

Examiners' Report Summer 2007

GCSE

GCSE Design & Technology Graphic Products (1972/3972)

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Summer 2007

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GCSE Design & Technology: Graphic Products

Principal Moderator's Report June 2007

Unit 1972, Paper 01 (Coursework)

General Comments

There were no significant issues with centres producing work that is inappropriate for this level or specification. Most candidates understand the need to evidence 2 and 3D design work in both portfolio and making. There are some exceptions to the rule, usually due to centres being new to the course being unable to attend INSET events or having not read the coursework guidance materials or this report.

The majority of work submitted for was focused on the assessment criteria, appropriately presented on 18-25 sides of A3 and structured to represent the demand required at KS4. The majority of centres understand the requirements of a 'graphic product' and the necessity to ensure the outcome has both 2D and 3D elements. Some centres still feel the need to produce a separate 2D element, even when the 3D element has an inherent 2D aspect. Unlike AS and A level, it is acceptable to submit a 2D element that is part of the final 3D model, such as the graphics or logo that may be presented on a shop or bar front as part of the sign. In fact, as long as the 2D element can be evidenced separately in the design and development work then it is acceptable. The main problems for centres this year were with the selection of a task that had the requisite demand for the level. Some candidates submitting too simple an outcome, such as a birthday cards, or a very simple packaging item. Despite this however, more teachers than in previous years understood the marking criteria and marked candidates in line with Edexcel's standard.

Administration

Most centres followed the administration procedures without difficulty, however, the moderation team did raise the following issues after this year's moderation.

Addition errors were common amongst the samples sent to the moderators. It is essential that centres check the marks entered on the CMRB's carefully so that candidates are not disadvantaged. It is also important to ensure that marks are clearly identifiable on the CMRB's.

In most cases the centres submitted coursework appropriately bound and in the required format. However, some centres did not clearly label the individual candidates' work. If there is then no means of identifying the project folder it then causes a considerable delay to the moderation process.

It is useful if the page numbers are added, especially where centre annotation refers to page numbers. Most centres offered annotation, which was informative, and useful

Some centres had to be contacted for further samples of projects, having only sent the projects indicated on the OPTEM form.

Project Selection

Teachers who know their individual candidates should decide on the best approach for project choice differentiating according to any combination of ability, interest, experience or facilities within the centre. The use of 'class directed projects' this year led to a very formulaic approach to coursework submission. Some centres set a 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 high 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.

Where candidates found difficulty incorporating 2D or 3D elements into their work, the topics have included CD covers, corporate stationery, menus, posters, designs for t-shirts/clothes, comics, books and maps. These products 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 requirement. The inclusion of signage, menus or other advertising paperwork usually meet the requirements with restaurant/bar design. Playgrounds can have user maps or plans of the parks intended to be displayed in the park.

It is also important to ensure that the project selected for the coursework element is appropriate to the level of demand. Simplistic KS3 type projects do not allowed candidates to access the full range of marks available. This links in to my previous comments about the differentiation, where candidates' limited ability may benefit from the more structured approach of a 'set' low demand project. Higher ability candidate may need the freedom to explore more demanding open-ended projects in order to access the full range of marks available.

Needs

Where centres gave candidates a design brief, either individually or as a group brief, it was unusual to see any justification of need for the problem, or indeed any connection to a user or market group.

Information

Centres generally assessed this section very well. It should be noted that to achieve higher marks more than two sources of research are required and the research needs to be related to 'needs' and used to inform decisions.

Specification

If a candidate's specification is lacking it makes it difficult for them to compare their design ideas to the specification, and to test and evaluate the end product effectively. Candidates 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 usually because of a lack of a 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 context of the problem.

Ideas

There was little evidence candidates exploring different aspects of 'ideas'. Where evidence of 2D and 3D designs was offered candidates performed well.

Develop

Many candidates did not use this section to take designs on towards a final solution. Many candidates produced a clear initial design section and settle on one of those ideas as a final solution. It is appropriate at this stage to use CAD as a form of modelling and communication of 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. However, it must document the 2D and 3D elements if it is to be constructed.

Review

This section was 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 about their own point of view.

Written Communication

Centres should encourage their more able candidates to use specialist vocabulary in order to access higher marks.

