

Design & Technology (Graphic Products)

General Certificate of Secondary Education **GCSE 1955**

General Certificate of Secondary Education (Short Course) **GCSE 1055**

Report on the Components

June 2008

1955/1055/MS/R/08

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This report on the Examination provides information on the performance of candidates which it is hoped will be useful to teachers in their preparation of candidates for future examinations. It is intended to be constructive and informative and to promote better understanding of the syllabus content, of the operation of the scheme of assessment and of the application of assessment criteria.

Reports should be read in conjunction with the published question papers and mark schemes for the Examination.

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Chief Examiner's Report

Chief Examiners Report

The reports for the written examinations (components 1 – 4) should be read in conjunction with the appropriate mark schemes. The coursework report (component 5) should be read in conjunction with assessment objectives outlined in the Specification.

The overall standard of responses to the written papers was comparable to previous years. The questions are intended to examine the knowledge and understanding the candidate has acquired through the practical activities of designing and making. They require candidates to respond in a variety of ways such as, using one word answers, detailed explanations annotated sketches and accurate drawings. Whilst many excellent responses were seen it was apparent that there are still general weaknesses in explaining and sequencing processes and in producing accurate drawings. Centres are encouraged to address these issues by using past papers and mark schemes to focus candidates on the key aspects of a question. Increasingly, candidates need to have a knowledge and understanding of appropriate commercial production methods, including print finishing processes, and the environmental implications of the manufacture of commercial graphic products.

The overall standard of Coursework was comparable with previous years and many centres had their marks confirmed by external moderation. Although the coursework project is divided into six assessment objectives it is important that candidates retain an overall view of the whole design and make process. There is some evidence to suggest that candidates in some centres have become over reliant on guidance sheets and that this is limiting their creativity. It is also apparent that many centres are spending considerably more than the recommended time on the coursework. Nevertheless, the coursework achieved a high degree of differentiation. At the top end there was some outstanding work that demonstrated excellent designing and making skills. Projects with a low total mark often failed to complete sections rather than demonstrating low ability throughout the six assessment objectives. Centres continue to make progress in terms of guiding candidates towards suitable projects and making sure the project is of the required length.

Evidence of the use of CAD/CAM continues to be variable in that there are pockets of excellence but far too many centres where the understanding and use of CAD/CAM is superficial. Centres should continue to plan for the use of CAD/CAM and address resource and training needs at a centre level.

Centres are to be congratulated on their efforts in preparing candidates for assessment in this specification. In almost all cases it was evident that the candidates were well prepared and this allowed them to demonstrate their ability in each of the assessment opportunities. The small number of centres that encountered difficulties are encouraged to attend the 2008/9 round of training provided by OCR.

1955/05 (1055/03) Coursework

Overview

The Standard of work presented for moderation this year has generally been good, with outcomes produced being suitable for the OCR D&T: Graphic Products Specification in the majority of centres. It is clear that there are many talented students who are well supported and guided by their subject teachers.

Moderators have reported that Centres are acting positively on the feedback given from previous moderation visits and the advice given at OCR training events. However, a number of moderators have reported that centres are using materials that would be more suited to the OCR D&T Resistant Materials Specification to manufacture products. Centres are reminded that products should be manufactured from the compliant graphic materials which are outlined within the subject specification.

A number of centres continue to manufacture two-dimensional outcomes. Items such as posters, leaflets, CD sleeves, DVD covers and inserts, booklets, calendars and greeting cards (unless containing some form of card mechanism) are not suitable for this specification. As Graphic Products carries the "D&T" prefix, coursework projects that are submitted for assessment must result in the manufacture of a three-dimensional outcome.

The outcome for this specification should be a 'functioning prototype' that is capable of quantity (batch) production. A small number of centres have failed to comply with this requirement this year, designing and manufacturing 'shop fronts' and 'interior layouts'. Such projects do not meet the requirements for this specification. Teacher guidance at the outset of the coursework project relating to suitability of projects is paramount to the success of students.

Disappointingly, there has again been evidence of unrealistic marks being awarded by centres which has resulted in adjustments to centre marks. Centres are reminded that the OCR GCSE Design and Technology mark scheme is based upon numerical values and not grades. Each value is related to a description of an activity undertaken by the candidate. Evidence to support the awarding of marks should be contained within the design folder, or clearly evident through the modelling and construction of the final prototype product. It is felt that some teachers need to take a more objective approach and mark the folder of evidence and not simply the candidate.

The use of CAD/CAM has again increased this year. It is important that candidates show evidence of their understanding and ownership of design work generated and manufactured using this method. Moderators have again reported that artefacts manufactured using CAM suddenly 'appear' with no supporting evidence within the candidates design folder. Where used, laser cutters have been felt to be a contributing factor in the selection and use of non-compliant materials such as acrylic and mdf in some centres. Laser cutters are excellent at scoring, cutting and engraving 'compliant' materials and as such offer students a valuable tool in the manufacture of their designs.

Evidence of excessive teacher guidance has been noted in a number of centres. Teachers need to take great care when making the distinction between guidance and prescription. In some centres there is an over-reliance on writing frames for candidates work. It is essential that candidates have the opportunity to show flair and creativity in the way they approach the various objectives.

Centres are reminded that there are a number of subject specific support systems in place to aid teachers in the delivery of this specification, ranging from written advice on coursework proposals to a full program of In-Service Training meetings.

Administration

Communication with Centres through Examination Officers has improved this year. However, in a small number of centres messages regarding moderation were not passed on to departments and the moderator arrived to find the Centre unprepared for the moderation visit.

