**General Certificate of Secondary Education
June 2011**

**Design and Technology: 45502
Graphic Products**

(Specification 4550)

Unit 2: Design and Making Practice

Report on the Examination

General

This was the first year of a new Specification and the majority of centres accommodated the changes well. The vast majority of candidates attempted one of the twelve published Controlled Assessment Tasks and were assessed using the five assessment criteria.

A small but significant number of candidates either over contextualised the brief or omitted to consider one or more of its requirements.

Some delays in moderation were caused by some centres missing deadline dates or misunderstanding the instructions on sample sizes.

It was pleasing to see an increase in the number of candidates who submitted their work by electronic portfolio. Many of these candidates took full advantage of the additional presentation methods available to them when using this media. This was particularly the case with the inclusion of video clips as evidence of procedures or activities undertaken. It is worth reminding centres that choose to use this method of submitting their candidate's work, to inform AQA as soon as possible.

Assessments

Assessment in the majority of centres was generally accurate and fell well within the tolerances set by the Board. There was however some centres who failed to match their assessments to the published criteria and as a result produced marks that were well out of tolerance. In some cases centres have awarded marks in a holistic way not considering the fact that missing criteria can affect the overall mark.

Below are some general statements of how the 5 assessment criterions were addressed followed by comments on issues specific to each of the twelve assessment tasks.

Criterion 1 (Investigating the Design Context)

Discrimination in the selection of material was essential if this section were to remain focussed. Many candidates still include generic or irrelevant material much of it downloaded directly from a range of sources. Many candidates failed to adequately analyse the design context and this lead to a proliferation of peripheral material. When considering existing products many candidates restricted themselves to the outline shapes, graphic imagery, and materials. Only a small minority disassembled the product to consider its constructional detail. Candidates should be encouraged to carry out this disassembly activity stage in their primary research. The better candidates produced detailed annotated and photographic evidence of this activity. Analysis of the research undertaken was generally well done usually leading to a design specification which identified the important design criteria to be considered. Many candidates produce a good design specification, identify the target market but few profile it.

This section was generally well assessed by the majority of centres, however there were some instances of full or near full marks being awarded for pages of generic

copied research or when one or several of the above criteria were not evidenced in the candidate's folders.

Criterion 2 (Development of Design Proposals)

Candidates were expected to show and develop a range of imaginative design ideas. Many candidates did this by using 2D and 3D annotated sketches which showed not only graphic imagery but also constructional detail. These were then further developed through well evidenced modelling and testing. It was pleasing to see candidates use photographs to evidence this activity. Modifications and prototypes were then made as a result before final proposals were presented Many then went on to consider wider issues including social, moral, environmental and sustainability. The use of Computer Aided Design (CAD) contributed greatly to this section.

Candidate are encouraged to use " screen dumps" to evidence the development of CAD work, far too often drawings and images appear in candidate's folders with little evidence of how they were formed or where they appeared from. Some candidates missed out some elements of this important process and it was often difficult to follow the development of their thinking from design ideas to their final proposals. Many candidates just repeated their earlier ideas with only minor adjustments and missed out the important modelling and testing stages. There was also a tendency for some candidates to concentrate too much on the graphic imagery and not enough on the constructional detail or materials required to make an effective product. As a result many final proposals did not have sufficient detail given to enable them to be made by a third party.

The better candidates then planned thoroughly their production by including a justified manufacturing specification and sequential plan for making. The best of these compared manufacturing in the school environment to that in industry and included quality control information.

Many candidates however failed to produce either a product or manufacturing specification, whilst others simply downloaded imagery of a manufacturing process with a few generic comments added to the sheet of work.

This section was significantly over marked in many centres with high marks being awarded when several of the assessment criteria had not been addressed.

Criterion 3 (Making)

Moderation was assisted by the inclusion of photographic evidence of the final making and all centres are encouraged to do this. It is important to point out however that making marks were only considered or adjusted following a visit to the centre. The Controlled Assessment Briefs often stated exactly what should be made but left it to the candidate to build in an appropriate level of difficulty and rigour. Many took up this challenge and some excellent outcomes were seen. These combined the use of a wide range of skills, techniques and processes with an appropriate level of difficulty and a good quality of finish. Computer Aided Manufacturing (CAM) at various levels was often used in this process. Many outcomes were not only effective but also commercially viable. The better candidates are to be congratulated on the excellence of their work in this section.

Some candidates opted for the easiest option and the lack of constructional planning often meant that their work was less than challenging or commercially viable. A good example of this would be the significant number of candidates who were making box like structures but who failed to consider such basic things as nets and gluing tabs in their development. This then lead to corner joints being masking taped together in the final outcome. Unfortunately these omissions were not limited to the less able candidates.

