Examiners' Report Summer 2008

GCSE

GCSE Design & Technology:
Graphic Products (1972/3972)

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1972, Paper 01 (Coursework)

Introduction

This specification has now been examined since summer 2003 and the majority of centres have become increasingly aware of its demands and requirements. As with last year, there were no significant issues with centres producing work that is inappropriate for this level, or this specification. Most candidates understand the need to evidence 2D and 3D design work in both portfolio and making. Although there are obviously some exceptions to the rule, usually due to centres being newcomers to the course, or unable to attend INSET or having not read the coursework guidance materials or this report.

The majority of work submitted for this part of the course was focused on the assessment criteria, appropriately presented on 18-25 sides of A3 and structured to represent the demand required at KS4. However it is important to note that some centres have begun to creep into two volumes of work spanning up to 60 or 70 pages. This is completely unnecessary and not a good use of the student's time and efforts during what can be the very busy and stressful time of their GCSEs.

Almost all centres understand the requirements of a Graphic Product and the necessity to ensure the outcome has both 2D and 3D elements. It should be noted that some centres still feel the need to produce a separate 2D element, even when the 3D element has an inherent 2D aspect. In fact, as long as the 2D element can be evidenced separately in the design and development work then it is likely to be acceptable. The issue that most often causes difficulties for centres is the gauging of the appropriateness of the level of demand inherent within the problem. The undertaking of very simplistic projects such as the design of celebration cards and envelopes need to be bolstered with a point of sale display for the cards or something similar. The design of simple packaging products may need this kind of additional aspect too if the packaging is likely to produce a very simplistic outcome.

Despite the above comments, many more centres than in previous years appear to have a good grasp of what is required at this level and remained in line with the board's standard of marking.

Administration

It would appear that many centres have some difficulty in following the administration requirements correctly. There were many problems reported by moderators regarding the incorrectly completed paperwork or a total lack of it this year.

The completion of the CMRB is the first area of concern raised by moderators. Centres need to contact the Edexcel publications department and quote product code UG012810, to order as many CMRBs as is required by the centre, free of charge. This, centres are not doing. Many are photocopying very old documents hence poor reprographics hinder assessments. Some are stapled in random corners after photocopying then the CMRBs come apart in transit. Others mistakenly use short course CMRBs or photocopied assessment pages from old coursework guidance documents. It is essential to use up to date and accurate information and for centres to obtain the correct CMRBs.

Addition errors are again common amongst the samples sent to the moderators. It is essential that centres check the marks entered on the CMRBs carefully in order that candidates are not disadvantaged. It is also important to ensure that marks are clearly identified on the CMRBs in

order that the total can be checked. Transfer of marks from CMRB to the OPTEMs form need to be accurately completed too. Inaccurately completed OPTEMs forms can be detrimental to all the student's marks.

In most cases, centres submitted coursework appropriately bound and in the required format. However there were still a significant number of centres that did not clearly label the individual candidates' work; depending, instead only attaching the CMRB to the front cover of each candidates' work. **This is extremely difficult for the moderator as it is necessary to detach the CMRB prior to processing** - if there is then no other means of identifying the project folder it then causes a considerable delay to the moderation process. Please ensure that all work is clearly labelled, separately from the CMRB.

Many candidates failed to number pages within the project. It is useful if the page numbers are added, especially where centre annotation refers to page numbers. Most centres offered annotation, which was in the main informative, and was often very useful to the moderator. It can give clear indication of the reasons for the allocation of teacher marks.

A number of centres had to be contacted to forward further samples of projects, having only sent the projects indicated on the OPTEM form. **The top and bottom candidate should always be added to the sample sent to the moderator in** cases where the OPTEMs does not already **select them**. Indeed, an increasing number of centres were extremely late in sending their work to the moderator, many requiring reminder telephone calls.

Project Selection

The key to success in this part of the GCSE examination is in the guidance given by the teacher to the candidates in the choice of coursework they are to undertake. Here we have seen an improvement in candidate performance. More centres are giving informed guidance to candidates to ensure that they access the full mark range. It is clearly important that the teacher who knows the individual students should decide on the best approach for project choice, differentiating according to any combination of ability, interest, experience or facilities within the centre. The selection of projects by teachers through the use of 'class directed projects' has again led to a very formulaic approach to coursework submission. One or two centres had clearly set the design brief, in so much that all candidates had an identical 'word for word' statement of Needs. In these instances of over-direction by the teacher the candidates cannot be awarded the marks as the teacher has clearly given them the statement. Where class projects were most effective, candidates had used a theme to develop an individual problem and justified their target group from their own point of view.

Candidates must tackle a problem that enables them to design and make a product that includes both 3D as well as a 2D element. It is apparent that a small number of centres still have not recognised this. Where centres have submitted both elements as part of their final product, they have often offered no evidence of the design of the 2D element within the design portfolio. The lack of design evidence for a 2D or 3D element would lead to a restriction in the marks available in the ideas and development sections. Similarly, a lack of one or other of these elements would also lead to a restriction of marks available in the select and use and making sections. Where candidates have found some difficulty incorporating the 2D or 3D element, the topics have included; CD covers, corporate stationery, menus, posters, designs for t-shirts/clothes, comics, books and maps which allow very little development into the 3D requirement of the examination. Architectural design, playground designs and restaurant designs often need an additional element to comply with the 2D element. The inclusion of signage, menu or other advertising paperwork often allows candidates to easily meet the requirements with restaurant/bar design. Playgrounds can have user maps or plans of the parks intended to be displayed in the park, other 2D elements for architectural designs need to be

considered carefully, as many candidates fail to offer a 2D element for this section, relying only on the final design within the portfolio. This is not acceptable as this final proposal is marked as part of the support for the making section. An additional 2D element is required, such as: signage, menu, business pack, etc.

The remainder of this report will focus on the individual assessment criteria as listed in the CMRB.

Needs

This section was completed more successfully than in previous years. Centres usually attempted to establish a need and mentioned a target or user group. Where the centre used a group brief, it was still common to see a formulaic approach to this section and few candidates took ownership of the need and justified their investigations thereafter.

Information

Centres, again, on the whole, assessed this section very well. It should be noted that to achieve the higher level assessment category, more than two sources of research are required and the research needs to be related to the needs and used to inform decisions; often the candidates failed to use it in the specification or design work later. A failure to do this would often prevent access to the higher mark category.

Specification

It is expected that the specification refer to the 2D as well as the 3D element of the problem. If the specification is lacking it builds in an inherent weakness in the candidates' ability to compare their design ideas to the specification and then to test and evaluate the end product effectively. Candidates, again, commonly offered only simple statements as specification points, failing to give reasons for their inclusion. In general the specifications were assessed accurately, where there were discrepancies in teacher assessments it was as in previous years, usually because of a lack of justified budgetary constraint at the higher mark level. A simple statement of an amount to be adhered to is not enough for the maximum mark. The amount must be justified within the problem context.

