

Moderators' Report/ Principal Moderator Feedback

June 2011

GCSE Design & Technology
5GR01 Graphic Products
Controlled Assessment

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Introduction

In this first year of significant entry for the coursework section, it is very pleasing to note that the vast majority of centres have achieved at least a C grade or more in this part of the GCSE submission. It is clear that centres have read, listened and acted upon the advice given by Edexcel in the majority of cases. Where centres have failed to achieve their expected goals at this first entry they are urged to consider attending one of the feedback sessions, as there is some evidence of correlation between those centres achieving marks at a level they expected and their attendance at Inset last year.

Administration

Naturally in a year when there are a significant number of new centres to Edexcel, there are likely to be a number of issues with regard the administration of this part of the examination. In all cases, any missing or incorrect admin should in the first instance have been dealt with via the centres examination officer, with follow up feedback given in writing or through the E9 report. It should be noted that the following issues were evident but as always there were a great many more centres who successfully navigated the administration of this exam without incident.

A significant minority of centres did not adhere to the Edexcel selection criteria, when compiling the sample. It is important to note that the submission of the selected candidates, as indicated on the OPTEM's form, should be supplemented with the highest and lowest marked candidates, where they have not already been selected. Centres also need to replace any candidates that have been selected, but are no longer part of the centre entry, with any additional candidate (usually on a similar mark). Where centres had failed to comply with this important starting point they would have to be contacted to complete the correct collating of the sample before any moderation could take place.

Some centres failed to comply with the instructions on the OPTEM's form, sending all copies to the moderator. In these cases the top copy needs to be sent to Edexcel, in order that the centre marks are entered on the system. The green copy is retained by the centre for their record of marks sent and the yellow copy should be sent to the moderator. A number of varying combinations of these colour coded submissions were observed by moderators, but centres should be informed of any errors in writing, usually on the E9.

The centre mark record booklets (CMRB) were completed well on the whole. Centre markers completed the booklets as intended, including the annotation required for the evidencing of making skills undertaken in the manufacturing process. Very few failed to complete this section at all; those that did left their practical marking at risk of misinterpretation or corroboration by the moderator. Annotation in general was often excellent and most moderators found the additional comments to be of use to them during the moderation process. A number of centres failed to sign the CMRB to guarantee the work is that of the candidates. These would have been contacted to verify the work after submitting the CMRB's. Any work that a centre cannot guarantee as the candidates own cannot be accepted for submission as part of this examination, without exceptional circumstances being applied.

The single biggest issue that moderators found a problem with the CMRB was the failure for centres to add the marks correctly. These addition errors often jeopardised not only that candidate's mark but also how the rest of the centre would be treated during the moderation process. It is vital that any addition errors are corrected at source by the centre, so that the marks input by the centre are accurate, as addition errors could invoke adjustment with the final moderator mark and the incorrect mark that is on the system.

Photographic evidence for practical work was clear and well documented for many candidates, there were a number that were taken at too great a distance, or were not clear for technical reasons. This has to be a more important priority for some centres. This is the opportunity for the centres to demonstrate clearly that the marks asked by the centre are evidenced in the photograph. Time needs to be set aside for this important part of the submission, ensuring that the photographs are going to clearly show how the marks asked can be justified against the products made. In the best cases centres provided evidence in the folder of the products being manufactured as an addition to the summative photographs in the CMRB, in these cases it was often easy to see the processes that would not be evidenced in the final product.

With regard the actual design portfolios; centres are advised of the request that they aim to submit between 15 and 20 A3 pages for this part of the examination. Moderators have seen up to 80 pages submitted and 40 were not uncommon. In many cases, if candidates concentrate more time and effort on the presentation of more detailed work on fewer pages then the depth and quality of the work may well improve the performance of candidates in this part of the examination.

Additionally, some centres failed to label folders effectively, with candidate name/number or centre name/number. Admittedly they often physically attached the CMRB to the folders in an attempt to label the folders, however one of the first things a moderator will need to do upon receipt of the folders is to separate the CMRB from the folders, resulting in the need for them to label all the folders for the centre. Some centres also attached the CMRB's to the folders by very robust means; these were in danger of being ripped or torn when being separated from the folders, centres are requested to attach CMRB's loosely to securely bound folders, and to independently label the folders correctly.