It was disappointing that some sections of the design briefs were ignored by some centres. Briefs that asked for a number of manufactured outcomes, including promotional materials or smart materials were ignored, yet high marks were still awarded for the final outcome.

This section was very well assessed in the majority of centres visited. There were however some notable exceptions where very high marks were awarded for work which lacked both rigour and a good quality of finish.

Centres are encouraged to contact their coursework advisor if they have any queries over what is required from the final outcome.

Criterion 4 (Testing & Evaluation)

It is accepted that the evidence for this section will be found throughout the folder. Much of the work done in development can contribute as on-going testing and evaluation which through modification then lead to improvement. This was often the weakest area. Summative evaluation was generally done well with the majority of candidates involving the opinions of the client and matching their evaluation against the specification. Some candidates gave very brief generalised evaluations which sometimes focussed on the process rather than the product.

Conclusions, modifications, testing and third party opinion are all important aspects of a good evaluation; the twelve marks awarded for this section can be gained, as has been stated, for work throughout the folder, evaluations that only make brief or little reference to these important aspects cannot be awarded marks in the higher range band.

Overall this section was generally well assessed by the majority of centres but there were a small but significant number of centres who gave high marks when there was very little evidence in the folders.

Criterion 5 (Communication)

This criterion requires candidates to be selective, concise, clear in their presentation and have the ability to use technical language correctly.

Many candidates failed to be concise and produced folders in excess of 40 A3 pages. Much of this excess material was in the investigation section and candidates should be encouraged to select and summarise only relevant material. Candidates should also be encouraged to avoid repetition and consider the best and most economical layout of each sheet.

The missing stages in development meant that the work of some candidates was difficult to follow.

There was a variable use of technical language and spelling punctuation and grammar was surprisingly poor from many candidates especially when considering that much of their work was word processed. Assessments in this section were generally accurate.

Controlled Assessment Tasks

Task 1 - Activity Pack

This task was undertaken by a relatively small number of candidates.
Most had no problems in the interpretation of the brief and in finding suitable examples for their investigations. There were some very clever and complex designs offered for both the package and its contents and the majority of candidates produced an effective and complete outcome.

The main points of concern were the lack of consideration of scale and the 'buying in' rather than the making of the contents. Candidates should have recognised that this pack was for use by young people on a long journey and that it should therefore be relatively small and compact. Some solutions were very large, quite flimsy and difficult to handle. Many candidates missed the opportunity of extending their range of skills by buying in all, or most of the contents of the pack. The better candidates either made all of the contents or mixed and matched with made and bought in. A good example of this is when crayons were to be included the crayons were bought in but the package for them was candidate produced.

Task 2 - Board Game

This was a very popular task which was undertaken by a significant number of candidates. This was often the only task undertaken by candidates in a given centre. Candidates generally understood what was being asked of them and found suitable examples for their investigations. These investigations however often concentrated on how the game was played rather than its constituent parts and their constructional detail. In some cases the 'race and chase' element was ignored.

Most candidates completed an effective outcome and the main discriminators were the complexity of the box and board, the range of game accessories such as counters and cards and the quality of finish. There was a significant use of CAM in completing this task. Some candidates completed their work in a material which was too thin.

Some candidates concentrated on the board itself and the folder included work confined to the images to be applied. The packaging and secure containment of the contents were equally important, candidates need to bear this in mind when undertaking this task.

Design Task 3 - Kinetic spread book

Another very popular and easily understood task.

Candidates in their investigations did not always look at the full range of pop up and other mechanisms which produce movement and this often limited them when completing their designs.
The majority of candidates completed an effective outcome to the correct size and orientation. The main discriminators were the range and complexity of the mechanisms, the method of binding and the quality of finish. Some of the work produced was at near commercial standard having used CAD/CAM very effectively.

Task 4 - Model Building

This task was chosen by relatively few candidates.

Those who did complete this brief either did it very well or very badly. Investigations generally looked at suitable model buildings, appropriate scale and methods of flat packing and packaging ready for sale. There was a range of materials chosen with some of them (corruflute) not being easy to engineer into flat pack constructions. Most candidates considered scale but many did not package their product ready for sale.

The better candidates produced effective flat packed models to scale in a suitable material such as thick card. They then packaged these and included assembly instructions and commercial signage.

Task 5 - Band Promotion

This was probably the most popular task undertaken. It was also the one that caused the most misunderstanding. The concept of a 4 fold CD case and the definition and inclusion of a smart material were the main concerns.

Candidates investigated a wide range of items which would be suitable for promoting a band. Many failed to acknowledge that the promotion was for a school band and substituted their own favourite pop group. This limited innovation.