Centres are again reminded that the moderator should be given a quiet area to carry out their task, where they will be uninterrupted by both staff and students. The co-operation of the majority of centres in ensuring that the moderation process proceeds smoothly is very much appreciated.

Problems associated with internal moderation and standardisation reduced this year although a small number of centres were required to remark work to establish a reliable rank order of candidates marks. It is important that centres allow sufficient time to carry out effective internal standardisation prior to the submission of marks.

Inaccuracies in Centre paperwork is still a problem. Moderators reported that a number of centres failed to submit the MS1, CCS 160 and CSF forms by the 15th May deadline. Failure to receive these forms often leads to delays in the Moderation process. Moderators also reported a large number of errors associated with addition of marks on the CSF form and the transfer of these marks to the MS1 form. Where used, spreadsheets were found to increase the accuracy of centre additions. Centres need to take greater care in the checking and transfer of marks prior to submission to OCR.

The provision of annotated coursework mark sheets on individual candidates work was appreciated by moderators and aided the smooth running of the moderation process.

Centres are reminded that there is a full range of documentation, including downloadable forms and other subject specific support materials on OCR's website: www.ocr.org.uk.

Content

Very few instances of projects with excessive number of pages have been reported this year. Centres are reminded that the specification clearly states that the coursework project should represent 40 hours of work (20 hours short course). Guidance to centres has been that this can be accomplished with 25-30 sheets of A3 paper (12 – 15 short course). Moderators report that the number of candidates producing elaborate borders often at the expense of content has increased this year.

Guidance regarding editing, suitability of content and concise presentation is still required by some candidates.

Performance of Candidates

The more successful candidates showed evidence of having used the Internal Assessment mark scheme as printed in the specification along with the Internal Assessment Comment Sheets as published in the OCR Teacher Guide for Design and Technology. Teacher guidance and support played a great role in the success of candidates.

Centres are reminded to determine the amount of time that they allow for candidates to work on each Assessment Objective by considering carefully the number of marks that the objective carries in comparison to the total score of 105 marks.

Centres are advised to encourage candidates to cut down work in Objective 2 and to extend work in Objective 4 and 6. All centres are asked to ensure that candidates spend sufficient time on Objective 5 by bearing in mind that this objective alone accounts for half of the total marks available.

Assessment Objective One

A small number of Centres are allowing candidates to work to unrealistic briefs; teacher guidance and intervention at this point would help steer projects towards an achievable outcome that meets the requirements of the OCR GCSE Graphic Products Specification. It is particularly important that the brief selected by the candidate will result in the manufacture of a three-dimensional graphic product suitable for quantity (batch) production. The attention of Centres is drawn to the list of exemplar outline tasks given in the 1955/1055 subject specification.

Candidates clearly need guidance on the structure of Objective One. Design briefs should be clear, concise and precise. Many candidates still give little information regarding the user needs and requirements, market for their product, and the requirement for batch production.

Successful Candidates gave examples of the range of users and the users needs, and the target market, using evidence in the form of photographs, graphs/charts and diagrams to clearly describe the situation and need for the design. They identified and described a target user group. They briefly analysed the information gathered before using this to generate a concise Design Brief that clearly identified the product, users and target market, and highlighted the production of a marketable prototype product capable of quantity (batch) manufacture.

Assessment Objective Two

Candidates continue to spend too much time on this objective often producing considerably more, often irrelevant work than is required for the 12 marks available. Approximately four sides of edited, relevant, coherent and concise work should suffice.

Candidates need to plan their research if they are going to produce appropriate work. Candidates should include evidence of primary research as well as secondary research and would benefit from guidance as to whether work is relevant to this Objective, or would be better suited to objective 4.

Questionnaires are one of the most common activities within this objective, but many questions are still being used that have no relevance to the brief, frequently being general in nature. Support and guidance of candidates in the design and use of questionnaires is required in many centres. Analysis of results of questionnaires is often shallow and information found is often not used in the design specification. It should be impressed upon students that it is the analysis of information and conclusions drawn that gains credit. Candidates should be made aware that questionnaires are not the only method of establishing user needs and requirements. The results of interviews with 'experts', target users, and possible retailers could also provide valuable information.

Many candidates fail to establish relevant 'size' information. For instance, a candidate designing a perfume packaging will often fail to establish the size and shape of the bottle to be held within the packaging. This will obviously limit design activity and also the possibility of manufacturing a fully functioning product within Assessment Objective 5.

Evaluating and analysing existing products has improved in some centres but this activity often relies upon downloaded images rather than 'hands on' disassembly activity. It is important that candidates should focus on how existing products meet the need of the user. There is much evidence of candidates merely labelling 'surface detail' rather than investigating and analysing aspects such as materials, construction, production techniques, target market for product, etc. Candidates should be encouraged to use high scoring analytical and evaluative comments.

Candidates should be guided towards evaluating one or two products in depth rather than identifying a large amount of products and providing limited analysis. Many candidates continue to collect copious amounts of data and then fail to analyse it, draw conclusions or make reference to it within their Design Specification. Candidates are advised to make clear links between their research and the Design Specification by analysing all of their findings and drawing conclusions that will subsequently form part of their Specification.

Design Specifications continue to improve and whilst most candidates make reference to the requirement to produce their product in quantity, some candidates still make no reference to batch production in their specification. Moderators also reported that many Specifications were vague and generic, being applicable to almost any product. A good Design Specification is essential to scoring highly in all the remaining objectives.