Other Media

Candidates performed well using a wide variety of graphical skills in the presentation of their coursework. There was evidence of the use of other media to suggest that candidates had been 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 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. It should be noted that expensive CAD packages are not necessary to achieve high marks in this section though use of ICT in the development of design solutions is. At the simplest level this could be the use of Microsoft 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

Candidates rarely achieve the high marks in this section. It states clearly in the assessment criteria that the use of a systems diagram is required, for part of the manufacturing process at least. In addition, to achieve high marks candidates must

indicate the Input, Process and Output boxes and demonstrate the appropriate use of feedback in the use of performance checks. A the lack of the labelling 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 candidates 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

Schedules were often be in the form of Gantt diagrams 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. Retrospective time plans are not admissible as planning tools; it is necessary to prepare the plan in advance of the making activity. Carefully prepared planning charts can gain high marks if a variety of information is included in them. Sometimes systems and control work can be gained as well as planning, at others 'select and use' information can be documented.

Industrial Applications

This assessment category was quite often under-marked. Where candidates documented the use of a manufacturing process that is recognisable as a technique used in industry then they scored high marks. Processes that were often overlooked included 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 acceptable industrial techniques as are 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 can only score low or medium marks. It is not required that candidates explain the process of industrial techniques, such as printing etc, if they have used a particular process during manufacture.

Select and Use

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 skillful use of these tools can be ascertained from photographs in the CMRB or throughout the portfolio. In some cases the only evidence available was in the photograph 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 the quality of manufacture has already been allocated marks in the 'select and use' section, this section focuses on the accuracy of manufacture in relation to the final proposal. Too many centres try 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. 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. Modifications can be made during manufacture, but reference would normally be made to these at an appropriate point.

Work Safely

Where there is no evidence in a candidate's 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 using key processes or in the highlighting of safety considerations through the planning or flowchart.

Test and Checks

There needs to be evidence of candidates devising tests that can be used to assess whether the specification has been met for the final product. Evidence of using these tests, usually through the use of photographs, is needed to achieve high marks. 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 and measurable points need to be included as well as aesthetic or opinion based assessment.

Evaluate

Better candidates used the previously acquired test results in their evaluative commentary. However, the main aspect missing from the majority of evaluations was the lack of justification or objective support given to comments made. Opinions must be backed with reasons and be connected to the testing that has already taken place.

Modifications

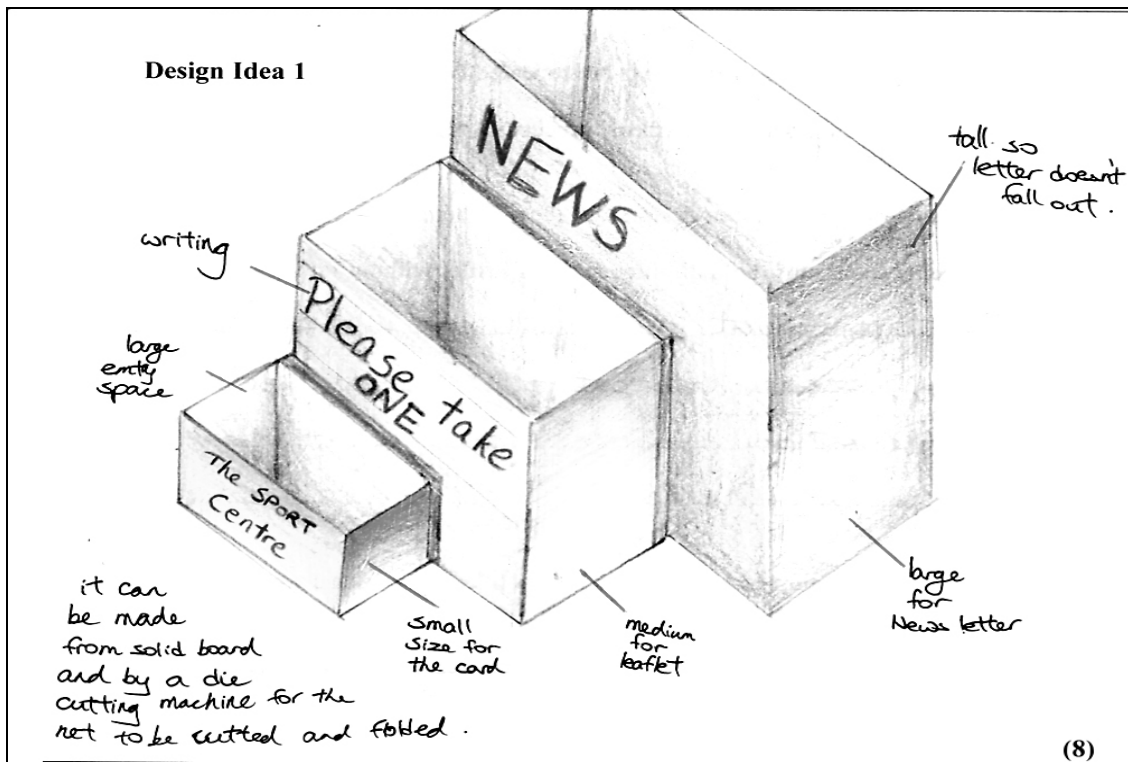
Where candidates achieved high marks they offered more than one change that connected to the results of tests and appeared from suggestions in the evaluation. Sketches were the commonest method of communication here, and some candidates even modelled the changes using either ICT or 3D models.