Ideas

A wide range of work was evidenced. Some centres follow a template approach whereby all candidates produce 6 ideas followed by 6 developments. This helped lower ability candidates but may have limited the better ones. There was little evidence reported by moderators of candidates exploring different aspects of ideas; they tended to produce more of the same style ideas that lacked depth. Where evidence of 2D and 3D designs were offered candidates performed well. It was, however, disappointing to note that some able candidates failed to achieve their potential due to an ignorance of the 2D or 3D requirement in this section. It was clear that many candidates had a pre-conceived solution when investigating ideas and this severely restricted the range of designs for possible solutions. Moderators noted an increase in the use of ICT in this area, which is welcome, but should be balanced with some use of sketched work too.

Develop

It is pleasing to note that candidates completed this section of the coursework successfully. Many centres have appreciated the need to use this section to take designs towards a final solution. However there are still some centres that too often encourage candidates to produce a clear initial design section and settle on one of those ideas as a final solution. Consequently,

candidates cannot show changes to the design, or to modelling and testing of the design changes to establish a suitable solution. In general, this section is still commonly over marked by centres due to a lack of consideration to the 2D element, lack of material or construction process, or a lack of modelling. It is appropriate at this stage to use CAD to model and communicate changes from the initial ideas. A final proposed solution must be evidenced at some point at the end of the development section; this could be a working drawing or pictorial view as appropriate. However, it must document the 2D and 3D elements to be constructed.

Review

This section was usually well assessed by centres and often completed by candidates through the use of a chart or scoring table. Whilst this will often meet the requirements for a medium score it usually fails to address the review of the designs in detail. It is vital that the design work is reviewed against the specification, rather than candidates submitting unjustified or unsupported comments from their own point of view. There was some evidence of the centres evidencing the marks for the section against the evaluation at the end of the process. This is not meant to be the case.

Written Communication

Again this assessment criteria was assessed accurately by centres. Centre should encourage the more able candidates to use specialist vocabulary in order to access the higher level. It is not sufficient to just spell simple statements correctly, a level of demand is required, in this, as in other areas.

Other Media

Here, candidates also performed well. Graphic students tended to use a wide variety of graphical skills in the presentation of their coursework; there was sufficient evidence of the use of other media to suggest that candidates were taught a wide range of presentation techniques. It is important to make sure that photographic evidence of model-making is presented in the folder if the models are not appropriate for insertion to the folder itself. It should be noted here that the insertion of material samples are not to be encouraged, as this serves only to bulk up projects. If tests are undertaken on samples, they should be photographed and submitted as part of the develop section.

ICT

The use of ICT varied greatly from centres where the only evidence was word processing to centres that presented the whole project as an A3 printed document including scanned drawings and sketches, digital photographs, graphs, charts, tables etc. However, centres were accurate with their assessment. It should be noted that expensive CAD packages are not necessary to achieve the high category in this section. Use of ICT in the development of design solutions is necessary though. This, at its simplest level, could be the use of Word in the development of more than one aspect of the 2D element. There is an increasing use of sophisticated CAM outputs and their associated control software packages. Whilst this will allow access to the higher mark category in the ICT section, centres should be aware that an over-reliance on one manufacturing technique is detrimental to the making marks.

Systems and Control

There is evidence that centres are beginning to understand the requirements of this section, but a significant minority of others still fail to understand the demands of this section of the mark scheme. It was still unusual for candidates to achieve the high category in this section. It states

clearly in the assessment criteria, that the use of a systems diagram is required, for the whole or one aspect /part of the manufacturing process. In addition to achieve the high category candidates must indicate the Input, Process and Output boxes and demonstrate the appropriate use of feedback in the use of performance checks. **It was the failure to label the Input - Output boxes that caused most problems**. It is also not sufficient to offer lists of activities in a table with Input - Output columns. Most centres offered a recognisable drawn flow chart with feedback boxes appropriately sited, and achieved a medium mark. However the feedback back must be appropriate as well as correctly labelled.

Schedule

The schedule would often be in the form of a Gantt diagram but without any referral to actual work undertaken or diary notes. Time, selection of tools/materials, making processes, safety and quality control were often omitted at this stage. Candidates need to be encouraged to take a more serious look at forward planning for their work; too many offered work that is retrospective or complete to unrealistically accurate time constrains with no changes to the manufacturing process, because it had been 'perfectly' planned and timed.

Industrial Applications

This assessment category was quite again often under-marked, commonly being adjusted to the high category. Where candidates have documented the use of a manufacturing process that is recognisable as a technique used in industry then candidate has achieved the high category. Processes often overlooked are: vacuum forming (with a mould), encapsulation, use of a vinyl cutter, line bending with a jig, drilling with a jig, blow moulding and laser cutting. The use of various school-based CAM output devices are an acceptable industrial technique as is the use of some CAD packages in the production of the 2D element. Where candidates only document the possibility of using these techniques rather than actually using them they are entitled to either low or medium in this category. It is not required that candidates explain the process of industrial techniques, such as printing etc, if they have **used** a particular process in manufacture.

Select and Use

This year showed an increasing use of the documentation in the folder to provide evidence of 'select and use' in order to access the higher marks. However there were still a small number of candidates failing to meet the requirements of 2D and 3D elements in the section. In order to achieve the high mark category in the assessment criteria candidates need firstly to have produced a product that has a 3D element as well as a 2D element. Consideration must be given to the selection and use of tools and equipment in the production of **both** elements. The documentation of the selection of these tools/processes, is usually shown in the schedule, or flowchart offered in the systems and control section. The demonstration of the skilful use of these tools can be ascertained from photographs in the CMRB or throughout the portfolio itself. In some cases the only evidence available was in the photographs and only the lower marks were accessible. The candidates must also document the selection of those tools and processes in the portfolio and demonstrate the use of them to a high degree of skill.

Making

As marks have already been allocated for the quality of manufacture in the 'select and use' section, this section is focused on the accuracy of manufacture in relation to the final proposal. As in previous years, there are still too many centres trying to justify the marks allocated in this section to a quality product, rather than crediting the candidate for accurately making a product that matches the proposal suggested at the end of the develop section. Naturally, where candidates failed to offer any final proposal, either in working drawings or other graphical

proposals without accurate measurements or reference to scale it was difficult to justify high marks. In the highest assessment category candidates must demonstrate that the manufactured product meets the proposed solution and its features relate fully to those intended in the design work. Naturally modifications can be made during manufacture, but reference would normally be made to these at an appropriate point. This being said, it is pleasing to note there has again been an increase in the number of centres recognizing the need for a final proposal of working drawing to gain credit in this section.

Work Safely

A significant number of centres continued to mark this section of the assessment criteria inaccurately. Where there is no evidence in the portfolio of consideration of safe working practices, teacher observation is acceptable for a low category mark only. Anything else requires documentary evidence in the portfolio, either as photographs of the candidate in using key processes or in the highlighting of safety considerations through the planning or flowchart.