Successful Candidates planned their research. They identified and carried out research into the needs of a range of possible users, and fully analysed and evaluated appropriate existing products. They used ICT to find or contact sources, to help sort, analyse, edit and communicate their results, and to keep work concise. They explored the facilities available to them in their centre to manufacture in quantity. They were very selective about what to include and produced work that had great depth, with all findings analysed and evaluated. They drew conclusions from all this work and incorporated these into a structured, detailed, bullet pointed Design Specification that included reference to a system to ensure control over the production of a product in quantity.

Assessment Objective Three

The range of techniques and media used within Objective three varied widely but this objective was generally accurately assessed by the majority of centres. Centres are advised to encourage their students to initially use pencil sketches to generate a range of free-flowing ideas rather than resort to formal, instrument drawings. Centres are advised to ensure that candidates are equipped and fluent with a range of graphic skills and experience, and have access to a range of graphic media.

Many moderators felt that the actual quality and range of graphic work, graphic techniques and graphic ability has fallen when compared with previous years. It is felt that many candidates relied too much on text to describe their design rather than using drawing to communicate it. Moderators report that many centres are still producing work with a formulaic approach of drawing a set number of ideas and then selecting one or two as the best solution with little design development. This can lead to unresolved design issues and poorly developed solutions. Annotation and critical evaluation of ideas/solutions continues to be an area where candidates would benefit from greater guidance. To score highly candidates must demonstrate that they have used their Design Specification in the generation and subsequent development of design solutions. Many candidates continue to fail to justify their final choice of design proposal and to evaluate it against their Design Specification.

Centres are reminded that there are marks within this objective for communication that uses a 'wide range of appropriate techniques' and Centres attention is drawn to the range of communication techniques listed in the current 1055/1955 Specification. Moderators continue to report a predominance of either totally ICT, or pencil crayon rendering on freehand three-dimensional sketches. Candidates who have used a limited range of techniques should be given limited credit.

The use of ICT and particularly CAD continues to improve. And many candidates who had access to such facilities produced work of a very good standard using a range of software. Centres are reminded that good graphic, freehand and formal drawing skills are still fundamental to the written examinations.

Successful Candidates produced a range of rough, initial pencil sketch ideas, which were then explored and developed into a workable solution. They used a wide range of freehand and formal graphic techniques to communicate their ideas, which they evaluated against the Design Specification. They used ICT appropriately to enhance, develop and communicate their designs. They produced simple 2D and 3D models to justify decisions about size and form. They annotated, evaluated and discussed their proposals to ensure their chosen solution was fully developed. They skilfully used a range of graphic media to present their chosen design proposal on a separate sheet of A3 paper and fully justified their choice with reference to their Design Specification and the Users Needs.

Assessment Objective Four

This assessment objective showed a very high number of centres over marking candidate's work, mainly due to incorrect interpretation and use of the Levels of Response as described in the mark scheme. Moderators continue to comment that many Centres still encourage candidates into *design development* rather than *product development*. All design development should take place in Objective Three. Objective Four should be concerned with turning the design proposal into a prototype product suitable for quantity manufacture.

Although evidence of material testing was seen in most folders, this tended to be of a general nature and on occasion unrelated to the product. In many centres, moderators felt that material testing was a teacher led activity rather than being specific to the Candidates design needs.

Two and three-dimensional model making and testing was evident in the majority of candidates folios but the testing of models and subsequent drawing of conclusions remains lacking. Part and detail modelling was generally weak. Many candidates fail to relate what they learnt through modelling to the actual manufacture of their product and final choice of materials and construction methods. Candidates should be encouraged to see model making, testing and trialling as essential part of a design and make activity, and record and analyse the results of their tests.

There was limited evidence generally of candidates considering and exploring the possibilities of school-based technologies being used to manufacture a batch of their prototype product, or of tackling the problem of quality control. Some candidates continue to rely on information copied, photocopied or scanned on the theory of industrial processes within this section of work. This is worthy of very limited credit if conclusions are not drawn from it. Moderators report that many Centres are continuing to ignore the requirement for a control system to produce the product in quantity.

There was good evidence of the use of ICT in many centres to model and communicate ideas but moderators continue to report limited evidence of presentation drawings, dimensioned working drawings and formal production drawings. These should be present in all Graphic Products candidate's folders, whether produced by hand or CAD.

Successful Candidates produced a range of full and part models to test their design proposal. They explored materials, tools and equipment available to them in their Centre, tested and evaluated their suitability for their prototype product, and then justified their final selection. They tested materials through modelling (sometimes to destruction) and recorded the evidence through photographs, nets (developments), etc. Small-batch systems of manufacture, i.e. templates, stencils or simple jigs had been designed and produced, tested for effectiveness and then evaluated. They made reference to their Design Specification and Design Brief to check their proposal.

Any modifications to the design proposal brought about by this testing were recorded and evaluated, before the final design was drawn out accurately and fully dimensioned. At this point they successfully incorporated Industrial Processes into their work by considering the consequences of higher volumes of production should a major manufacturer take up their prototype product. They used ICT appropriately to model, test and communicate their proposal.

Assessment Objective Five

This assessment objective caused the greatest number of differences between the Centre's marking and OCR's agreed standard. The quality of outcomes and the range of skills evidenced in their manufacture, varied greatly. Centres are generally marking too leniently. Many centres continue to find it difficult to objectively judge the quality of their candidates' prototype products and more rigorous marking of work should be undertaken in this Objective. Many centres are reported as marking 'reasonable standard' work as 'good standard' and 'good standard' as 'high quality'. Complexity of outcomes is also an issue which has been poorly interpreted by a number of Centres, especially when candidates have chosen the theme of pop-ups or packaging. For example, a simple, basic, rectangular box cannot be considered a challenging task for a KS4 student and should be marked accordingly. Candidates must be given clear guidance about constitutes a high quality graphic product.

