GCSE

Design and Technology: Product Design

Examiners' Reports

January 2011

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General Certificate of Secondary Education

Design and Technology: Product Design (J305)

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EXAMINERS' REPORTS

Chief Examiner's Report

This is the second assessment of the new GCSE Product Design specification with the numbers of candidates growing steadily session on session.

September 2009 "controlled assessment folios" were replaced by "controlled assessment" (OFQUAL) It is the centres' responsibility for their teaching and assessment in this regard. One important factor which caused concern is the 40% terminal rule for unitised specifications. This requires candidates to submit at least two of the four units for assessment at the end of the course when aggregation is effected by the centre. There is no restricted combination of units under the 40% terminal rules (i.e. any mix of the 4 units is acceptable) so it still offers flexibility to centres. It is the centres' responsibility to ensure that entries are made in full compliance with the terminal rules. The quality of candidates' written communication has also been introduced and is assessed in selected parts of each unit.

Internal assessment was by Moderation Manager accessed through OCR interchange which reduces administration and speeds up contact between centres and moderators. There are a small number of centres who had not registered an appropriate uptodate email address with OCR which resulted in significant delays for those centres. Centres are therefore requested to ensure that the email address for the recipient within the centre is both accurate and kept up to date by informing moderationmanager@ocr.org.uk directly.

For units A551 and A553 a few centres used the OCR repository (accessed via Interchange) whereby the administrative documentation can be sent electronically direct to OCR. Candidates' folios can be uploaded via interchange giving the moderator direct electronic access to the work. Centres should note entry codes for both A551 and A553 have a suffix of /1 for a repository entry and /2 for a postal entry. Postal means either a paper folio or a CD-ROM entry. **A number of centres did not enter candidates using the correct codes which caused problems for moderation.**

There is a 20mb limit restriction on individual file size for the repository but multiple files are permitted per candidate folios. PowerPoint is the most appropriate method for candidates to submit evidence. It is one presentation that follows a certain order within the presentation and has the major benefits of embedding not only images such as scans of hand drawn design sheets but the use of sound and video. A single PowerPoint Presentation might cause problems due to the file size when submitting through the repository. Candidates' evidence can be broken down into smaller sized files for upload to the repository. It is essential that each file is labelled correctly and clearly indicates the order in which each file is to be opened for moderation. Careful planning is essential prior to the submission of the sample.

For repository and postal entries electronic evidence must be submitted using one of the file formats listed on page 58 of the specification.

Centres should note that for controlled assessment units A551 and A553, there is a requirement to send a Controlled Assessment cover sheet with a mark breakdown for each of the candidates selected by Moderation Manager in the sample for moderation together with a copy of the CCS160 (Centre Authentication Sheet) **directly to the appointed moderator with the folio samples.**

In the past there were a number of centres who sent A551 and A553 paperwork and / or samples to the wrong moderator. This was not the case in the January session as Centres are more aware that there is one moderator for A551 and a different one for A553 and they do need separate sets of paperwork.

Centres are reminded that for A551 Candidates **are not required to make** their design outcomes. However, with appropriate teacher guidance and support, the design outcomes may well be realised in Unit 3 Making, Testing and Marketing but do not have to be. There are distinct benefits for candidates undertaking totally different projects for A551 and A553 and the practise of "design" and "make" is actively discouraged in this specification.

The submission of the CSF (Controlled assessment folios Summary Form) is no longer a requirement but centres should note that an interactive copy can be downloaded from the OCR website making the administrative procedures more efficient. However, a copy would be welcomed by the moderators of both controlled assessment units to assist in moderation. Currently the 2nd copy of the MS1 (Mark Sheet 1) is required by Moderator on or before the 10th January and 15th May. Many centres forwarded all the necessary paperwork which assisted moderation greatly. There were also a few centres who forwarded their controlled assessment folios directly to the moderator without waiting to be asked for a sample. This positive action is welcomed by the moderation team where there are low numbers of candidates in a centre.

For postal moderation using the electronic format many centres have submitted the full sample or cohorts folios on one CD-ROM which is both effective for centres and for moderators. Centres are at liberty to adopt this practice, rather than the original instruction of one CD-ROM per candidate. Several centres submitted work on a flash drive which is acceptable practise but centres should note that only paper folios will be returned.

Centres should be aware of the textbook written in support of this specification is now available from Hodder Education ISBN 978 0340 98200 6. Additionally there is a DVD teacher resource ISBN 978-0-340-99123-7 available from Hodder Education. Discounts are available for class sets of the text book. Both resources have proved to be very popular indeed with both students and teachers alike.