The moderators reported that the majority of centres submitted work that was of a single design and make approach, with packaging being very popular as a submission. Point of sales were also popular and most often submitted with a packaged item designed by the candidates, with a minority of candidates submitting POS displays designed for existing products.

Where candidates submitted separate design and make submissions, candidates did well if they manufactured a more complex product like an architectural model and designed a different product. Designing architectural products proved quite demanding for most candidates. Some centres entered projects as part of the manufacturing that was themed class products. Indeed the class were set the same given product to manufacture. In some case there was too much teacher control in the tasks, leaving little for the candidates to interpret. In this situation it is preferable for the candidates to decide on the materials and manufacturing processes themselves, rather than be given the answers to all these issues by the class teacher.

Design Activity

Analysing the brief

Candidates, who had completed a successful thorough analysis, often presented it in the form of paragraphs of writing with specific headings. This produced focussed and relevant questions about the problem being considered. Some centres were found to be quite often generously assessing this section, this tended to be where candidates produced simple mind maps of criteria rather than a detailed analysis of the brief. Mind maps are a good starting point to highlight the issues that may need to be considered, but the problems to be faced, must then be alliterated. Some candidates were also limited by an unclear design brief that did not clearly state the intention of the task. The majority of submissions saw the candidates write their own brief, where centre briefs were provided, the candidates often failed to develop an analysis in enough depth.

Moderators also saw an increase in working alongside a 'real' client, this can be a useful tool to initiate a task, but it should be kept realistic and in keeping with the amount of emphasis the mark scheme demands for this section. Some candidates were designing for major multi-nationals and spent some time trying to persuade the moderator that this was realistic, it is not a requirement for this submission and centres may wish to spend more time concentrating on the issues central to the problem being studied.

Research

The majority of centres generally assessed this section accurately. Centres that were generous tended to need greater focus on performance, materials, components, processes and quality when analysing existing products. There was far too much dependency upon the look of the product or the function, without reference to the key critical ergonomic information. There was evidence of some good product analysis from centres that used the criteria laid out in the mark scheme and encouraged candidates to adhere to this. Weaker performances by centres analysed existing product in a less structured format. Issues of sustainability were addressed by some centres as a page of global issues rather than in relation to the product being analysed. A clear understanding of sustainability issues did not come across from many candidates.

The single most common element that was missing, was the lack of critical data, sizes etc. Many candidates designed products with no indication of key sizes or legal requirements. A perfume box but no bottle size, a package with no information about the necessary minimum legal information to be included on it, the design of the interior of a room without any primary dimensions as a starting point.

Questionnaires, when offered, were fairly superficial lacking useful questions and all too often the data not analysed in any significant way. More successful centres clearly encouraged candidates to link their research to their analysis, specifications and design activities. In these situations the work often flowed more effectively and read more clearly, but specifically helped candidates to produce more realistic and effective design solutions.

Specification

In this section candidates appeared to find it difficult to access the full range of marks on many occasions. In the best performances, the candidates made obvious links to the research previously undertaken. Here the specification was presented as a series of answers to the questions raised in the analysis, all too often though the points presented were not justified and lacked technical, measurable points. Candidates that used headings such as form, function, user requirements or other similar sub-dividers, tended to perform better than those without headings.

Some candidates lacked technical vocabulary when writing their specification, which limited their score in this area. Critical issues, such as product dimensions for packaging, were often not addressed; this also prevented them from devising successful methods of reviewing, testing and evaluating their work later in their projects.

Initial ideas

Initial ideas were on the whole well produced, with a good range of ideas communicated in a range of formats. Indeed design ideas were often well constructed, with the utilisation of good sketching techniques and a variety of CAD software being evidenced. A small number of centres successfully combined a variety of sub-systems to enhance their range of design strategies and presentation techniques; the use of CAD modelling for bottle design, physical card modelling for container design and the manipulation graphically of images to be used as logo or labels. Sadly this was not always the case; often when candidates needed to design several elements to a project they tended to concentrate on one to the detriment of others. The perfume bottle alone was often offered as a body styling exercise, with no consideration given to the package or labelling/logo to be presented on the bottle. In these cases the designing section usually lacked the depth for the higher marks. Candidates similarly struggled with the design of complex architectural projects. When candidates tackled large architectural projects (hotels, sky-scrapers etc...) they struggled to meet the requirements of the assessment criteria. There was a lack of detail, and information concerning materials and processes was repetitive at best.