Planning in this objective continues to be very variable and is commonly over rewarded by Centres. Basic items such as cutting lists and material lists are still frequently absent. There was much evidence of planning being limited to one A3 sheet and being very general in nature. Moderators reported that in some centres a formulaic teacher-led approach to planning is common. Good careful planning is more likely to produce the high quality product that this Objective requires.

To score highly, it is expected that a candidate would produce three A3 sheets of detailed planning. Where there is no evidence of planning in candidates folders, the marks allowed for planning are directly linked to the mark for quality of outcome.

This means that a folder with no evidence of planning and an outcome awarded a quality mark of 4 or less cannot be given any credit for planning. At the other extreme, a project outcome awarded a quality mark of 13 or more, again where there is no evidence of planning in the folder, may only be awarded a maximum of three marks. Intermediate planning and quality marks are worked out pro rata where there is no evidence of planning in candidates folders.

Centres are reminded that the marks for Objective 5 are effectively broken down into four strands:

Planning: 12 Marks

Being economic, resourceful and adaptable: 12 Marks

Independent work and safe working procedures: 12 Marks;

Production of High Quality Graphic Product: 16 Marks.

Report on the Components taken in June 2008

Candidates must show evidence of how they have economically marked out and prepared materials, and how they have been resourceful and adaptable. They should also show evidence of having carried out Risk Assessment on the materials, tools equipment and processes to be employed, and how they have worked independently and safely if Centres are to give them credit. Those candidates that evidenced this area successfully used facilities such as photography to record their progress and produced detailed production diaries.

Where candidates have used ICT in the manufacture of products they should use screen-shots to show how equipment has been set up and used.

Successful candidates produced detailed evidence in their folios for the production of their prototype product, including items such as:

For Planning (12 Marks)

Annotated time plans including constraints and deadlines;
Flow charts including sub-assemblies and quality control loops;
Gantt charts which had been annotated as work progressed;
Annotated storyboards showing logical sequencing;
Lists of equipment, materials and tools required.

For being economic, resourceful and adaptable (12 Marks)

Economical marking out and preparation of materials with sizes
Lists of processes;
Clear explanations of how and where tools and processes are to be used.

For independent work and safe working practices (12 marks)

Illustrated production diaries with modifications or problems highlighted;
Clear evidence of how any problems were overcome;
Health and Safety considerations including Risk Assessment.

This allowed the candidates full access to the 36 marks available for planning, resourcefulness, independent work and safe working procedures.

Such candidates produced some excellent, high quality, prototype graphic products, demonstrating creativity, attention to detail, pride and enthusiasm in their work. They made frequent reference to their Final Product Specification and Design Brief to check their prototype product.

Assessment Objective Six

As in previous years, responses to this Objective were very mixed with some candidates producing detailed examples of thorough testing and evaluating, followed by detailed proposals for modification and improvements to both their product and control system. However, many candidates are still only evaluating the project rather than the product, or reporting on the activities that had taken place.

Most candidates evaluated their product against the original Specification but many failed to justify their responses in detail, relying on simple 'yes' or 'no' statements. Evidence of testing has again increased, although it still remains superficial in many centres. Testing generally involved a questionnaire or survey, which is often limited to peers or family, with limited conclusions being drawn from the results gathered. There were far too many descriptions of the product or personal opinions expressed by candidates, rather than structured and analytical questioning of the intended user(s) leading to reasoned proposals for modifications for further modifications and improvements.

Report on the Components taken in June 2008

Moderators report little evidence of candidates reviewing or evaluating their system to control manufacture. i.e. how well the templates, former or jig worked. Modifications tend to be limited to brief descriptions with little evidence of sketching or formal drawing of proposed design alterations.

Moderators feel that many centres are not allocating sufficient time to this objective for effective testing and evaluation to take place.

Successful candidates compared their final prototype product with their Final Product Specification point by point and analysed how well it had been met. They reviewed their original brief in light of their experiences. They drew upon their Production Diary from Objective Five and evaluated the changes made. They tested their products in an appropriate environment with the target users and interviewed them. They produced questionnaires and carefully analysed the results. They produced photographic evidence of testing, often with the target user and annotated the outcome. They reviewed the use of the system to control production and analysed its effectiveness in manufacturing a batch of the product. They produced annotated sketches and drawings to show suggestions for further development.

Presentation

Most Centres applied this mark fairly and accurately. However, to be awarded more than three marks, Centres should note that candidate's work must be concise. Candidates would benefit from greater guidance with the final content and structure of the design folder before it is submitted for assessment and moderation.

1055/01, 1955/01 Paper 1 (Foundation)

General Comments

This paper proved to be accessible to all candidates and a good range of responses were seen to all of the questions.

The drawn parts of questions often gained reasonable marks while answers which required written responses were sometimes confusing, difficult to read and understand. Occasionally candidates' answers were merely taken from the question itself and where two reasons or an explanation were required the same point was made twice with slight word variations.

It is important that candidates' carefully read both the rubric on the front cover and the content of individual questions. In a limited number of cases candidates' only answered questions 1,3 and 4 because they failed to turn the question sheets over.

There were some inaccurate drawings seen, perhaps as a result of the appropriate drawing equipment not being available or candidates' not choosing to use it.

In a number of cases specific detailed information about materials, commercial practices, the use of ICT and constructional techniques relevant to graphic products was missing in candidates' answers. Some candidates responded to questions, which included these aspects using general knowledge rather than by applying an understanding of subject specific knowledge.