Test and Checks

This section continues to cause problems for candidates. Many centres again failed to address this section with the same degree of thoroughness as other sections. In some cases the marks given by centres reflected this, but many did not. There needs to be evidence of the candidates devising tests that can be applied to their products that can be used to assess whether the specification has been met through the final product. Evidence of using these tests, usually through the use of photographs, is needed to achieve the high mark category. Obviously, when producing a specification it is necessary to be aware of the need to produce measurable indicators for some, if not all, of the specification points. It is important that candidates consider how the specification can be tested realistically; measurable points need to be included as well as aesthetic or opinion based assessment.

Evaluate

Again most candidates were accurately assessed for this assessment criterion. The very best candidates used the previously acquired test results in their evaluative commentary here. But the main aspect missing from the majority of evaluations was again the lack of justification or objective support given to comments being made. It is not good enough just to offer an opinion, it needs to be backed with reason and be connected to the testing having taken place previously.

Modifications

This final section was similar to previous years. Centres marked accurately and obviously felt confident about the application of the marking criteria. Where candidates achieved the high category they offered changes (more than one) that connected to the results of tests and appear from suggestions in the evaluation. Sketches were the commonest method of communication here, some candidates even modelling the changes either through ICT or in 3D models.

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The format of this year's examination papers follows that of previous years. This stability appears to have helped centres prepare their candidates.

The parts of questions that candidates found difficult were the same as in previous years, i.e. the evaluation of design ideas, producing technically different design proposals, providing linked second parts to 'describe' and 'explain' questions and questions testing technical knowledge.

There were some indicators that candidates had used previous examination papers and mark schemes in their revision. Where the topic being tested had appeared in similar questions previously a number of candidates gave answers that closely matched the wording of previous mark schemes. This allowed candidates to gain high marks. Centres should recognise the value of using previous papers and marks schemes in their revision lessons.

Question 1

(a)
The first four items were easy for candidates to correctly identify. The trimmer was the least familiar item for candidates. Where items are named in the specification it would be appropriate for centres to ensure candidates are able to recognise different brands, or styles, of the item. The internet may be a suitable source for these images.
The drawing of the trimmer was incorrectly identified by some candidates as a guillotine. Where candidates identified the item as a guillotine they were credited with a mark for its use if they included cutting in their answer.

(b)(i)
This question gained a range of answers. The information required to answer the question was contained in the diagram. Candidates did not need prior knowledge of die cutting in order to score high marks.

(b)(ii)
This question continued the topic of die cutting. Where candidates were unsure of the correct answers the most common answers offered were "quicker, cheaper & easier". In order to gain marks these three answers frequently need qualifying with additional information.

(c)
Lay planning was a concept poorly understood by the majority of candidates. It may be that this is a topic that could be covered in sufficient depth through the coursework element. Candidates will sometimes want to cut the pieces they want from the middle of sheet of material. By linking this to examination revision better understanding, and therefore marks, might be achieved.

(d)
A significant number of candidates failed to gain marks for this question because they gave generic answers about stock control, rather than using ICT to manage stock control.

(e)
A number of candidates gave answers that related to the generic use of business cards, rather than the intended focus of batch production. The specification limits the contexts in which scales of production need to be taught. This restriction should help centres focus on the relevant important features of each of the three scales of production.

Question 2

(a)(i)
The most common answer given by candidates was that acetate was transparent.

(a)(ii)
This question elicited a wide range of responses. One common reason for candidates failing to gain marks was that they gave properties of the package, not the material. For example where a candidate stated the card protects the sandwich this would be untrue. The card would only protect the sandwich when it was formed into a shape that would surround the sandwich. This illustrates the difference between the material and the object. Candidates may benefit from having this difference made clear to them as it is a common error.

(b)(i)
The mark scheme allowed for a range of plastics to be credited.

(b)(ii)
The most common answer that failed to gain credit was that the plastic would melt, i.e. become a liquid. Where candidates identified that it would change shape they often failed to mention that it would also become smaller, which would have gained the second mark.

(c)(i)
The question gained a full range of responses. Amongst the most common incorrect answers were ones that linked to recycling. Recycling is often given by candidates as an answer when they appear to lack specific knowledge of a material.

(c)(ii)
In order to correctly answer this question candidates only needed a limited awareness of the generic properties of composite materials. Again recycling was a frequent common incorrect answer.

(di) and (dii)
Both these questions were correctly answered by the majority of candidates.

(d)(iii)
The majority of candidates could not answer this question. Answers tended to focus on the ink and printing aspects of the question more than the thermo-chromic one.

(e)(i)
Recycling is a topic candidates are familiar with. Where they failed to gain both marks available it was often due to repeating the same point using different words. For example;
1. Stops paper being wasted
2. Stops plastic being wasted
Candidates should be made aware of the need to identify the key issues associated with a topic and not simply to use different examples to illustrate the same point.

(e)(ii)
The question gained a full range of responses.

(f)

The most common answers offered were "quicker, cheaper & easier". Amongst common correct answers were: reduced use of paper, less staff needed and using email to send designs.

Question 3

The design question followed a long established pattern. It is highly probable that if the same specification points have appeared every time in the past examinations they will appear in the future. This is not guaranteed but it would be a good starting point to practice examination techniques.

It has been suggested previously that the technique below may be useful in increasing the number of marks candidates score in the design question.

1. Read the question carefully all the way through
2. Identify existing products they are familiar with that might solve the problem. Could these be adapted to solve the design task?
3. Read the question again. Will the ideas thought of in stage 2 work?
4. Read the specification points and identify eight separate marks, then underline them.
5. Think of two very different materials and processes to make the designs from.
6. Think of two very different shapes for the design ideas.
7. Check again their thoughts against the specification points.
8. Sketch out the first design idea. It will help if candidates draw several different views of the idea. Add notes to help explain the idea.
9. Repeat step 8 for the second design idea to make sure that each point is different.
10. Check both ideas against the specification points to ensure that they have covered all eight points identified in step 4. Make sure that each of the eight points is different.

By considering examples of candidate's answers the merit of this system can be considered.