Many sections lacked the depth, detail/information and range to justify centre assessments. However some centres adopted the strategy of devoting one A3 page to each idea which helped candidates to explore their initial thoughts in more detail, adding detail or alternatives to the sheets about sub-elements relevant to the design work. Attempts were made, to refer to materials and processes but in some cases references were generic: 'plastic', 'wooden' etc. The value of evidencing materials, processes and construction in general, was heavily overlooked by many candidates/centres in this section. Many ideas across the range of samples based their ideas on pure aesthetics and layout and there was limited evidence of technical annotation, generic material terms were plentiful.

Review

The reviews were completed successfully in general; however a significant number of centres did not emphasise this section to their students, resulting in work that could be disappointing with little reference to user group feedback and sustainability. Most centres adopted the specification table review, where candidates ticked yes or no with very little justification or highlighting how they tested their ideas. Formal written feedback was occasionally ignored. In order to access the full mark range in this section there needs to be a presentation of opinions, and review against the design specification. The opportunity to gain and utilise user group feedback wasn't taken advantage of in many cases.

Communication

At the highest level of achievement a wide variety of well communicated skills was demonstrated, with good use of CAD. Centres are increasingly evidencing demanding CAD programmes and some excellent use of Google Sketchup for interior and architectural work.

An area overlooked by some centres in this criteria, was the use of annotation by the teacher to support the marking of the section, we were often left to guess the materials and processes that had been used. Centres also need to be aware that the assessment criteria for this section can use evidence in the development section as well as the design section.

Development

Of all the sections, this overall was the weakest in terms of detail and presentation. At worst, candidates work had a retrospective feel about how the final idea was made, as though decisions had been made already and there was no room for change. The specification tended to be ignored here and many outcomes were seen as the whole product rather than the development of the individual sub-elements. Far too few candidates looked at individual components, processes or sub-systems in deciding what was required to ensure a quality outcome was proposed.

Candidates performed well when they made use of their specification to develop their selected idea so that it addressed most points of the product specification. CAD modelling was sometimes presented as a series of screen shots of the stages involved, but the centre had credited each image as separate and discreet development when indeed it was merely the construction of a single proposal.

Traditional material modelling was often completed and evidenced but was not tested. Too often modelling in either CAD or more physical modelling was used as a presentational tool, rather than as a design strategy. Some candidates seemed to consider minor cosmetic changes as refined development, ignoring more important issues such as the locking/opening mechanism for a box or container.

To be successful in this section, centres need to teach candidates that this section involves change. It is not a section requiring a presentation of how a product is to be constructed; nor is it a section that only requires the presentation of a final solution. Candidates must look at the key sub-systems in the design, developing changes to those systems, how a box closes, how a bottle top can be applied securely, positioning and fixing of signage outside a building, etc. The inclusion of sub-system consideration meant that the candidates had much wider opportunities to demonstrate decisions, technical information and communication skills. The modelling of a handle or perfume bottle body shape, can be quickly and easily shaped in Styrofoam and then reviewed! Bottle or package labels can be professionally reproduced on a variety of CAD packages from Photoshop to Word. The development of these sub-systems will not only lead to more successful outcomes, but will also provide more opportunities for demonstrating a variety of communication skills, but they should be used as exploratory tools, not just as presentational devices.

Final Design

The application of the assessment criteria by centres within the *Final Design* section was sometimes significantly generous for many candidates. Many omitted to identify materials and processes which had been selected. Some candidates used tables to justify their choices. Clear, dimensioned final designs, containing levels of information sufficient to enable third party manufacture, were rarely submitted.

The final design section is an opportunity for the candidate to present the chosen solution and justify its choice, giving clear and detailed information for a third party with some technical knowledge to construct the product proposed. Many candidates failed to meet these requirements, particularly if they used a CAD drawing from their development section, and simply converted it to a working drawing. This often showed their lack of understanding of the needs of a working drawing and its purpose. Candidates would benefit from asking a third-party to look at their final design and decide if they could be made without referral to the designer. Other technical detail was also often missing. Some candidates produced final illustrations but lacked detail of materials, processes, size etc.

Make Activity

Production Plan

Candidates' production plans often took the form of a flow chart showing a sequence of stages of production. The flow charts often had the correct sequences, but quality control (QC) points were often generic phrases, merely suggesting what needed to be tested without suggesting how. The specific QC was rarely named or described, for example 'check fit with pre-drilled hole', but was instead a question 'is column big enough?' Most could organise their practical work into a series of processes but many did not cover all the requirements of the assessment criteria to gain full marks.