One important point for all centres to note. In the past there are a significant number of year nine students entered for the units in this specification. Candidates are assessed against the National standard for KS4. Results evidence suggests year 9 students have insufficient experience to perform well at a GCSE so early in their education which impacts on the statistics and percentage grades. Centres should consider this when making decisions on candidate entries.

It is pleasing to report that entries for the January session in 2011 for the A552 98% of candidates were KS4. This has had a positive reflection on the statistical outcomes for this specification in January.

These reports should be read in conjunction with the individual reports to centres for the two controlled assessment units.

A551 Developing and Applying Design Skills

A total of 37 centres entered candidates for the January 2011 series, many of whom were new to the specification.

In general, administration and receipt of samples was good but some centres still need to understand how to use OCR's Interchange system. There were several problems with centres entering candidates for A551/1 [OCR repository]. Entries were made but the need to break files down to manageable size prior to uploading them was problematic. Equally, some video evidence, which is gaining in popularity in both controlled assessment units, failed to function and so affected the moderation process.

Many centres have embraced the Controlled Assessment Cover Sheet and made really helpful comments to assist the moderation process. It was also most helpful where centres also supplied a copy of the CSF which is available via the OCR website.

The majority of entries were A551/2 [Postal] with approximately 60% using the PowerPoint format which enables more adventurous candidates to use sound and video within their folios. Centres are reminded that they are now able to provide just one CD with the entire selected sample of candidate's folios on the one disc, thereby saving both basic and postal costs. Centres need to note that evidence for A551 and A553 should be presented totally separately as the administration and the moderation is totally separate.

A551 is about designing. Candidates **do not** have to make what they design. Equally, A553 is about making. Candidates are not expected nor rewarded for any design work associated with that unit. At in-service training events (see OCR training Website for next autumns schedule) separating the two units is discouraged as this allows a more varied approach for candidates. Candidates are not burdened by the restrictions, while designing, knowing that they would have to manufacture the ideas. Quite clearly evidence for A551 and A553 demonstrates more candidate success by undertaking separate activities.

In general, candidates undertook designing activities which were manageable and appropriate. Fewer centres allowed candidates to undertake totally impractical problems such as designing a new airport or a hybrid motorcycle. It is vitally important that all candidates identify a clear problem to solve with a specific user or user group and summarise the direction of their design activity at the start of their folio. This enables them a safe journey through the remaining design process. Where candidates do not have this solid foundation to begin with, the work tends to be shallow and lacking in direction.

Work such as planning and "what I will do and where I will look for evidence" should not be submitted in the folios as this cannot gain marks against the assessment criteria.

Research was generally well done with some centres realising there are two stands to the research: product analysis of similar or associated products and other research such as user requirements, ergonomic considerations, location and increasingly inspirational investigations.

Evidence once again proved primary research to much more beneficial than secondary which in turn reflected on the quality of specifications presented for assessment. The use of acronyms for product analysis and specification writing again proved to be very restrictive for candidates and this practise is positively discouraged for all ability levels.

Candidates need to have command of specification generation as it appears in A551, A552, A554 and is also used in A553. Without this command there are many aspects of the assessment criteria which cannot be accessed.

There was some excellent design activity with some very creative thinking evidenced. Centres need to be aware that there is not an expectation for creative thinking and risk taking marks in the third box of stand one in IAO3 to be awarded and these can be easily achieved. This is provided that sufficient details and development of appropriate quality are presented related to what can be expected from a candidate undertaken within the prescribed 20 hours controlled assessment.

Development was limited in some candidates' work. Candidates need to understand that development means improving and moving forwards, rather than just redrawing what has already been generated. Modelling can be used to test the feasibility of aspects of the design work which can contribute to the development of designs. Centres should also note that a model of the final proposal is not required with modelling seen as a design tool rather than a presentation tool.

An area some centres need to develop is that of candidates using their specifications and relating their design thinking back in a detailed manner to attract marks in strand 3 of IOA3. Tick boxes and smiley faces will gain limited marks as will giving ideas marks out of 10 for each idea. What is required is an analytical evaluation of design ideas (during or summatively) with some factual details. Comments such as "it meets specification point 1" will gain no marks. Good use of the specification does depend on a good specification to start with and the justified specifications prove to be the most effective.

Communication skills varied from outstanding to work which begged the question of what preparation candidates had undertaken prior to the commencement of controlled assessment. Graphical communication skills are vital for this unit. A553 requires candidates to suggest modifications to their made product and this should also be undertaken by the use of sketches and notes.