Design Idea 1
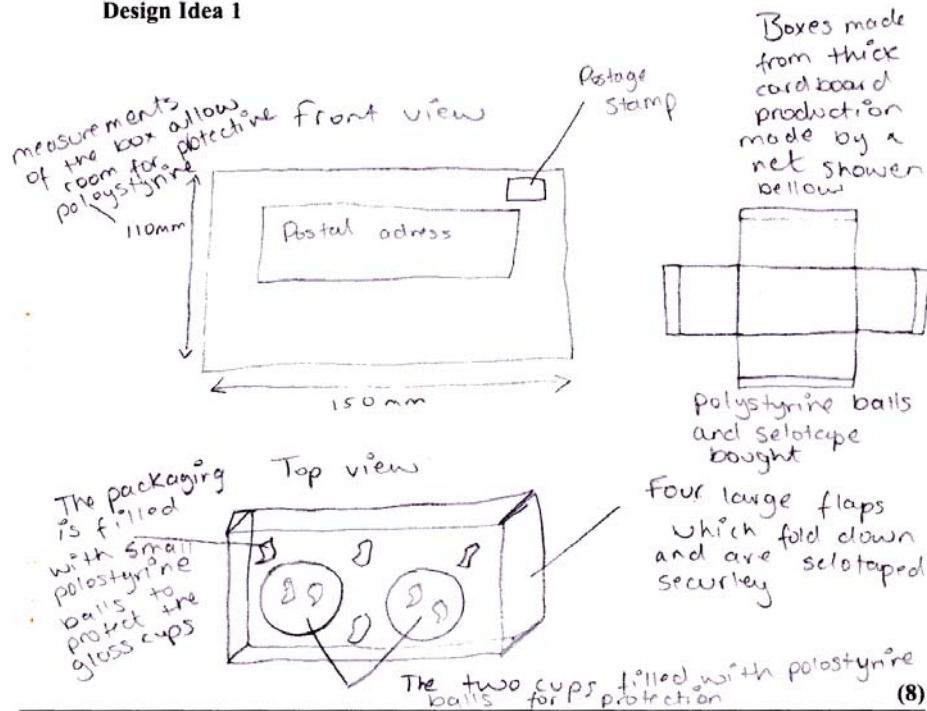
Design Idea 2
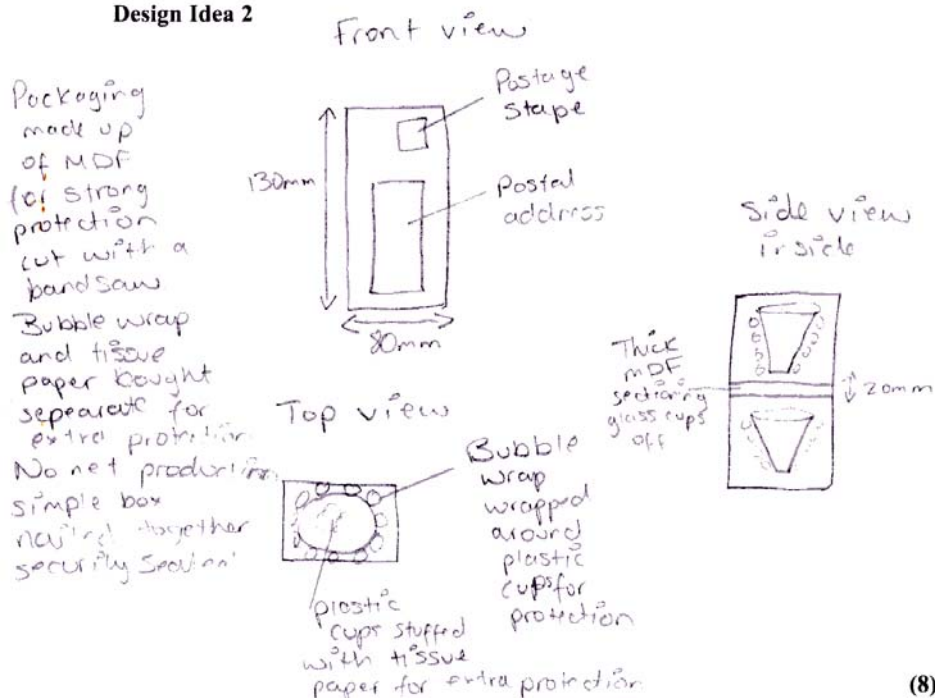
Stage 5 suggests candidates: "think of two very different materials and processes to make the designs from." This candidate has offered 1 idea based on a card net and one based on a MDF box cut with a band saw. Both ideas gained full marks for the bullet point "be suitable for production using school workshop materials and processes"

Stage 6 suggests candidates: "think of two very different shapes for the design ideas". The similarity of the shape of the two ideas means the second idea may be limited in its ability to gain full marks. The second idea did not gain marks for protecting the glasses from external damage and being capable of being closed.

The candidate scored 14/16 for the two designs solutions offered.

A second candidate's solution is shown below.
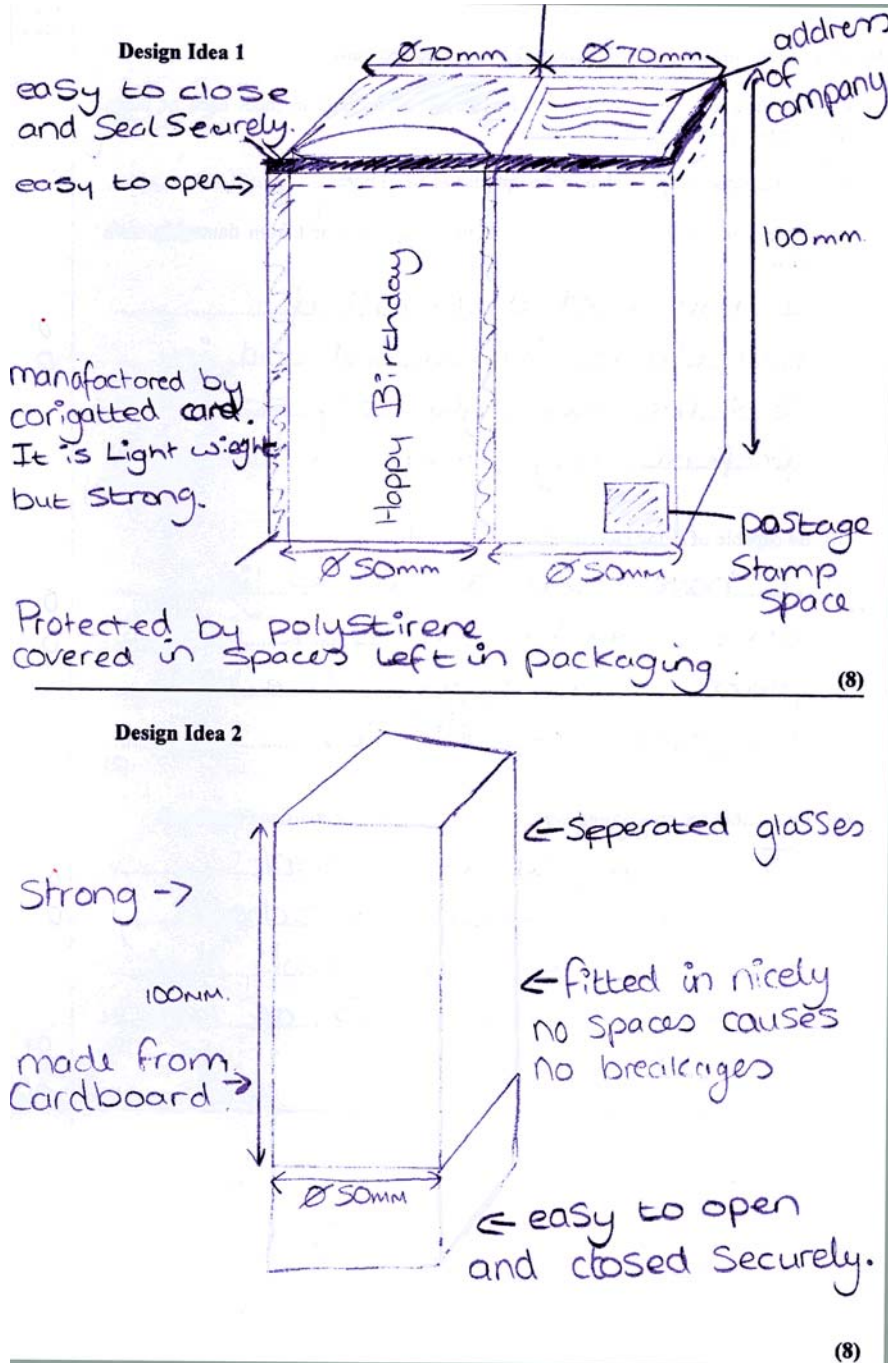
The candidate probably has not checked their second idea. If they had it would seem reasonable for them to notice that they had missed the bullet point that required the design to "have space for a postal address and a postage stamp".