Comments on Individual Questions

- 1(a) (i) The majority of candidates drew an accurate rectangle and circle that were within the tolerance allowed.
- (ii) The standard of printing was generally good with most candidates correctly using capital letters to print the word MENU. The better solutions were those where candidates had used guide lines 5mm apart to print between.
- (b) This part of the question was generally answered well. However, some candidates ticked **two** boxes, left and bold. While the text in the drawing was bold the question was about the alignment of the text.
- (c) A good percentage of candidates showed that they understood what perforating was by stating that it meant that the bottom of the form could be torn off or that the form was easier to tear. Some incorrectly referred to cutting the form or sending it off. One word answers were not acceptable.
- (d) While many candidates correctly identified that 4 A5 forms could be made from one A3 sheet a wide range of other numbers were suggested.
- (e) Offset lithography was identified as being the correct printing method by a good proportion of the candidates.

In parts (d) and (e) no marks were awarded if a candidate had ticked more than one box.

- 2(a) (i)** The shading that candidates' added to the MP3 player to enhance its 3D appearance was often very poorly done. Responses were disappointing to a question which required candidates' to display techniques that they should have been very familiar with from their coursework. Objects such as the MP3 player which have vertical and horizontal surfaces should be rendered using three tones of shading. While some candidates' used two tones, three tones were rarely seen. One of the three marks available was for showing a highlight on the curved corner. This use of this technique was some by only a very few candidates.
- (ii)** As with part (i) this was poorly answered. The clear plastic could have been represented by using diagonal lines or curved streaks across the screen using either a soft drawing pencil or a light blue pencil. Some candidates' gained one of the two marks available but few gained both.
- (b)** The quality of sketching was variable. Candidates who showed one large slot going across the whole width of the box gained one mark. A solution which showed a step on each side of the information board or where there were two or more tabs that fitted into corresponding slots in the top of the box gained two marks. The second method would give the information board more stability. The majority of answers showed a single large slot.
- (c)** It was pleasing to see that more candidates were familiar with die cutting than in some previous years. However, a good number of inappropriate methods such as laser cutting and the use of hand tools, e.g. craft knife, were suggested as being suitable for cutting out 1,000 information boards.
- (d)** Acceptable advantages of being able to remove the information board from the box included, the same box or board could be used for other purposes, it was easier to store or transport and the information board could be changed or updated. A good number of candidates gave at least one acceptable advantage. In questions of this type some candidates fail to express themselves clearly enough. Perhaps it would help if they read what they have written to check if their answer is clear.
- 3(a)** The two shapes were correctly identified by the vast majority of candidates although some incorrectly named the curved shape as a circle or half circle rather than a semi circle.
- (b)** There were varying responses to the drawing of the net. Some solutions were very accurate while others appeared to be drawn to a random size and a few candidates even tried to draw the shape full size.
- (c)** This part of the question was frequently answered well with many candidates gaining at least three of the four marks available. Candidates displayed good levels of visualisation by showing how most, or all of the flaps would fold to securely close the packaging. Some answers were let down by poor quality sketching. The most common errors were to miss off flaps or fold them over in the wrong order.
- 4(a)** This part of the question was often well answered with candidates' realising that the main advantage of a blister pack over a card box was that the product could be seen. The word 'see' or something similar was evident in the answers of a good number of candidates.
- (b)** About 50% of candidates correctly identified vacuum forming as the process that would be used to produce the clear plastic blister.

- (c)** Responses to this part of the question were very variable, ranging from candidates who had written and/or sketched a lot but actually explained very little, to appropriate answers that scored full marks. At this level some candidates appeared to know how the software worked but could not fully explain how the various parts of the design would be produced in their answers. Many stated that they would use quickshape in part (i) but then failed to select the appropriate tools or explain how they would be used. Explanations of how the appropriate tools would be used in parts (ii) and (iii) were frequently better than in (i). A common error in part (ii) was to say that the picture needed to be imported when in fact the 'Eye' was already given and just needed to be moved into place.
- 5** Disassembly should form an important part of any Graphic Products course. Candidates' need to be familiar with various joining methods, both permanent and temporary, materials, finishing techniques, printing methods and production processes used to make various Graphic Products. The knowledge gained from this type of activity should enable candidates to approach this type of question with confidence.

This question was based on the analysis of an existing product and required candidates to display their knowledge and understanding about how it joined together, the advantages of this type of construction and how the design could be improved.

- (a)** Most candidates' gained at least one of the two available marks for this part of the question. Appropriate answers such as 'you do not have to wait for the glue to dry' and 'it means less work/cost to the manufacturer were much in evidence. One word answers continue to be given as answers to this type of question. These do not contain sufficient detail to gain the marks.
- (b)** The sketches produced by candidates were generally of at least a reasonable standard and showed how the tabs (A) would fit into the appropriate slots. The quality of the notes added by candidates was frequently poor. Few included key words such as fixing, locking or securing in their answers. Many said little more than 'Feature A goes in the slot'.
- (c)** A good number of candidates did little more than copy the drawing that was given in the question. Some realised that tab B went into a slot but many were unable to provide a reasonably detailed sketch and notes that was worthy of being awarded both marks. Again as with part (b) key words such as locking, fixing or securing were lacking in many answers.
- (d)** While appropriate answers such as 'the same design of tray or label could be used for other purposes' were in evidence lots of inappropriate responses relating to correcting mistakes and general appearance were very common.
- (e)** A good number of candidates' tried to produce over complex modifications which frequently required the use of additional materials. The better answers showed how part, or all, of the front or side could be removed. Many of the notes only repeated what was in the question and failed to explain how the modification would make the removal of the forms easier.