It was intended that candidates should design and make a CD case which folded 4 times. This would encourage the considerations of thickness, folding and spine arrangements. This was done to get them away from producing simple labels which were then inserted into acrylic CD cases.

Many candidates did understand what was required and produced a variety of folding arrangements, some of them very complex and innovative. Some however misunderstood and produced a variety of outcomes such as point of sale displays for CD's and video. Many of these outcomes were also quite complex and the demand involved in producing them generally outweighed the miss-understanding.

A good range of other promotional material was generally produced with smart materials often being used on tickets and T shirts. Some candidates confused smart

materials with modern materials such as holographic paper. A small but significant number of candidates did not acknowledge or use a smart material.

Design Task 6 - Stationery Pack

This was not a popular choice and only a small minority of candidates attempted this task. Many of the candidates that did attempt it concentrated on the imagery and ignored the packaging of the contents. A number of candidates did however produce excellent final solutions displaying creative images, reflected both on the stationary and the cabinet itself.

Design Task 7 - Olympic Promotion

Another popular and generally successful task. Candidates were asked to make the packaging and promotional material for a commemorative Olympic product, many also designed and modelled the product itself.

Investigations generally concentrated as expected on packaging and promotion. There was some slight confusion as to whether candidates should use the controversial existing logo or design one of their own.

This was seen as a 'catch all' task and a very wide range of products were identified and used. Discrimination was again achieved by assessing the range of skills, techniques and processes used and the quality of finish.

Design Task 8 - 'Milano Pizza'

A very popular and generally successful task. Material was readily available to aid investigation and the majority of candidates had no problems with the interpretation of this task. A small minority of candidates produced a holder for business cards rather than a menu holder made from card as required. Some candidates failed to incorporate a smart material.

The best material for the production of a pizza box is E3 fluted cardboard but many centres encountered difficulties in obtaining this and used a variety of substitutes some more successfully than others. Thermal strips were included by most to check the temperature on delivery. Some candidates failed to appreciate that pizza boxes arrive at the fast food outlet flat packed and opted for a permanent construction. Because of size and printing issues this brief encouraged candidates to stick on their labelling rather than printing them directly onto the box. Some candidates solved this problem by completing scaled prototypes and commenting on the problem when relating to commercial production. Menus and their card holders were generally well made.

Design Task 9 - Chocolate Outer

One of the less popular tasks, generally done well by those who chose it. The majority of candidates understood the significance and dual purpose of an outer and considered these in their investigations.

Most candidates produced an effective outcome consisting of a point of sale outer and wrapped chocolate bar. Many of the more able candidates built rigour into the point of sale outer by including elaborate constructional detail and comprehensive promotional and informative graphics.

Design Task 10 - Hamster House

Another of the less popular tasks with wide ranging solutions of varying quality. Many commercial hamster houses are made out of materials other than fluted board and many candidates wasted time by considering them in their investigation. Those made out of fluted board are made from fluted cardboard decorated with non-toxic inks. Some candidates interpreted fluted board as the plastic based corruflute and this would have had disastrous effects when chewed by the hamster.

Outcomes varied widely from some well packaged, flat packed complex card based constructions, with assembly instructions, to a few pieces of loose material with no indication has to how they were to be assembled or marketed.

Design Task 11 – Recyclaphone

A minority choice which was generally done very well. Phones and their packaging along with environmental and recycling issues were readily available for candidates to investigate.

The vast majority of candidates produced an effective outcome consisting of a packaged modelled mobile phone and its promotional material. Not all phones were modelled from block foam but there was often justifications made as to why this was the case. The environmental issues were invariably addressed through the graphics and signage on the packaging and/ or in the instructions given for recycling the phone.

Design Task 12 - Jack and the Beanstalk Promotion

A popular choice producing outcomes of a varying quality. The brief was clear but some candidates changed the focus from Jack and the Beanstalk and/or missed out some of the other requirements such as a smart cinema ticket.

The required items were not as readily available for investigation as in some of the other tasks and many candidates concentrated on the graphic imagery rather than constructional disassembly.

It is accepted that a scale of 1:5 relates only to the height of the free standing display and not the thickness of the foam board and that adhesive could be used to fix any printed paper material to the foam board as a finish.

There were some excellent and original graphics used and these combined with complex flat packed structures for the foyer display gave many candidates an excellent 3D outcome. Many candidates then completed their submissions by producing a smart cinema ticket, poster and press advertising. Many of the press adverts were shown incorporated into the page of a newspaper. Smart materials used on tickets were generally related to security or made use of 'glow in the dark'

material. Some candidates confused smart materials with modern materials such as holographic paper. A small but significant number of candidates did not acknowledge or use a smart material.

UMS conversion calculator: www.aqa.org.uk/umsconversion