For this bullet point the candidate scored full marks in the first idea, but no marks in the second. Other elements that were present in the first idea were also not offered in the second idea.

The merits of peer marking when candidates are preparing and practicing for examinations may be worth consideration. If the candidate had practiced reviewing others as well as their own work, they may have noticed the weakness in the second idea which could have quickly been addressed.

(b)
The evaluation of design ideas was an area where many candidates failed to gain high marks. Too frequently candidates did not evaluate their designs, they simply described them. The evaluation must contain reference to either positive, or negative, qualities of the design. The evaluation must contain information not credited in the design solutions.

Question 4

(a)
Of the three specification points environment was the one candidates most commonly scored higher on. Market and quality were less well answered, which may be due to lack of familiarity. Where specification criteria do not appear in the coursework element of the subject extra time may be needed to ensure candidates understand the terms.

(b)(i) & (b)(ii)
Most candidates were able to give at least one reason why paper and varnishing were suitable for the board game for each part.

(c)
One of the main reasons for candidates not gaining higher marks for this question was that they repeated the properties or reasons using different phrases.

(d)
The most common reason for candidates not gaining marks on this question was that they gave tests related to the design stage, not the manufacture stage. Checks such as making sure the spelling is correct would be completed before the card was sent to manufacture.

(e)
There were a full range of responses to this question. One common problem was that candidates failed to provide the second linked part of the description thereby only gaining 1 out of the possible 2 marks.

(f)
There were a full range of responses to this question. For part (i) the most common reason for candidates not scoring full marks was to repeat elements of the questions. For example a typical answer may have been "There are no sharp edges therefore it is safe for users". This would only gain one mark for the statement "There are no sharp edges". An example of an answer that would gain both marks would be "There are no sharp edges therefore the user cannot cut themselves". This may be a subtle difference but it may help future candidates' performance if they are aware of this common issue.

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Question 1

(a)
Of the three specification points environment was the one candidates most commonly scored higher on. Market and quality were less well answered, which may be due to lack of familiarity. Where specification criteria do not appear in the coursework element of the subject extra time may be needed to ensure candidates understand the terms.

(bi) & (bii)
Most candidates were able to give at least one reason why paper and varnishing were suitable for the board game for each part.

(c)
One of the main reasons for candidates not gaining higher marks for this question was that they repeated the properties or reasons using different phrases.

(d)
The most common reason for candidates not gaining marks on this question was that they gave tests related to the design stage, not the manufacture stage. Checks such as making sure the spelling is correct would be completed before the card was sent to manufacture.

(e)
There were a full range of responses to this question. One common problem was that candidates failed to provide the second linked part of the description thereby only gaining 1 out of the possible 2 marks.

(f)
There were a full range of responses to this question. For part (i) the most common reason for candidates not scoring full marks was to repeat elements of the questions. For example a typical answer may have been "There are no sharp edges therefore it is safe for users". This would only gain one mark for the statement "There are no sharp edges". An example of an answer that would gain both marks would be "There are no sharp edges therefore the user cannot cut themselves". This may be a subtle difference but it may help future candidates' performance if they are aware of this common issue.

Question 2

(ai)
There were a wide range of answers. Significant number of candidates gave the names of incorrect commercial printing processes. This might indicate that candidates are aware of the technicality of various processes, but not their application. This is supported by the number of candidates that answered question (bii) correctly.

(aii)
The majority of candidates could correctly identify one valid property of a glue stick. There tended to be fewer candidates that went on to give the linked justification.

(bi)
There were a wide range of answers to this question.

(bii)
The style of this question was new, in that it asked candidates for technical knowledge of a process. The question tended to be well answered, which may reflect the way commercial printing processes are taught.

(biii)
Laminating is a process most candidates are familiar with. Again, the main reason for candidates not scoring full marks was a missing linked second part.

(c)
There were a wide range of answers to this question. Where candidates failed to gain both marks was often due to repeating the same point using different words.

(d)
The majority of candidates were familiar with scales of production and could correctly answer the question.
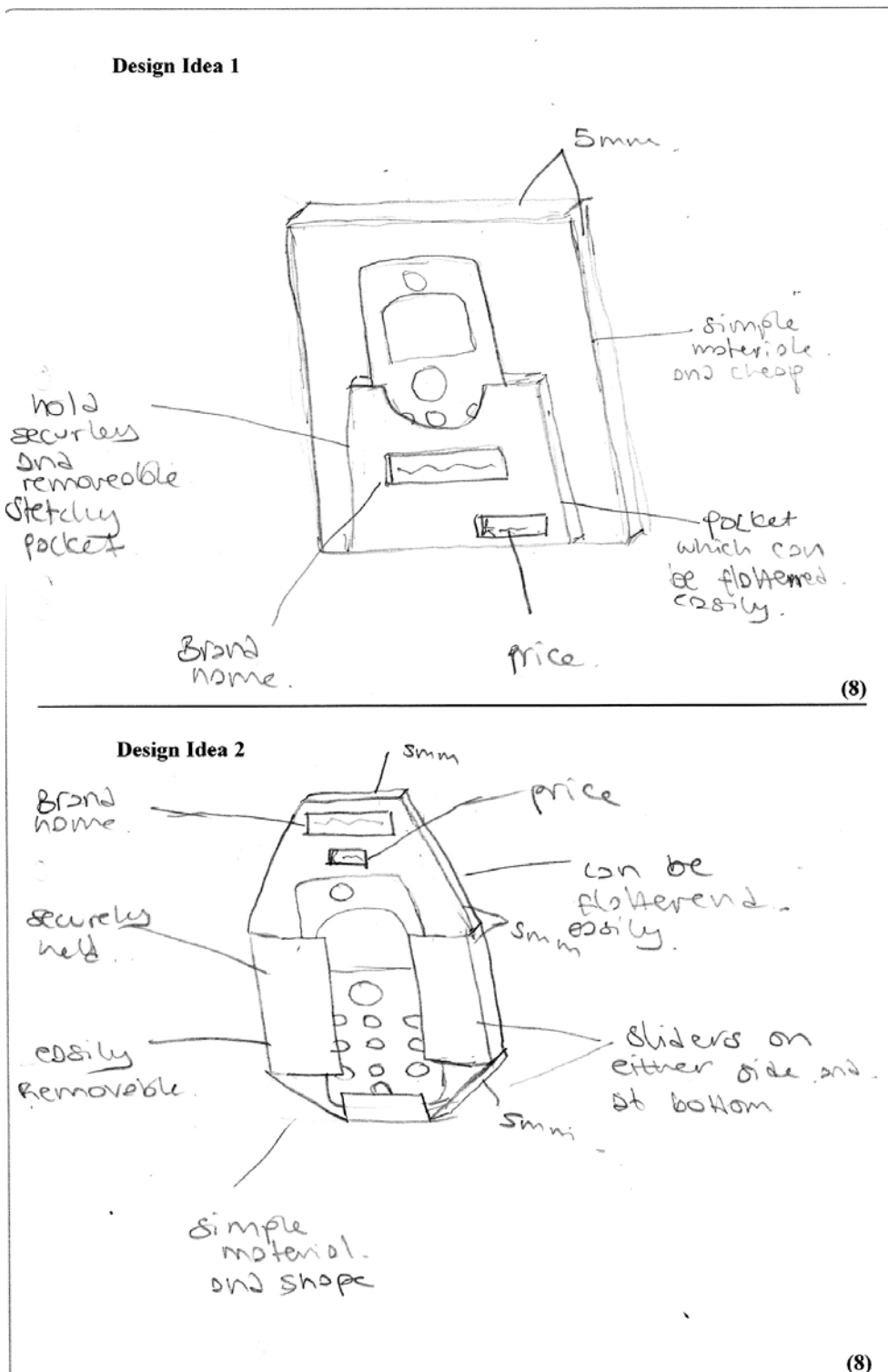
(ei), (eii) and (eiii)
There were a wide range of answers to these questions.