The use of CAD or Other Computer Applications (OCA) is rewarded for work in IAO3 only. There was some evidence of centres rewarding ICT from IAO1 and IAO2 when there was none present in IAO3. This disparity in marking needs to be avoided as even this difference could result in a centre being out of tolerance and requiring mark adjustments to bring it into line with the nationally agreed standard.

CAD is also seen as design tool and limited marks will be awarded to candidates who simply produce an image of their final design.

A552 Design and Making Innovation Challenge

General Comments
The 2011 theme 'Theme Parks' was accessible to all candidates and work has been assessed from each of the four set challenges.
Candidates clearly enjoyed the work they have carried out during the 'challenge' with many reflecting positively on their experience.

Administration
Examiners reported few problems due to centre administration errors in this session. It is however important that teachers make examination officers aware that the examination takes place in three separate stages and that workbooks should not be sent to examiners until all of the three stages are complete. To avoid delays and unnecessary 'missing script' investigation work for both OCR and the Examination Centre it is important that examination workbooks are posted to examiners as soon as the 'Time to Reflect' activity has been completed.
Examination scripts must be posted to examiners using approved secure postage. A number of centres have posted scripts this session using 'ordinary' first class post.

Centres are reminded of the requirement to submit details of the dates of the Innovation Challenge to OCR using the VAF form. A number of centres failed to submit this form before the given deadline this session.   Copies of the form are available on the OCR website – www.ocr.org.uk.

The Innovation Challenge is designed to take place within a time window of the 10th January to the 25th January. Centres are not allowed to run the Challenge outside of this window.

All materials relating to examinations sent from OCR to centres will be despatched to the examinations officer. It is important that centres check with the examinations officer that they have received all relevant and most up to date information prior to starting the Innovation Challenge activity. It is very important that centres use only the workbook and teacher script provided for Unit A552.

Examination notices must be displayed in the area where the examination is to take place and an invigilator should be present. Candidates should work in silence unless otherwise instructed by the teacher script.

Running the Challenge
Centres are reminded that the role of the teacher is that of a facilitator and not that of a normal classroom teacher. They are there to provide access to materials, monitor health and safety issues and read the teacher script to candidates, elaborating and explaining where this is indicated within the script.
Teachers and support staff must not give advice to candidates about the design/manufacture of their prototype product or cut materials to correct shape or size. It must be made clear to all candidates that this is an examination involving the assessment of the individual candidate's designing and modelling capability.

Photographs
The quality and size of photographs supplied by most centres was appropriate for this examination. However, examiners have again reported concerns about the quality of photographs from some centres. Problems include: photos being printed at low resolution, photos being printed on printers that are low on ink, photos that do not clearly focus on the model and poor quality black and white images.
Photographs form an essential part of the assessment process. Photographs must be good quality colour images that are of an appropriate size to fit into the space provided.

By providing poor quality images centres disadvantage their candidates as the examiner can only base their judgements about the quality of the prototype on the photographs provided. Centres should refrain from inserting large images that are folded to fit the available space in the workbook. This can make the assessment task more difficult for examiners.

The addition of a card with the candidates name within the photo aids the return of photos to candidates. Centres are reminded that four "teacher" photographs is the minimum required. Additional photos can be added to the workbook. This is particularly important if it is necessary to show other parts or views of a product to fully illustrate the final outcome.

It is recommended that if candidates wish to annotate photographs that a second print is produced and stuck into either the appropriate section of the workbook or into the 'additional space' and clearly labelled and then annotated. Where overlay paper is used on the four 'scripted' photographs examiners have reported difficulty in viewing the photos due to the application of excessive glue.
Candidates should be encouraged to stick photos into the workbook as they are printed.

Completion of the workbook
Examiners have again reported difficulty in understanding candidates' work where blunt pencil, highlight pens or gel pens have been used for written work. Please advise candidates of the need for all of their work to be legible. Work should be completed in English. 'Text messaging' abbreviations are not acceptable.

Security of Workbooks
Centres are reminded of the importance of appropriate security of all workbooks between the three sessions of the Innovation Challenge. Workbooks must be returned to the examinations officer and should be stored in secure conditions.

Development of design. Evolution through making.

Initial Thoughts
Candidates used a mix of text and drawings to explore the selected challenge. The majority of candidates produce a range of initial concept ideas and think creatively about the challenge that they have selected.
Candidates should be encouraged to take risks and think creatively about the design task.