1055/02, 1955/02 Paper 2 (Higher)

General Comments

This paper proved to be accessible to all candidates and a good range of responses were seen to all of the questions.

The drawn parts of questions often gained reasonable marks while answers which required written responses were sometimes confusing, difficult to read and understand. Occasionally candidates' answers were merely taken from the question itself and where two reasons or an explanation were required the same point was made twice with slight word variations.

It is important that candidates' carefully read both the rubric on the front cover and the requirements of individual questions, this was particularly true for question 5. In a limited number of cases candidates' only answered questions 1,3 and 4 because they failed to turn the question sheets over.

There were some inaccurate drawings seen, perhaps as a result of the appropriate drawing equipment not being available or candidates' not choosing to use it.

In a number of cases specific detailed information about materials, commercial practices, the use of ICT and constructional techniques relevant to graphic products was missing in candidates' answers. Some candidates responded to questions, which included these aspects using general knowledge rather than by applying an understanding of subject specific knowledge.

Some candidates' entered for this paper would have been better suited to the Foundation Tier paper.

- 1(a)** This part of the question was often well answered with candidates' realising that the main advantage of a blister pack over a card box was that the product could be seen. The word 'see' or something similar was evident in the answers of a good number of candidates.
 - (b)** Just over half of the of candidates correctly identified vacuum forming as the process that would be used to produce the clear plastic blister.
 - (c)** Answers to this part of the question were generally better than those on Paper 1 but responses were still variable, ranging from candidates who had written and/or sketched a lot but actually explained very little, to appropriate answers that scored full marks. At this level candidates appeared to know how the software worked and were generally better at explaining how the various parts of the design would be produced in their answers. Many stated that they would use quickshape in part (i) but some then failed to select the appropriate tools or explain how they would be used. Explanations of how the appropriate tools would be used in parts (ii) and (iii) were frequently better than in (i). A common error in part (ii) was to say that the picture needed to be imported when in fact the 'Eye' was already given and just needed to be moved into place.
- 2** Disassembly should form an important part of any Graphic Products course. Candidates' need to be familiar with various joining methods, both permanent and temporary, materials, finishing techniques, printing methods and production processes used to make various Graphic Products. The knowledge gained from this type of activity should enable candidates to approach this type of question with confidence.

This question was based on the analysis of an existing product and required candidates to display their knowledge and understanding about how it joined together, the advantages of this type of construction and how the design could be improved.

- (a) Most candidates' gained at least one of the two available marks for this part of the question. Appropriate answers such as 'you do not have to wait for the glue to dry' and 'it means less work/cost to the manufacturer were much in evidence. One word answers continue to be given as answers to this type of question. These do not contain sufficient detail to gain the marks.
 - (b) The sketches produced by candidates were generally of at least a reasonable standard and showed how the tabs (A) would fit into the appropriate slots. The quality of the notes added by candidates was sometimes poor. A reasonable number of candidates included key words such as fixing, locking or securing in their answers. However, some candidates' said little more than 'Feature A goes in the slot'.
 - (c) Answers to this part of the question were better than on Paper 1 but a number of candidates did little more than copy the drawing that was given in the question. Some realised that tab B went into a slot but were unable to provide a reasonably detailed sketch and notes that was worthy of being awarded both marks. Again as with part (b) key words such as locking, fixing or securing were seen in a fair number of answers.
 - (d) While appropriate answers such as 'the same design of tray or label could be used for other purposes' were in evidence lots of inappropriate responses relating to correcting mistakes and general appearance were very common.
 - (e) A good number of candidates' tried to produce over complex modifications which frequently required the use of additional materials. The better answers showed how part, or all, of the front or side could be removed. Many of the notes only repeated what was in the question and failed to explain how the modification would make the removal of the forms easier.
- 3(a)** Many good answers were seen to this part of the question with materials such as string, thin wire or nylon thread being suggested as suitable for hanging the sign from the hook. However, some responses did not show any method of attachment to the sign. One or two holes in the foamboard were the most common appropriate methods shown. A number of candidates incorrectly tried to join the sign directly to the hook.
- (b) A good percentage of candidates correctly showed that foamboard consisted of three layers and most of these went on to identify at least one of the materials that it was made from, usually the foam centre. Some candidates drew the centre as 'spongy' foam.
 - (c) Most candidates' were able to state at least one property of foamboard that made it suitable for the manufacture of large signs. The most common correct answer was that it was lightweight but other correct answers included smooth surface, easy to print on and that it was a rigid material.
 - (d) Many candidates gained some or all of the marks for the construction of the ellipse. Generally this part of the question was answered better than similar questions in some previous years. However, there are still centres where few, if any, of the candidates show any knowledge about how to draw this common geometrical shape. Even when constructions were correct the quality of the final curve that was drawn was often poor.