Many candidates produced Gantt charts and flow charts which included the same information rather than doing it one way in detail. There were a few examples of retrospective planning.

Quality of Manufacture

In this section the centre needs to demonstrate to the moderator that the candidate has used tools, processes and equipment with precision and accuracy. The moderators found that when centres had provided good quality photographs clearly showing the step-by-step manufacture of the product, assessment of this section was usually straightforward, and centre marks were often easier to agree. However, where this did not occur, it was much more difficult to agree marks as evidence was not always available.

Annotation of the various stages was often generic and did not make sufficient reference to problems or decisions about why a particular process had been used. Difficulty in agreeing the marks was found where candidates have been permitted to undertake simplistic tasks requiring only scissors and a glue gun, yet the centre may have allocated very high marks, with annotation in the CMRB sometimes referring to 'lovely outcomes' or other such comments of an unspecific nature.

Witness statements on the whole were generally accurate and helpful. Although some centres appeared to have allowed the candidates to fill this section in, which is clearly a concern if they have assessed their own level of participation? Some centres provided identical witness statements for all candidates; clearly this is not the intention of this part of the CMRB and indicates that the statements themselves are probably difficult to justify if they have been a straight forward 'cut and paste' rather than individually assessed work.

The majority of candidates undertook projects of an appropriate challenge. Where problems occurred, centres completed projects such as simplistic pop-up cards, packaging (without a bottle) or very simple interior design models. This lack of demand often meant that centres incurred an adjustment due to a lack of demand or too many repeated simplistic techniques. To a lesser degree there was occasionally an over-reliance on one manufacturing technique, particularly the over use of CAM. A general guide for this should be no more than a 50/50 balance between CAM and more traditional manufacturing processes. Clearly an over-reliance on laser-cutting is not demonstrating a range of manufacturing processes.

Quality of Outcome

Here we are looking to see the quality of the assembly and finish of the entire end product rather than the processes involved in the individual manufacture of the components, although the quality, assembly and fitting of the individual components into the final product, is an essential aspect of producing the finished item.

This section was often more accurately marked and evidenced than the previous section. The inclusion of as many photographs in the folder as the centre feels necessary to justify marks, is encouraged. This is often assisted by photographic evidence submitted in the evaluation section under testing. Where good quality photographs had been provided, moderation was often straightforward, although some candidates were marked a little generously.

Most candidates had produced some practical outcomes but not all were completed. Problems occasionally arose with centres over marking work that involved minimal skill and processes. There were some difficulties assessing identical make tasks particularly if not photographed clearly. It is important for the centre to offer very detailed justification of the marks in these cases in order that the marks can be accepted.

As previously pointed out, the demand and CNC issues did lead to some adjustments, there were also some centres had still adhered to the submission of a 2d/3d element from the previous specification when there was no need to. Although with many products it is accepted that the submission of both 2d and 3d elements are essential as they form part of the whole product.

Health and Safety

Good quality annotation of photographs showing the step-by-step manufacture of the product regarding safety was helpful. No dangerous practices were evidenced. Many candidates included elements of safety and risk assessments in their folder work which wasn't really necessary but good to see.

Testing and Evaluation

In this section candidates are expected to evidence a range of tests. This did not always happen, indeed around half the candidates seen did not offer the testing as expected, just ploughed straight into the summative evaluation. The evaluation should focus on the summative comments around the testing of the final product and not credit work submitted in the design section.

Candidates would benefit from being encouraged to test against the specification to determine the effectiveness of the final product. 'Tests' were sometimes omitted completely or amounted to a user/client survey. Candidates sometimes failed to focus upon the models that had been produced, instead referring to the real building etc. It would appear the many candidates had failed to plan for this section when writing their 'Specifications'. However in some cases the Evaluations were done well. Many centres evidenced candidate's evaluation against the specification as expected, even if it was only based upon the candidates own opinions. Third party opinions were evidenced to varying degrees, but were very much secondary to the candidate's immediate thoughts. Evidence of user group testing was generally limited by most candidates.

A significant minority of candidates did not attempt this section at all. Centres are reminded that QWC marks are only awarded for work produced in this section. Many did not read the requirements of the mark scheme and submitted generalised comments that did not relate to that requirement. Indeed justifying marks that had been allocated from evidence in other sections.

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