Briefs
Design Briefs identified by candidates are often poorly written. Design Briefs are often too prescriptive with many candidates confusing the design brief with the specification. Candidates should be encouraged to write clear and precise design briefs that offer scope for creativity.

User/Clients
The majority of candidates identified appropriate user groups for their products. Higher performing candidates gave clear consideration of their user group whilst undertaking the design activity making clear reference to the target user and user needs.

Specifications
Specifications from many candidates were clear and precise allowing candidates to achieve full marks. However, examiners have raised concerns that some candidates produced vague, often generic specification points that could apply to any product. The specification must be 'specific' to the product that is being designed. Vague points such as 'it must be the right size', 'it must be ergonomic' and it 'must not cost too much' should be avoided. Presenting the specification in a bullet pointed format rather than in an essay style would benefit candidates.

<u>Ideas</u>
The majority of candidates used a mix of drawings, text, annotation and occasionally modelling/photographs to show their ideas.

Higher performing candidates produced a range of creative ideas that clearly related to their design brief, specification and potential users. Drawings of both full designs and parts of designs were provided along with detailed annotation relating to materials and construction methods. Development of the design from the 'initial thoughts' was clearly evident. Designs were 'rendered' to enhance communication. Lower scoring candidates reproduced the initial thoughts from box 1 of the challenge activity or only produced a single design idea. Very often these candidates disregarded both the design brief and specification from boxes 3 and 4.

Some candidates produced ideas based upon production using modelling materials. The design ideas should be based around the future manufacture of the product. Examiners reported a lack of material knowledge amongst candidates. The majority of candidates failed to identify specific materials for product manufacture.

Communicating information through sketches, writing and photographs
The standard of design communication was generally good and seems to have improved when compared with previous examination sessions. Candidates presented their ideas using a range of annotated drawings and text. Higher performing candidates gave different views of objects or parts of objects and clearly communicated their design thinking through the use of annotation. Examiners felt that the work of many candidates could have been enhanced with the use of rendering techniques and that centres should encourage candidates to be more adventurous in their forms of communication.

Written communication was generally good but many candidates failed to use technical vocabulary when required.

Materials, Components, Processes, Techniques and Industrial Practice
Examiners have reported that the majority of centres had prepared their candidates well for this part of the examination. Candidates from these centres clearly understood that they were making a prototype model rather than the 'final' product. Appropriate materials were supplied by these centres for candidates use. These materials included foam, foam board, card, balsa, clay, modelling clay, mechanism kits, polymorph, etc.

It is essential that during the product design course candidates undertake modelling activity in order to develop their manufacturing skills and knowledge of modelling materials.

Some candidates whose design work was of a good standard were limited by the materials supplied by their centres. Sheet materials such as MDF and Plywood are often unsuitable for modelling. These materials can limit the candidate's ability to model designs appropriately and/or impact upon the candidates design work. Where these materials were used, the candidates' work was often incomplete because candidates were trying to manufacture 'final outcomes' rather than 'prototype products'. Some candidates highlight the availability of materials as a problem within the evaluation activity.

Models must be an appropriate size for the candidate to be able to successfully manipulate materials and demonstrate the features of the product.

Higher achieving candidates considered the choice of materials and components available and identified the most appropriate materials for the manufacture of their product demonstrating adept use of these materials. They completed their models to a high standard, showing all features of their design.

Analysis of ideas, models and prototypes

Peer Evaluation
The majority of candidates planned for the presentation and recorded the outcome. Clear evidence was seen of candidates using the feedback to further develop ideas. Occasionally, candidates failed to record the feedback or planning for this activity.

Development of ideas
Design development was generally good. Higher achieving candidates showed clear development of their ideas between box 1 'initial thoughts' and box 5 'initial ideas'. They also showed development between box 5 'initial ideas' and box 9 'developing your idea'.
It is important that candidates use notes or annotations to show how they are developing their design towards an optimum solution that satisfies the design brief, specification and needs of the user.

Producing a model of the initial idea or redrawing the initial idea does not show development of the design and therefore will gain no marks for design development.

Evaluation
Many candidates produced detailed evaluations of their prototype product. Higher performing candidates clearly considered each element of the evaluation section of the workbook and also provided detailed analysis of their design in relation to the design specification.

Reflection
To score highly candidates should focus on the product design rather than the modelling activity. It is essential that candidates use the 30 minutes available to read through their workbook and reflect upon the product design. They should identify strengths and weaknesses in the design and suggest detailed alterations/improvements. Where design alterations are proposed these should be drawn and clearly communicated. Cursory written comments will not attract high marks.