(f)
The advantages of email are familiar to most candidates.

Question 3

The example design solutions below illustrate common problems with candidates design solutions.

Design Idea 1

5mm.

simple
materiale
and cheap

hold
securley
and
removeoble
Stetchy
pocket

Pocket
which can
be flattened
easily.

Brand
name.

price.

(8)

Design Idea 2

5mm

Brand
home.

price

securely
held.

can be
flattened.
Smm easily.

easily
Removeble

Sliders on
either side and
at bottom

Smm

simple
material.
and shape

(8)

The two design ideas are very conceptually similar. The bullet points relating to flat pack and production have been ignored. Simple labels such as "made from acrylic and vacuum formed" would have significantly increased the marks gained.

As an example of a candidate's whose work shows a good technique is below.

Design Idea 1

Design Idea 2
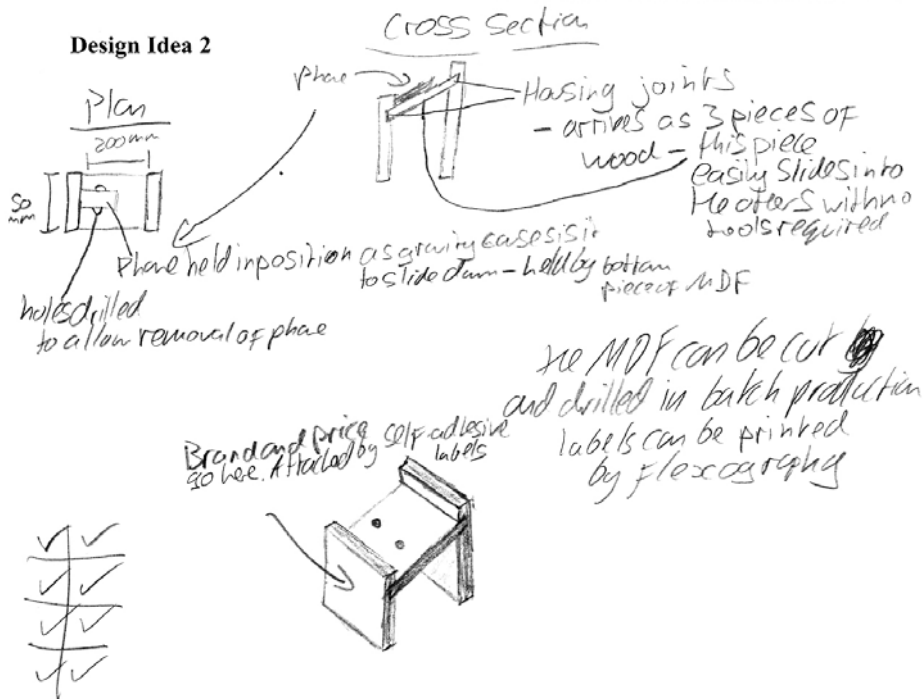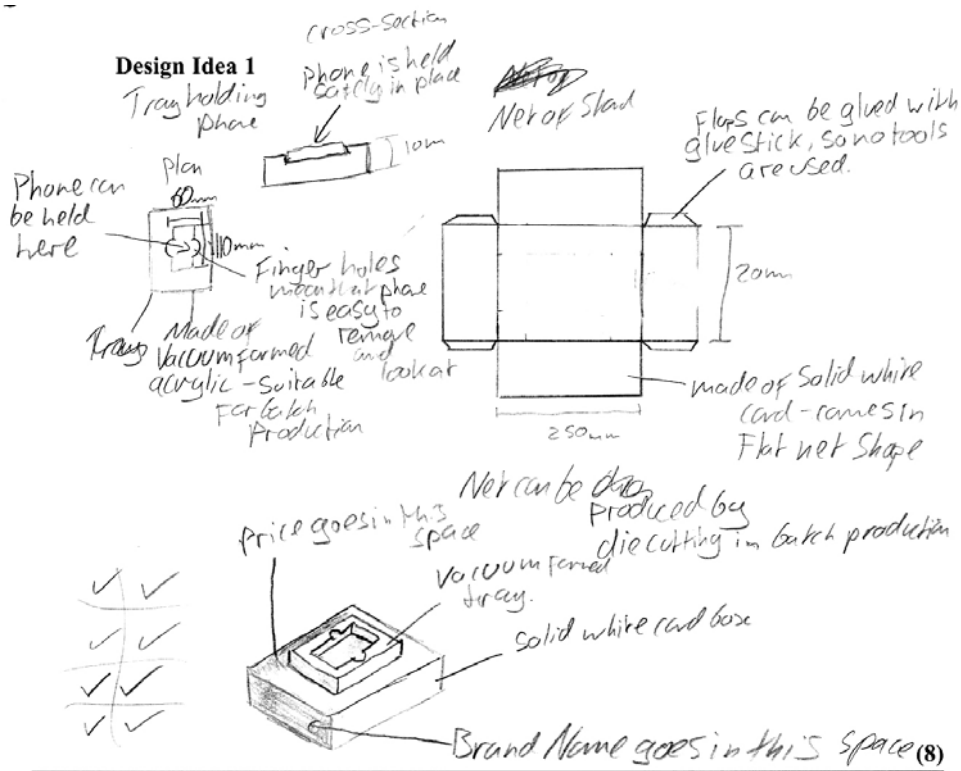
The candidate has addressed all aspects of the specification. The grid of ticks suggests that the candidate has reviewed their ideas and checked that they have covered all criteria. Had the candidate that produced the previous example followed this checking process it may have allowed them to gain more marks.

