) can be very helpful, particularly in indicating where levels had been met and criteria reached. Page references if something might not be immediately obvious for the moderator to find are also valuable.

Marks must be uploaded by **May 15th** at the latest. Work must be sent/uploaded within three days of receipt of the sample request email. The moderation process can be slowed unnecessarily if work/forms are not received in the week following this date.

The support of colleagues within centres is appreciated in addressing this in 2026 please.

Key Points

The purpose of the moderation process is to make sure that centre assessments are in line with a common national standard. This is achieved by adjusting any centre assessment where the moderation process indicates that this is necessary based on the sample of work viewed. Centres receive a **detailed report** following moderation which identifies specific areas of the assessment criteria which need attention, where applicable.

In internally assessed units where the assessment contains many sections such as these, erring on the side of generosity in the assessment of some areas can have a significant cumulative effect.

Misconception – Iterative Design v Linear approach

As we reported in the 2024 series some centres are still using the mark scheme to create the slide titles and therefore seemingly being hefted to a linear approach akin to the traditional style of research, design specification, design, develop, prototype and evaluate.

The philosophy at the very heart of this specification is that of iterative design. For example, while undertaking design ideas, candidates are encouraged to further explore by discussing concepts with their user/stakeholder or investigating materials/components or mechanisms to further their design and knowledge. Explore, create, and evaluate is cyclical. Evidence is often apparent throughout a candidate's portfolio and Criteria 1.6 for instance, would not be expected to appear until after the final design solution is finalised.

Strand by strand guidance on H404/5/6 03/04 Product Development requirements

This is not an exhaustive list, and these comments relate directly to the A Level Specification which can be found on the OCR website. Chapter 10 NEA Product Development of the OCR A/AS Level Design & Technology textbook is particularly informative and is extremely detailed.

Our live training which is specifically directed at the NEA and has many explicit aspects should also be utilised.

We urge you to use these resources, they have been compiled with numerous examples to aid delivery of the NEA.

This Product Development carries 100 marks.

Strand 1 – Explore

OCR recommends spending about 65 hours on this non-exam assessment. This is not a strict limit, but it's important to note that producing too much work that doesn't stay relevant to the task or isn't clear can be unhelpful and doesn't add to the learning experience or meet the course requirements.

The use of primary users/stakeholders is fundamental within this endorsed title. Candidates should continually revert to and have direct contact with their primary user/stakeholders in their explorations throughout. Use of a peer taking on the persona of a user is helpful if a user is not available. These interactions should be clearly evidenced within a candidate's portfolio. Direct contact should be in the form of real time/first-hand interactions so that the candidates can gain as much insight as is possible.

Exploring a broad range/contrast of possible contexts offers candidates an opportunity to gain valuable insights and further understanding. Involving users/stakeholders in discussions at this stage can also be very useful.

Investigating existing products is more beneficial when students analyse them first-hand. Taking apart a broken or old product can greatly help students understand it better.

The exploration of materials is best employed within the iterative design process and linked/related directly to the ideas/developments that are taking shape. Standalone slides on a list of generic materials that bear little relevance to the product chosen are of limited value.

Misconception – Iterative Design

Centres should not lead candidates through the project with generic slide layouts and a formulaic approach to the design process.

This, approach can stifle candidate's innovation and creativity.

Misconception – Technical Specification

There appeared to be some misunderstanding of the technical specification. In essence this should offer sufficient clarity for manufacture of the intended design solution to a third party, so they are able to make a prototype of it themselves. Despite it being termed section 1.6 it actually sits just before manufacture. Working drawings are fundamental to this, as are details of bought in items and the choice of materials.

Strand 2 – Create: Design Thinking

OCR strongly encourages candidates to create and develop innovative products that show a step-by-step design process and consider the feedback and needs of primary users and other stakeholders. While it might not always be possible to work with external people, it's very important for candidates to work with a teacher or peer who can realistically act as the stakeholder to provide useful feedback and support during the design process.

Many candidates focused on just one idea and didn't explore other possibilities, that might have led to a more creative and educational experience for them. A wide range (we suggest 10) and variety of different ideas being presented offers candidates the opportunity to develop their ideas innovatively and with an open mind, in keeping with the iterative philosophy.

Where centres clearly support the iterative design approach, that allows freedom to be creative and with several progressive developments of either a whole idea or components within, then the outcomes are often exceptional, meeting the expectation for MB5 with ease. Three-dimensional development can be extremely useful.

2.2 Design Developments

Some development of ideas demonstrated using a variety of methods but often in a very linear fashion.

On occasion some centres had limited amounts of development.

Developing more than one idea is a fundamental aspect of the learning experience, please refer to our training materials for further support.

Quality of modelling was generally good, and CAD was used extensively at the top end. Testing models in real time in their environment or a given context is still immensely valuable for the iterative design journey.