A553 Making, Testing & Marketing Products

There was a small entry of 6 centres for this unit. There are some important differences between the criteria used for legacy and the new specification. Marks have been increased for the production log and marketing presentation.

These remain key areas on which centres must focus to enable candidates to achieve the higher grades.

Electronic folios (using PowerPoint)

Package to CD. It is essential that video and sound is packaged properly in the presentation, so all evidence of work is presented when it comes to moderation. A step by step of how to do this can be found in the textbook supporting OCR Product Design (ISBN 978 0340 98200 6). Too often, moderators received folios which had video, but were unable to view them because the files had not been packaged correctly within the presentation. If moderators are unable to view the evidence they are unable to substantiate the marks awarded by the centres.

Internal moderation is an important part of the assessment process. It is vital that the rank order of the centre is correct. Centres must ensure they give appropriate time to this task and avoid any adjustments to the centre marks.

Teachers are required to authenticate that the work is that of the candidate. Where evidence is e-folio based this is particularly important as the risks of plagiarism are higher than for paper folios. Form CCS160 must be provided with the sample selected for moderation having been signed by **all** staff teaching the Product Design specification.

Candidates can present the work using any appropriate medium, either paper format or in electronic format on CD-ROM, but not a combination of the two. CD-ROM seems to be the favoured format for this unit and the use of photographs, sound and video is becoming common place with 66% of folios submitted on CD-ROM in this examination session.

The OCR repository is also available but centres should note the comments in the Chief Examiner's opening comments to this report.

For paper folios candidates' work should be bound together or contained in some way to avoid sheets becoming muddled during assessment, posting and moderation.

Centres should ensure that the work for each unit is evidenced in separate folios. A551 and A553 are assessed and moderated separately and centres are encouraged to deliver these two units in different contexts.

The understanding of what this specification accepts with regards to CAD/CAM is becoming more widely understood. CAM is assessed as one single skill and needs to be combined with other skills to provide the range of practical skills required to achieve the higher marks.

Centres should respond promptly to the request for the sample required for moderation and the subsequent forwarding of moderation samples to moderators. An appropriate postal tracking option is best in the case of work going missing. Centres using Moderation Manager for the first time, can expect an email very shortly after the marks have been uploaded by the centre. If the centre has not received the sample request from OCR (Moderation Manager generated) within 5 working days, centres should contact OCR.

Objective 4 This is all about creating a single, functioning, quality product.

Modelling is not acceptable in this unit. A model will achieve no marks against the "quality outcome" mark (Strand 3 IAO4) for Objective 4. Some excellent models were presented but centres must remember that the "quality outcome" marks (0 – 25 out of 55 marks) cannot be gained for models, and so this is a detrimental course of action for candidates.

Even with the small entry this session, a good range of manufactured products was seen. These varied considerably in size and complexity. The majority of centres have encouraged candidates to attempt a realistic product to manufacture within the time (20 hours for A553 in total) permitted. Centres should note the time restrictions for controlled assessment.

The assessment criterion (Strand 1 IAO4) is explicit with reference to the production log.

"Production log will contain images and explanation of the processes undertaken to complete the prototype, plus a range of digital images/photographs showing the quality and functions of the completed product.

These must be available for moderation for any marks to be awarded for this objective."

The recording of the manufacture was generally well done with centres encouraging Candidates to record their progress in real time. It is clear that Candidates are enjoying this type of assessment and the content of the work is to be commended.

Centres should understand this strand of assessment is purely about photographic evidence suitably annotated by the candidates. Candidates must demonstrate ownership of the manufacturing processes and the techniques / skills they have used to create their product. Candidates need to be encouraged to record the processes as a diary as they complete them. The details should include how they undertook the process, include technical terms, Health and Safety considerations, how they achieved precision and were economical in the use of materials.

A written time plan or a limited number of photographs which lack suitable annotation and which do not demonstrate candidates' understanding of the manufacturing activity will gain limited marks.

A step by step plan is not required and is unacceptable for this specification and will gain no marks.

The use of CAD/CAM is to be encouraged. However, centres are reminded that it is seen as one skill. Centres must ensure that candidates demonstrate a range of skills when producing the practical work to achieve the higher marks. If CAD/CAM is used, candidates' should produce evidence that they understand the process and have undertaken the process themselves thus proving that it has "not been done for them". The use of photography and screenshots with annotation should be encouraged.