Question 4

(a)(i)
The most common incorrect answers related to cost and strength.

(a)(ii)
There were a wide range of answers to this question.

(b)(i)
The most common answer given by candidates was that acetate was transparent.

(b)(ii)
Most candidates gave answers that related to the "bumps" increasing grip therefore making the lid easier to remove. When candidates did not score full marks it was frequently due to missing out comments about removing the lid, even though they had identified the extra grip.

(c)(i)
Most candidates were familiar with properties of polypropylene, or at least properties of plastics generally.

(c)(ii)
It would seem that most candidates are familiar with the problems associated with writing on plastic with pens. The most common incorrect answers related applying the graphics manually instead of printing them.

(d)
Environmental issues such as reduction of product packaging are well understood by candidates.

(e)(i)
The most common reason for candidates failing to score full marks for this question was repetition of answers. This is illustrated below.

> (e) Many products are manufactured to meet British Safety Standards.
>
> (i) State **three** advantages, for the consumer, of products being manufactured to British Safety Standards.
>
> 1 .....The products will not be hazardous
> 2 .....The products will be safe to use
> 3 .....They will be checked, so
> the risk of the user being (3)
> harmed by the product will decrease
>
> (ii) Describe **one** disadvantage, for the consumer, of products being manufactured to

The candidate has given the same answer three times using different words. This is a common mistake in all questions where several different pieces of information are sought about the same topic.

(e)(ii)
There were a wide range of answers to this question.

(f)
Most candidates are familiar with the advantages and disadvantages of email. A common error candidates make when asked for disadvantages is to give advantages and vice versa. This may be to not reading the question carefully enough.

(g)
There were a wide range of answers to this question.

Question level statistics

For specific information about cohort and candidate performance the ResultsPlus service from Edexcel may be useful. This provides information about individual candidates results on a question per questions basis. For example the figures below indicate the mean score per question for both foundation and higher tier entries.

Foundation Tier			Higher Tier	
item	Mean		item	Mean
Q01ai	4.31		Q01a	3.67
Q01aii	4.53		Q01bi	1.50
Q01bii	1.08		Q01bii	1.58
Q01c	.28		Q01c	2.24
Q01d	1.13		Q01d	1.11
Q01e	.93		Q01e	.64
Q02ai	.84		Q01f	2.88
Q02aii	1.92		Q02ai	.53
Q02aiii	1.05		Q02aii	.85
Q02bi	.27		Q02bi	1.09
Q02bii	.57		Q02bii	.55
Q02ci	1.17		Q02biii	1.34
Q02cii	.21		Q02c	1.55
Q02di	.91		Q02d	1.79
Q02dii	.89		Q02ei	1.05
Q02diii	.02		Q02eii	.94
Q02ei	.97		Q02eiii	1.11
Q02eii	.87		Q02f	1.14
Q02f	1.02		Q03	11.04
Q03	7.50		Q04ai	.33
Q04a	2.78		Q04aii	.59
Q04bi	1.17		Q04bi	.89
Q04bii	1.41		Q04bii	1.48
Q04c	1.64		Q04ci	.62
Q04d	.70		Q04cii	1.12
Q04e	.40		Q04ciii	1.31
Q04f	2.28		Q04d	1.27
			Q04e	2.25
			Q04f	1.01
			Q04g	.94

In previous years a lack of subject knowledge was the main reasons candidates failed to score higher marks. As the subject has developed teachers have addressed this issue. It may be the examination technique is now the area where candidates can make the biggest improvement to their performance.

GCSE Design and Technology: Graphic Products
Principal Moderator's Report - June 2008
3972, Paper 01 (Short Course Coursework)

General comments

Centres submitting work for this examination have clearly taken on board the advice offered in previous reports and have focused work that clearly addresses the mark scheme. The marks given by centres were very largely in line with the board's standard although adjustment of marks were more commonly required at the top end of the mark range. It is important to note that the individual assessment criteria in this part of the examination, requires the candidates to meet the same assessment demands as in the full course, albeit through the design and manufacture of a simpler less demanding product.

Most projects were:

➢   well focused on the required project activity
➢   presented on 14-20 sides of A4
➢   realistic problems for graphic products
➢   had a 2D and 3D outcome

It needs to be remembered that the short course project should be completed in around 20 hours. Many centres offered work on a rigidly formulaic approach, some candidates may have been restricted by this and may have gained higher marks if they were given a little more freedom. The use of prepared layout sheets is helpful to focus some students, but the design work is often lacking in detail and depth when presented in this formulaic manner.

Again, a significant minority of submissions was poorly bound; centres sending poorly labelled and loosely bound sheets in individual candidate submissions. It should be noted that it is not acceptable to merely attach a CMRB to the front of each individual coursework portfolio, without including a clear label on the front cover, or preferably each sheet contained within. The CMRBs are removed at an early stage and bound separately, leaving some portfolios unlabelled and difficult to administer.

Information

This was an accurately marked area of the assessment criteria with candidates often failing to individualise their research. This is a common issue with centre set projects. The candidates need to use this research in the compilation of a specification later.

Specification

This area was often adjusted as the candidates had failed to justify their specification points, often offering a common list where set class projects had been undertaken. Budgetary constraints were also overlooked, candidates must give reasons for the amount being suggested.

Ideas

This section was often over marked and adjustments were required. Where there was a need to adjust it was because of a lack of design work for both 2D and 3D elements or a failure to produce a wide enough range of ideas. Where evidence of 2D and 3D designs were offered candidates performed well. There were a significant number of candidates who had a

preconceived idea of their final design at the outset, consequently failing to explore a full realistic range or develop alternatives later.

Develop

In general, this section was often over marked by centres often due to a lack of consideration to the 2D element, lack of material or construction process, or a lack of modelling, or simply no change incorporated into the design work. This again was the weakest area of this examination. The inclusion of CAD work is sought here, this can range from the simple development of a logo (2D element)on Word or sophisticated software specifically designed for specific CAD purposes. Evaluation and technical input is also welcome here, but not a series of instructions for the assembly of the final piece.

Written Communication

This assessment criteria was well marked and rarely required adjustment.

Other Media & ICT

This assessment criteria was well marked and rarely required adjustment.

Systems and Control

There is still some evidence that centres are confused about the requirements here. A flow chart is required and it must have the constituent parts labelled; input, process, output and decision boxes must be clearly identifiable.

Industrial Applications

This assessment category was again quite often under-marked, often being adjusted to the high category. Where candidates have documented the use of a manufacturing process that is recognisable as a technique used in industry, then they achieved the high category. Processes often being over looked are; vacuum forming, encapsulation, use of a vinyl cutter, line bending with a jig, drilling with a jig, blow moulding and laser cutting.

Select and Use

This area was generally well marked, most centres recognising the need to document/evidence the selection of tools and processes used in manufacture and the quality application of those processes and tools.

Make Products

This was also well marked by many centres, although some still do not relate the final product to a documented intended outcome in the folder. Here we are looking to check the final outcome for accuracy against the intended product designed within the folder. If there is no suggested final product in the folder in the form of a working drawing, pictorial proposal, or even indicated sketch in the development, of both 2D and 3D elements, then the centre was invariably generous in this section.