- 4(a)** The front and end views were generally completed reasonably successfully. Common errors were to have one or both of the heights incorrect or for the views not to be in line. The drawing of the slot on the front view was less successful. Most candidates' did not project the slot from the sloping surface on the end view and ended up drawing the slot 10mm wide which was too big.
- (b)** In this part of the question most candidates showed a box that opened somewhere but answers frequently lacked the fold in flaps required to hold the box securely closed. One mark was awarded for a suitable method of opening and the second mark for showing an appropriate number of suitable fold in flaps.
- (c)** The answers to this part of the question were generally disappointing with few candidates gaining both of the marks. Knowledge of die cutting was reasonable but few candidates seemed to have a knowledge of card thickness either in microns or millimetres.
- 5** While some good answers were seen to this question a lot of poor responses were evidenced. This was disappointing as the question was based around a very common form of packaging. Many candidates' failed to design either a tray or a box that successfully met all of the specification points.
- (a)** A lot of candidates' failed to realise that the largest accessory which was 80mm long would only fit the tray if its length went along the 95mm long side of the tray. Only a limited number of candidates' took into account all of the sizes given when they were developing their design. Far too many inappropriate, unworkable layouts were seen.
- (b)** The three requirements of a one piece net, a window and a method of opening were evident in many designs. However, the window was often in the wrong place and/or the method of opening failed to include suitably sized fold in flaps.
- (c)** Six appropriately joined and sized surfaces were drawn by a good number of candidates. Different line types were usually used for fold lines but often not for all of them. For the opening only one fold in flap tended to be shown and in some cases there was no part of the box that could open. There were not always the correct number of glue tabs shown, sometimes too many sometimes not enough. When a window was included it was frequently in the wrong place and/or the wrong size.

1955/03 Paper 3 (Foundation)

General comments

Almost all candidates attempted all five questions. There was no evidence to suggest that candidates did not have sufficient time to answer the questions to the best of their ability. This would appear to indicate that the content and challenge were appropriate.

There was a wide range of responses to the questions. At the lower end of the ability range candidates often produced freehand answers to questions that required them to use instruments. At the higher end of the ability range a small number of candidates produced almost perfect answers. It might have been more appropriate for some of these candidates to have been entered for the higher paper.

Many candidates found it particularly difficult to use sketches and notes to clearly explain a process or modification to a design.

Comments on individual questions

Question 1

- (a) The majority of candidates were successful in naming the two shapes used in the drawing of the logo.
- (b) The majority of candidates added a third ray in the correct position and of the correct size. A small number of candidates ignored the instruction to use instruments and produced a freehand solution.
- (c) Parts (i) and (ii) were generally answered correctly, allowing candidates to score two out of the three marks. Responses to part (i) were disappointing in that many answers focused on incorrect concepts, such as older people do not like the sun or take less holidays, rather than making the link between the '4' and a modern form of communication.
- (d) Candidates produced many excellent answers to this question and the standard of freehand lettering was extremely good.

Overall this question proved to be a good opening question, with the majority of candidates scoring more than half of the marks available.

Question 2

- (a) The majority of candidates produced a design for a sign for the Flights to Egypt. Many candidates failed to use the Flights to Italy sign to guide them in producing their solution and basically copied the given drawing of the pyramids.
- (b) Part (i) was completed to a good standard with many symmetrical arrows being accurately drawn. Part (ii) was completed less successfully with a significant number of candidates opting for a permanent method of attachment, such as glue. The most popular correct answers were those showing how Velcro could be applied to both the sign and the arrow.

- (c) Responses to this question were variable. There was clearly limited understanding of the process of screen printing. A small number of candidates ticked more than one box for part (i) and part (ii). This is to be discouraged as these responses score zero marks.

Overall this question produced a good range of responses with candidates responding well to the challenges.

Question 3

- (a) Candidates produced a wide range of responses to the challenge of drawing the outline shape of the mask. Many candidates produced answers that were accurate to the overlay but a significant number of candidates produced very little or partly completed drawings of the wrong size. It was rare to see a construction method used to determine the centre of the 40mm radius arcs.
- (b) The most popular responses were based upon metal or plastic eyelets. A good range of sketches and notes were used to explain the modifications.
- (c) The majority of candidates correctly answered this question by inserting the appropriate words. There appears to be a developing awareness of environmental issues.

Overall the responses to this question were a very varied and individual totals largely depended upon the candidate's ability to answer part (a). A significant number of candidates scored low marks because their response to (a) was incorrect.

Question 4

- (a) The majority of candidates were able to complete the development (net) of the charity box by adding the three triangles to the base. The glue tabs were completed less successfully because they were often either in an incorrect position or of an unsuitable size/shape. The money slot was generally completed to a good standard.
- (b) The most popular correct answers were based upon the idea of being able to use the computer to arrange the development (net) on the large sheet of card to reduce waste. A significant number of candidates used one word answers such as 'quicker' or 'cheaper' without any indication of why this would be the case.
- (c) Responses showed a good understanding of the application of computer technology. The means of 'accessing the picture' and 'pasting it' onto the net were usually completed to a good standard. Many candidates omitted the stage in the process where the picture was cut to size to fit into the given area on the charity box. A large number of candidates had difficulty in clearly expressing their thoughts.

Overall there was a good range of responses to this question.

Question 5

- (a) There was a wide variety of responses to this question. Whilst some candidates had a good understanding of the relationship between A2 and A5 size paper many clearly did not. This resulted in suggestions that between 2 and 40 sheets of A5 paper could fit on an A2 sheet of paper.
- (b) The answers to this question reflected candidate thinking in part (a).

Report on the Components taken in June 2008

- (c)** Whilst many candidates correctly identified that the card would be too thick for the flyer a significant number also incorrectly focused on potential cost implications.
- (d)** The responses to this question were disappointing with comparatively few candidates identifying a weight of paper within the range of 80 – 120 gsm. A small number of candidates selected one answer from gsm or gm², presumably on the basis that they thought they had to select an answer from the given information.
- (e)** This question was answered to a very good standard. Many candidates successfully converted the 3D view into a 2D plan and included all the important features included.

Overall this question produced the range of anticipated responses.

1955/04 Paper 4 (Higher)

General comments

The majority of candidates attempted all the questions and completed these to the best of their ability. This would appear to indicate that the content was appropriate for the ability of the candidates and the time allocation.