Marking of the final product was generally accurate. Centres should ensure candidates' folios show a range of images of the final product to fully access the marks in strand 3 IAO4 which justify the marks given to the candidate. Centres must mark the evidence provided in the folio as this is what the moderator will use for their assessment. No matter how good an actual product may be, unless there is evidence in the folio to support the marks awarded, agreement between the centre and moderator will not be reached.

It is useful for moderators if centres provide some idea of scale in at least one photograph by placing a ruler or familiar object alongside the finished product. Alternatively, show the product being used by its user group.

If there is no evidence of a completed product, **the candidate can only achieve a mark in the lowest threshold box**, providing there has been some evidence of making the product within the images of the production log.

Centres must remember this is a Product Design specification and not Food Technology. Candidates should only create one "product" and not a "dish" or "meal". The product should equate to an appropriate amount of work using the prescribed 20 hours for this unit.

Objective 5 This objective has two parts:

1) Testing and evaluating the product that has been manufactured and then suggesting modifications to improve the product together with how it (or part of it) might be made in the real world.

2) Presenting the Product in a "Sales Pitch" to successfully promote the product which the Candidate has made.

This objective should take the product forward, not recapping on anything that has happened in the making of the final product.

No repetition is required in this section, images of the final product or stages of making do not have to be reproduced. Success in this objective relies upon Candidates including clear and justified evidence matching the bullet points outlined in the assessment criteria.

Evaluations were generally well done with specific references being made to the specification. These observations were accompanied by realistic user testing. It is very important that there is evidence of user group testing being undertaken, ideally using images, sound or video.

Modifications were disappointing as candidates only offered written options. This is a product development opportunity and candidates should use sketching to show the possible improvements that could be made to their product. Candidates may wish to alter or draw on original images of the finished product or use overlays as an innovative design tool.

This is an exercise that can be practiced during the suggested regular product analysis activities which should be undertaken throughout the GCSE course. Any product can be improved upon with a little imagination and the skill is "evidencing" the thinking of the candidate.

Modifications that took place in the making process are not awarded marks in this section; these would have been awarded in objective 4.

Quantity production is an area for centres to develop. Responses tended to be very generic based on theory notes or cut and paste information from the internet. Whether this is a time issue or not, appropriate research must be carried out to find out how a similar product would be manufactured in a "real world" situation. It is then a case of **applying** the theory to the whole product or **parts** of the candidate's product.

Centres should note that evidence is required for marks to be awarded in any strand of the assessment criteria. For this stand (strand 3 IAO5) centres need to prepare candidates with the skills of researching and then applying their findings to their own product. Additionally, candidates need to know how to evidence the application of their findings related to their product (or parts of their product) for potential manufacturing in quantity in the "real world".

The final strand in IAO5 (strand 4) is the "Sales Pitch" for the product the candidate has made.

This should show how the candidate has thought of bringing the product to the attention of a prospective customer, manufacturer, supplier, buyer or retailer.

The candidate is required to explain, **why they chose** the type of "sales pitch" which they have produced.

For the marketing presentation section (the sales pitch) centres should encourage an innovative approach by candidates. The marketing presentation is an opportunity for candidates to promote their ideas through an innovative presentation to a prospective manufacturer, supplier, buyer or retailer of the product.

Higher performing candidates produced videos or placed their product in a promotional context. Poorer performing candidates produced low quality posters.

Many very good examples were seen. These included TV commercial type videos, adapted pages from magazines, with the product cut and pasted onto the page, web based selling, billboards and fake celebrity endorsements. **To achieve the higher marks however, the end result should be realistic and professional in appearance accompanied by a good explanation for the idea of the marketing strategy and the reasons for choosing the particular method of promotion.**

It is expected that candidate will attempt one particular method of promotion rather than undertaking 3 or 4 different methods.

A554 Designing Influences

Introduction

Overall, the paper provided a suitable challenge for candidates. The vast majority of candidates found the paper fully accessible and were able to attempt every question. One notable exception to this was the question about life cycle assessment (LCA). Few candidates had sufficient understanding of how LCA is used for analysis of the energy consumption and environmental impact of a product from cradle to grave and therefore were unable to access the full marks.

In nearly all cases, it was clear that candidates had carried out their research into Design Eras, Trend Setters (Designers) and the Iconic Products.. Some of the responses to William Morris showed a real insight into his work. Marcel Breuer and Coco Chanel also proved immensely popular with candidates.