The use of technical language and understanding is expected when iteratively designing. Simply exploring the use of shapes without any aspirations to understand how the structure behind a given shape is derived or constructed is a missed opportunity at this level.

Strand 3 – Create: Design Communication

Encouraging different ways of communicating and presenting ideas is important. While many candidates find it helpful to start with a sketch, it's not required. The starting point can be flexible, with techniques like sketch modelling and CAD being commonly used.

It is essential that all evidence is fully considered, it's crucial that centres follow the submission guidelines in the specification. This includes making file sizes as small as possible and testing all videos and audio files to ensure they work on external devices.

The real time capture of findings and decision making is a crucial element of the NEA and impacts on several key aspects of the marking criteria.

Strand 4 – Create: Final Prototype(s)

Misconception – Planning for making

Planning should occur before the making process begins and cover all requirements and safety considerations identified from the technical specification. It should be relevant to making in a school or centre workshop. Timescales for the various processes are a helpful addition.

If the use of hand tools, machinery, digital design, and/or digital manufacture is limited throughout the project, then centres should mark work in MB1 for 'Use of specialist tools and equipment'. If only one method is not evidenced but the rest of the work is strong, marks cannot go above MB2 for this statement. CAD/CAM is a required part of this specification. To achieve MB4 and beyond for Criteria 4.3 and 4.4, candidates must show effective and appropriate use. Many impressive outcomes this year showed high skill and accuracy, with CAD being used effectively across several centres to present final design solutions and technical specifications clearly.

There should be sufficient video and photographic evidence of the final prototype(s) to assess or evaluate its quality, viability, and/or success. Moderators need to see the final prototype clearly. The quality of photographs, especially close-up work, is important. If a candidate produces a scaled model as their final prototype, appropriately scaled testing methods should be used to support higher marks and determine the solution's viability and feasibility.

Moderators should also be able to clearly *see evidence* to suggest how the product could be viable for the intended market.

Strand 5 – Evaluation

Designing iteratively requires that ongoing analysis and evaluation of ideas and solutions. Centres should encourage a mindset of constant improvement, aiming for the best and most advanced solution that fits the market and the available resources.

The views from primary users/stakeholders in real time should be evident and/or evaluations of others' opinions, to guide the next steps in the design process.

Additionally, broader issues like Life Cycle Assessment (LCA) and the overall impact of the product are often overlooked and should be considered.

Risk Assessment

Risk assessments had a very broad range of responses. Please do consider health and safety throughout the project. A risk assessment of the prototype product as it would be expected to be used is a very useful piece of work that can also highlight inadequacies that can be addressed as part of the further improvements that form part of section 5.5. Candidates often overlook this important area within the actual use of their product.

Testing and analysis should be rigorous and objective. Evidence of the planning and implementation of this should be clearly presented. User/stakeholder testing should always be encouraged with feedback in real time wherever possible. Testing should wherever possible be undertaken in the intended environment for use.

Testing against technical and non-technical requirements is also very useful in identifying strengths and weaknesses. Through the latter, candidates are provided with a direction for future modifications.

Further modifications and any opportunities to improve design optimisation are expected within this strand.

On occasion some centres only had candidates testing their own product, which will not allow for the objectivity that is sought.

Final Points

Centre and candidate name and number must be on all work that is presented.

Slides need to be numbered to aid navigation for centre and moderation process.

Staff/peers acting in the role of user/stakeholder persona is a useful tactic, but this must be clearly articulated and referenced within the portfolio. All work undertaken must be by the candidate.

Acknowledging sources, assistance with a bibliography is very helpful. Several candidates also made effective use of referencing external sources by hyperlinking any external images or data tables they had used as reference materials.

The overall ethos for this specification is based on 'real time recording' of events as they actually happen. Interactive dialogue involves:

- discussing the selected product
- comparative products
- iterative development
- ongoing analysis
- evaluation and testing with others
- responding to suggestions made.

Evidence of interaction should be recorded in real time with the active comments of those involved recorded first-hand and not retrospectively.

Re-typing of first-hand comments is totally counterproductive and should be avoided.

Product Design (H406) focuses on consumer products and applications, and their analysis in respect of:

- Materials, components, process and their selection and uses in products and/or systems
- The selection and use of the above in industrial and commercially viable products and practices.

Most common causes of centres not passing

Centres where candidates did not pass often use generic contexts that do not allow candidates to individually explore a given scenario or context.

Common misconceptions

1.3 Design Requirements have superseded the former Design specification – lots of detail within the training on offer.

Avoiding potential malpractice

Individual exploration of a context is crucial, and candidates should not share a pre-determined school afforded context.

Helpful resources

It is strongly advised that you make best use of the subject-specific OCR resources and training events that are available through Teach Cambridge or generic guidance via our website

Additional comments

There is a great deal of helpful training available – our training is updated every year and as such centres should make use of this resource. The live presentations with the opportunity to ask one of our most experienced moderators is particularly helpful.