There was a wide range of responses to the questions. The majority of candidates clearly explained processes, design ideas and modifications through the use of sketches and notes. The standard of accurate drawing and knowledge of processes and techniques was variable.

There were a very small number of candidates who performed particularly poorly on this paper. It was unclear whether they were inappropriately entered for the higher paper or simply unable to answer the questions on the day.

Comments on individual questions

Question 1

- (a) The majority of candidates completed the development (net) of the charity box by adding the three triangles to the base. Many candidates correctly added four glue tabs to the development (net) but a small number were in an incorrect position or of an unsuitable size. The money slot was generally completed to a good standard.
- (b) The most popular correct answers were based around the idea of being able to arrange the development (net) on the large sheet of card to reduce waste.
- (c) Responses to this question showed a good understanding of the application of computer technology. The means of 'accessing' the picture and 'pasting it' onto the net were usually completed to a good standard. Many candidates omitted the stage in the process where the picture was cut to size to fit into the given area on the charity box.

Overall there was a good range of responses to this question, with many candidates scoring high marks.

Question 2

- (a) There was a wide variety of answers to this question, with many candidates having a clear understanding of the relationship between A2 and A5 size paper, and successfully using sketches and notes to explain this.
- (b) The answers to this question reflected candidate thinking in part (a).
- (c) Whilst many candidates correctly identified that the card would be too thick for the flyer a significant number incorrectly focused on cost implications.
- (d) The responses to this question were disappointing with comparatively few candidates identifying a weight of paper within the range of 80 – 120 gsm.

Report on the Components taken in June 2008

- (e) This question was answered to a very good standard with many candidates scoring maximum marks. The conversion of the 3D view into a 2D plan, with all the relevant features, was impressive.

Overall this question performed well and a good range of responses were seen.

Question 3

- (a) Responses to this question ranged from poor to excellent. In the poorest cases candidates simply copied the given front view and did not include the cut out triangle. Many candidates identified that the triangle would be cut out with a die cutter but significantly fewer identified a second application of the die cutter.
- (b) Many excellent responses were seen to this question. The most common answers focused upon a laminated sheet being difficult to fold. This is clearly a problem some candidates had experienced in their project work. Common incorrect answers focused on UV varnishing looking better than a laminated sheet.
- (c) Responses to this question were often disappointing in that many candidates demonstrated very little real understanding of the process of embossing. The words 'stand out' were often used with little further indication of the surface being raised.

Overall this question achieved a good range of responses.

Question 4

- (a) This question failed to achieve a high level of differentiation because candidates tended to either accurately draw the logo to the overlay or achieved very few marks by drawing little more than the circle. There were very few mid-range marks for this particular question.
- (b) Responses to (b) were largely disappointing with candidates often suggesting an unsuitable material, such as MDF, and an unsuitable printing method such as lithography. The most popular correct answers were foam board and screen printing.

In many respects this question did not achieve the anticipated level of differentiation.

Question 5

- (a) Many candidates correctly identified the input and output motions and used arrows to indicate the direction of motion. The standard of annotation ranged from a few words to quite lengthy explanations.
- (b) The responses to this question were very disappointing in that the very few candidates identified the key concept that the pulleys would move at different speeds.
- (c) A wide range of responses to this question were seen. Some answers were excellent and achieved the correct motion for the sun by converting rotary motion into reciprocating motion. The most popular correct answers were based upon a cam. A wide variety of alternative solutions were proposed that worked to some degree. There was a good level of annotation to support the proposed design solutions. Very few candidates correctly named the motion of the sun.

Report on the Components taken in June 2008

Whilst this question worked well in achieving a good level of differentiation the layout of the question may have hindered some candidates. In particular, many candidates may have failed to answer (c) (ii) because of its position on the paper.

Grade Thresholds

General Certificate of Secondary Education
 Design & Technology Graphic Products (Specification Code 1955)
 June 2008 Examination Series

Component Threshold Marks

Component	Max Mark	A*	A	B	C	D	E	F	G
01 (Foundation Tier)	50	N/A	N/A	N/A	30	25	21	17	13
02 (Higher Tier)	50	N/A	32	27	23	18	N/A	N/A	N/A
03 (Foundation Tier)	50	N/A	N/A	N/A	33	29	25	21	17
04 (Higher Tier)	50	N/A	35	31	28	22	N/A	N/A	N/A
05 (Coursework)	105	N/A	85	73	61	49	38	27	16

Specification Options

Foundation Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	N/A	N/A	N/A	102	86	70	54	38
Percentage in Grade		N/A	N/A	N/A	25.2	24.5	20.9	14.2	8.7
Cumulative Percentage in Grade		N/A	N/A	N/A	25.2	49.8	70.6	84.8	93.5

The total entry for the examination was 6635

Higher Tier

	Max Mark	A*	A	B	C	D	E	F	G
Overall Threshold Marks	175	144	128	112	97	77	67	N/A	N/A
Percentage in Grade		9.3	21.1	29.6	22.6	12.8	2.2	N/A	N/A
Cumulative Percentage in Grade		9.3	30.5	60.1	82.7	95.4	97.6	N/A	N/A

The total entry for the examination was 9399

Overall

	A*	A	B	C	D	E	F	G
Percentage in Grade	5.5	12.4	17.4	23.7	17.6	9.9	5.9	3.6
Cumulative Percentage in Grade	5.5	17.9	35.3	59.0	76.6	86.5	92.3	95.9

The total entry for the examination was 16034

Statistics are correct at the time of publication.

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