There is still a tendency amongst a significant number of candidates to confuse the trend setter with the iconic product. For example, in question 4(a), which addresses the impact and legacy of the trend setter (such as Marcel Breuer), candidates often wrote about the iconic product rather than the wider work and impact of the designer himself. Being able to separate the designer from the product is a key skill for this part of the examination. Whilst some credit is often given to the candidate who fails to make this distinction in 4 (a) repetition in the question that follows 4[b] is cannot be credited. The particular emphasis within question 4 changes from session to session, therefore it is important that candidates address the foci within the question and not merely regurgitate random facts.

As with previous sessions, the design section (question 5) was well answered. Again, the weakest aspect of the design question was part (a), the four important specification points. Too often, candidates merely repeated points given to them in the design need. For example the design need to design a drinks mat in the style of William Morris often yielded specification points such as: 'it should be in the style of William Morris '.

Equally, it is crucial that specification points go beyond the generic e.g. aesthetically pleasing or aimed at adults, into specific points that can be evaluated. In addition, it is crucial that when designing solutions, candidates pay particular attention to the design need to ensure that the solutions address the original need. For the systems orientated design need a systems diagram is required and for a food orientated question, a food product outcome is required and not a packaging design.

Candidates must prepare for this paper by being encouraged to write legibly and avoid multiple crossings out, to think carefully and consider their answer before writing it in the required space, and to avoid just repeating information from the stem of the question, or a previous question. Candidates must also be well practiced in the skills of product analysis, have a sound knowledge of their chosen trendsetter and iconic product, and the ability to write four viable specification points for a design need.

Individual Questions

Question 1 - The Steering wheel

Where Candidates had been well practiced in the skills of product analysis, the identification of three design features was straightforward, and the majority of answers correctly identified two or three of the design features of a modern steering wheel.

The explanation of the mechanical advantage of a larger diameter steering wheel was generally attempted, but few of the explanations referred to the effort required and the radius of the wheel. The constraints on the overall size of the wheel were also almost always attempted.

(a) Life Cycle Assessment was frequently confused with the product in use, the life expectancy of the product or the turning of the steering wheel, rather than an assessment of the environmental impact of the energy uses during the life stages of the product.

(b) The explanation of the mechanical advantage of a larger diameter steering wheel was generally attempted, but few of the explanations referred to the effort required and the radius of the wheel. The constraints on the overall size of the wheel were also almost always attempted.

(c) Life Cycle Assessment was frequently confused with the product in use, the life expectancy of the product or the turning of the steering wheel, rather than an assessment of the environmental impact of the energy uses during the life **stages** of the product.

Question 2 - The Wall hanging

(a) Most of the candidates were able to give at least one or two reasons why designs from different cultures were popular by focussing solely on the wall hanging rather than the taking the wider view of 'different cultures', such as pizzas, curry and other very familiar products. In the preparation of candidates for this examination, it is wise to draw candidates' attention to the actual requirements (the actual wording) of the question in order to determine whether it has moved from the specific focus to a wider focus. Very often questions begin with the specific (the image on the page) focus and then lead on to either generalise the concept or require the application of knowledge in a wider context. Candidates must be encouraged to read the stem of questions and view the illustration as more of a prompt rather than the specific focus. In the same way the illustration of the car steering wheel was a visual stimulus and the question was about modern car steering wheels, not just the one illustrated.

(b)(i) Globalisation was well understood as something 'all over the world', but there were fewer responses which related globalisation to the manufacture, distribution and selling of products across many borders.
   (ii) However the fact that globalisation could mean both greater choice and cheaper prices for the consumer was generally well understood. A significant number of candidates missed the emphasis upon the consumer in the question and gave advantages to the manufacturer such as lower labour costs.

(c) This part of the question required the naming of a specific example of a product from other times or other cultures and then an explanation of how the product had influenced modern design in this country. The compact, front wheel drive BMC Mini of the 1960's that is seen as the forerunner of almost all modern small cars, was a popular response by candidates. The pizza which would have been experienced by many families on their early holidays to Italy or the USA and has now become a firm favourite as a restaurant meal, takeaway, or a frozen product, was another appropriate response.

This question could well form the theme of a mini project in Product Design lessons: Identifying a number of modern day familiar products and tracing them back to another time or place. The Cornish pasty, the pancake, the Yorkshire pudding, the ballpoint pen, the mobile phone, the dining fork and the microwave oven could all be possible products for investigation and then relate the findings back to modern day living.

Question 3 - The Twin blade razor

(a) This question is always popular and well attempted. Most candidates were able to identify three successful features, with most answers referring to ease of holding, ease of use, swivelling, replaceable heads, and comfortable to use.