Supporting you

Teach Cambridge

Make sure you visit our secure website **Teach Cambridge** to find the full range of resources and support for the subjects you teach. This includes secure materials such as set assignments and exemplars, online and on-demand training.

Don't have access? If your school or college teaches any OCR qualifications, please contact your exams officer. You can forward them this link to help get you started.

Reviews of marking

If any of your students' results are not as expected, you may wish to consider one of our post-results services. For full information about the options available visit the OCR website.

Access to Scripts

We've made it easier for Exams Officers to download copies of your candidates' completed papers or 'scripts'. Your centre can use these scripts to decide whether to request a review of marking and to support teaching and learning.

Our free, on-demand service, Access to Scripts is available via our single sign-on service, My Cambridge. Step-by-step instructions are on our website.

Keep up-to-date

We send a monthly bulletin to tell you about important updates. You can also sign up for your subject specific updates. If you haven't already, sign up here.

OCR Professional Development

Attend one of our popular professional development courses to hear directly from a senior assessor or drop in to a Q&A session. Most of our courses are delivered live via an online platform, so you can attend from any location.

Please find details for all our courses for your subject on **Teach Cambridge**. You'll also find links to our online courses on NEA marking and support.

Signed up for ExamBuilder?

ExamBuilder is the exam paper builder platform for a range of our qualifications. Find out more.

Free for all OCR centres with an Interchange account, it allows unlimited users per centre. We require an Interchange username to verify your centre's users for ExamBuilder.

If you do not have an Interchange account, please contact your centre administrator (usually the Exams Officer) to request a username.

Once you have an Interchange username, use the form on this page to sign up for ExamBuilder, or ask an existing user at your centre to create an ExamBuilder account for you.

Active Results

Review students' exam performance with our free online results analysis tool. It is available for all GCSEs, AS and A Levels and Cambridge Nationals (examined units only).

Find out more.

Online courses

Enhance your skills and confidence in internal assessment

What are our online courses?

Our online courses are self-paced eLearning courses designed to help you deliver, mark and administer internal assessment for our qualifications. They are suitable for both new and experienced teachers who want to refresh their knowledge and practice.

Why should you use our online courses?

With these online courses you will:

- learn about the key principles and processes of internal assessment and standardisation
- gain a deeper understanding of the marking criteria and how to apply them consistently and accurately
- see examples of student work with commentary and feedback from OCR moderators
- have the opportunity to practise marking and compare your judgements with those of OCR moderators
- receive instant feedback and guidance on your marking and standardisation skills
- be able to track your progress and achievements through the courses.

How can you access our online courses?

Access courses from Teach Cambridge. Teach Cambridge is our secure teacher website, where you'll find all teacher support for your subject.

If you already have a Teach Cambridge account, you'll find the link to the **Online courses** under the **Assessment** or **Training** tab – hover over **Assessment** or **Training** on the horizontal menu and select **Online courses** from the dropdown.

If you don't have a Teach Cambridge account yet, ask your exams officer to set you up – just send them this link and ask them to add you as a Teacher.

Access the courses **anytime, anywhere and at your own pace**. You can also revisit the courses as many times as you need.

Which courses are available?

We recommend all teachers complete the module on Online courses – NEA for their subject. These courses provide subject-specific information about course content; how to prepare for planning, marking and submitting; and support with understanding the marking criteria.

The subject-specific courses are tailored for each qualification that has non-exam assessment (NEA) units, except for AS Level and Entry Level. They cover the following topics:

- the structure and content of the NEA units
- the assessment objectives and marking criteria for the NEA units
- examples of student work with commentary and feedback for the NEA units
- interactive marking practice and feedback for the NEA units.

We are also developing courses for some of the examined units, which will be available soon.

How can you get support and feedback?

If you have any queries, please contact our Customer Support Centre on 01223 553998 or email support@ocr.org.uk.

We welcome your feedback and suggestions on how to improve the online courses and make them more useful and relevant for you. You can share your views by completing the evaluation form at the end of each course.

Tell us what you think

Your feedback plays an important role in how we develop, market, support and resource qualifications now and into the future. We want you and your students to enjoy and get the best out of our qualifications and resources, but to do that we need your honest opinions to tell us whether we're on the right track or not.

You can email your thoughts to resources.feedback@ocr.org.uk or visit our feedback page to learn more about how you can help us improve our resources.

Designing and testing in collaboration with you and your students

Helping young people develop an ethical view of the world

Equality, diversity, inclusion and belonging (EDIB) are part of everything we do

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Contact the team at:

01223 553998

ocr.org.uk

To stay up to date with all the relevant news about our qualifications, register for email updates at ocr.org.uk/updates

Visit our Online Support Centre at support.ocr.org.uk

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