Tests and Checks

Many centres failed to address this section with the same degree of thoroughness as other sections. In most cases however, the marks given by centres reflected this. There needs to be evidence of the candidates devising tests that can be applied to their products that can be used

to assess whether the specification has been met through the final product. Evidence of using these tests, usually through the use of photographs, is needed to achieve the high mark category.

Evaluate Product

The marks in this section were again accurately applied. It was common to see only 1 or 2 marks allocated by centres as the candidates had only treated this section superficially, usually due to a lack of time or planning after the manufacture of the final product. It is also important to note; that the lack of a thorough specification at the start made things more difficult for those candidates in this section.

GCSE Design and Technology: Graphic Products
Principal Examiner's Report - June 2008
3972, Paper 2F

The format of this year's examination papers follows that of previous years. This stability should appears to have helped centres prepare their candidates.

The parts of questions that candidates found difficult were the same as in previous years, i.e. the evaluation of design ideas, producing technically different design proposals, providing linked second parts to 'describe' and 'explain' questions and questions testing technical knowledge.

There were some indicators that candidates had used previous examination papers and mark schemes in their revision. Where the topic being tested had appeared in similar questions previously a number of candidates gave answers that closely matched the wording of previous mark schemes. This allowed candidates to gain high marks. Centres should recognise the value of using previous papers and marks schemes in their revision lessons.

Question 1

(a)
The items were easy for candidates to correctly identify. Where items are named in the specification it would be appropriate for centres to ensure candidates are able to recognise different brands, or styles, of the item. The internet may be a suitable source for these images.

(b)(i)
This question gained a range of answers. The information required to answer the question was contained in the diagram. Candidates did not need prior knowledge of die cutting in order to score high marks.

(b)(ii)
This question continued the topic of die cutting. Where candidates were unsure of the correct answers the most common answers offered were "quicker, cheaper & easier". In order to gain marks these three answers frequently need qualifying with additional information.

Question 2

(a)(i)
The most common answer given by candidates was that acetate was transparent.

(a)(ii)
This question elicited a wide range of responses. One common reason for candidates failing to gain marks was to give properties of the package, not the material. For example where a candidate stated the card protects the sandwich this would be untrue. The card would only protect the sandwich when it was formed into a shape that would surround the sandwich. This illustrates the difference between the material and the object. Candidates may benefit from having this difference made clear to them as it is a common error.

(b)(i)
The mark scheme allowed for a range of plastics to be credited.

(b)(ii)
The most common answer that failed to gain credit was that the plastic would melt, i.e. become a liquid. Where candidates identified that it would change shape they often failed to mention that it would also become smaller, which would have gained the second mark.

Question 3

(a)
Of the three specification points environment was the one candidates most commonly scored higher on. Market and quality were less well answered, which may be due to lack of familiarity. Where specification criteria do not appear in the coursework element of the subject extra time may be needed to ensure candidates understand the terms.

(bi) & (bii)
Most candidates were able to give at least one reason why paper and varnishing were suitable for the board game for each part.

(c)
One of the main reasons for candidates not gaining higher marks for this question was that they repeated the properties or reasons using different phrases.

(d)
The most common reason for candidates not gaining marks on this question was that they gave tests related to the design stage, not the manufacture stage. Checks such as making sure the spelling is correct would be completed before the card was sent to manufacture.

(e)
There were a full range of responses to this question. One common problem was that candidates failed to provide the second linked part of the description thereby only gaining 1 out of the possible 2 marks.

(f)
There were a full range of responses to this question. For part (i) the most common reason for candidates not scoring full marks was to repeat elements of the questions. For example a typical answer may have been "There are no sharp edges therefore it is safe for users". This would only gain one mark for the statement "There are no sharp edges". An example of an answer that would gain both marks would be "There are no sharp edges therefore the user cannot cut themselves". This may be a subtle difference but it may help future candidates' performance if they are aware of this common issue.

GCSE Design and Technology: Graphic Products
Principal Examiner's Report - June 2008
3972, Paper 2H

Question 1

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(e)
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Question 2

(ai)
There were a wide range of answers. Significant number of candidates gave the names of incorrect commercial printing processes. This might indicate that candidates are aware of the technicality of various processes, but not their application. This is supported by the number of candidates that answered question (bii) correctly.

(aii)
The majority of candidates could correctly identify one valid property of a glue stick. There tended to be fewer candidates that went on to give the linked justification.

(bi)
There were a wide range of answers to this question.

(bii)
The style of this question was new, in that it asked candidates for technical knowledge of a process. The question tended to be well answered, which may reflect the way commercial printing processes are taught.

(biii)
Laminating is a process most candidates are familiar with. Again the main reason for candidates not scoring full marks was a missing linked second part.

(c)
There were a wide range of answers to this question. Where candidates failed to gain both marks was often due to repeating the same point using different words.

Question 3

(a)(i)
The most common incorrect answers related to cost and strength.

(a)(ii)
There were a wide range of answers to this question.

(b)(i)
The most common answer given by candidates was that acetate was transparent.

(b)(ii)
Most candidates gave answers that related to the "bumps" increasing grip therefore making the lid easier to remove. When candidates did not score full marks it was frequently due to missing out comments about removing the lid, even though they had identified the extra grip.

(c)(i)
Most candidates were familiar with properties of polypropylene, or at least properties of plastics generally.

(c)(ii)
It would seem that most candidates are familiar with the problems associated with writing on plastic with pens. The most common incorrect answers related applying the graphics manually instead of printing them.

In previous years a lack of subject knowledge was the main reasons candidates failed to score higher marks. As the subject has developed teachers have addressed this issue. It may be the examination technique is now the area where candidates can make the biggest improvement to their performance.

GCSE Design & Technology: Graphic Products
(Full Course: 1972)

Grade Boundaries – Summer 2008

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2008 examinations.

(Foundation Tier out of 100)

C	D	E	F	G
57	46	36	26	16

(Higher Tier out of 100)

A*	A	B	C	D	E
82	72	62	52	42	37

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2008 examination.

(Coursework 01 out of 102)

A*	A	B	C	D	E	F	G
92	80	68	56	45	34	23	12

(Paper 2F out of 88)

C	D	E	F	G
58	48	38	28	18

(Paper 2H out of 88)

A*	A	B	C	D	E
65	57	49	42	35	31

GCSE Design & Technology: Graphic Products
(Short Course: 3972)

Grade Boundaries – Summer 2008

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2008 examinations.

(Foundation Tier out of 100)

C	D	E	F	G
57	46	35	25	15

(Higher Tier out of 100)

A*	A	B	C	D	E
78	69	60	51	40	34

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2008 examination.

(Coursework 01 out of 84)

A*	A	B	C	D	E	F
76	66	56	46	37	28	19

(Paper 2F out of 44)

C	D	E	F	G
28	23	18	13	8

(Paper 2H out of 44)

A*	A	B	C	D	E
31	27	23	20	16	14