(b) Explanations of why the identified features make the modern twin blade razor successful were generally well attempted with most candidates scoring at least 2 or 3 of the marks available. So, for example, 'the ease of holding' is achieved by a more ergonomically shaped, lightweight handle, that allows for different 'holds' for different positions on the face. In addition, the 'small swivelling head' fits easily into different contours of the face and can work carefully around lips and nose, ensuring a smooth shave.

(c) Explanations of why the 1900's razor is considered more sustainable than the modern twin blade, proved to be very discriminating. Many candidates were able to suggest that the use of the big steel blade in the 1900's razor means that it could be sharpened and continue to be used for a lifetime. However there were some well-argued explanations about the modern 'plastic' razor being made from fossil fuels, and that because of the nature of the moulding embedded with the blades, it may be very difficult to recycle the plastic and recover the steel, so the disposal will result in landfill issues.

Question 4 - Trendsetter and Iconic product

(a) Marcel Breuer, Coco Chanel and William Morris had been well researched and were well represented in many of the responses to this question. The LED and Convenience foods were equally well researched but less popular. As a reminder, please be aware that question 4(a) is designed to assess candidates' quality of written communication (QWC). This is now a mandatory requirement within GCSEs and as such, candidates not only need to demonstrate an understanding of the required technical content, but must also write fluently and convincingly. Candidates who, for example, write simple statements or a bulleted list will fail to achieve marks above the lowest mark band [0-2] marks. The QWC requirement is signposted by the inclusion of an asterisk beside the part question (a)*

To access the full marks, candidates must write fluently and make a number of well supported arguments or points with little or no grammatical error.

In 4(a), candidates need to be encouraged to write about three paragraphs for their answer; within each paragraph to identify one specific issue, and using specialist terms, accurate spelling, punctuation and grammar, and as a balanced argument to exemplify the issue explaining the importance of the Trendsetter in the context of modern design.

(b) In preparing for this question, candidates need to be very clear that marks will be awarded in 4(a) for information about the Trendsetter and that marks will be awarded in 4(b) for information about the specific Iconic product. For example: knowledge about the Wassily Chair, the 'flapper' and block printed wallpaper gain credit in 4(b). Knowledge of the important influences (other than the given Iconic product) and the long-term legacy of the Trendsetter need to be explained in 4(a). As mentioned in the introduction, candidates have to be especially careful to avoid repeating the same information in 4(a) and 4(b), and to ensure that they give information in 4a that focuses on the Trendsetter rather than their Iconic product.

Question 5 - Designing

(a)   The formulation of the four specification points continue to be of concern to the examiners. Many candidates score no more than one or two marks. For full credit, candidates must provide four discrete points that have not already been given in the question, so references to the Trendsetter or the Iconic Product gain no credit. Additionally, references to the requirements outlined in the initial design need cannot gain credit. Candidates should use their knowledge of the Trendsetter and the Iconic product, together with their analysis of the requirements of the design need to formulate 'new' specification points.

For example:

- The design must allow easy removal and replacement of the phone
- The design must have tassels for decoration
- The drinks mat must be easy to clean
- The display must have a warning signal when the battery is low

Generic points e.g. strong, bold, comfortable and generic negative points e.g. no sharp edges, not too heavy, no loose bits will not gain credit.

Clearly the purpose of the specification points is to help the candidate focus their thoughts on viable design ideas. Time spent 'thinking before writing' the specification points, will not only improve the mark score in section (a), but also help the candidate improve their performance in all of the other sections of this question.

(b)   To score well for the design ideas part of the question, candidates must provide a range of different ideas, each with explanatory annotations (rather than just notes or labels), and with some indication that some aspects of some of the ideas, address at least two of their specification points. Typically, candidates score 3 or 4 of the available marks for design ideas

(c)   In order to move beyond two marks in the development of ideas part of this question, candidates must provide clear evidence, in the form of sketches and notes, of developmental activity and decision-making rather than just a single drawing.

(d)   The notes and explanations of how the final solution meets each of the specification points are not generally well attempted. For example, candidates will often just say that their idea meets specification point 2. For the award of marks, it is necessary for the candidate to explain how the solution meets each particular specification point.
To achieve maximum marks for the final part of question 5, it is important that candidates provide some details of their final solution, possibly including some reference to specific materials, ingredients or components, sizes, dimensions or quantities, joining or mixing techniques and an indication of possible manufacture.