GCSE Design & Technology: Graphic Products Principal Examiner's Report June 2007 Unit 1972, Paper 2F

General Comments

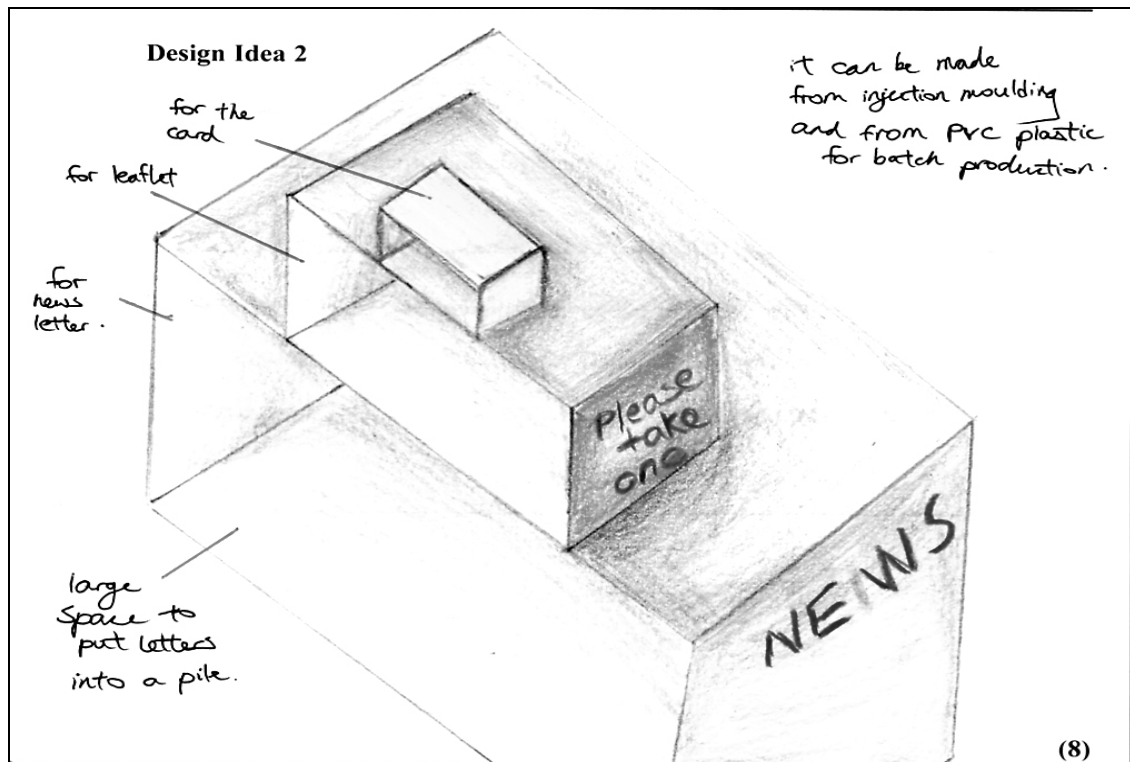
These comments pertain to both the foundation and higher tiers. This year there was a change to the requirements of the design question in both tiers. In previous years there has been evidence that many candidates focus on the quality of the drawings they produce rather than the content. Last year's report to centres contained examples of this. This has a detrimental affect on the marks students gain. This year candidates were instructed not to use colour on the drawings. This was to encourage candidates to focus on activities that gained marks.

An example answer where the candidate did not follow these instructions is shown below.



The black and white format of this report limits the ability to show the care, and hence the time taken, with which the candidate rendered the surfaces of the three boxes for each card. Each face of each box was a different colour. The candidates answer is well drawn but could be improved with better annotation.

The candidates' second design idea is shown below.



This design solution is essentially the first idea rotated 90 degrees. Again the drawing was very carefully rendered. This candidate appears to have given greater attention to producing design drawings that look good, instead of focusing on producing two technically different design solutions.

The instruction not to use colour helped to guide most candidates towards activities that had the potential to gain marks.

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

Centres are reminded of the importance of the marking guidance published in the mark schemes. This is included below for reference.

Question 1

(a)

The first three items were easy for candidates to correctly identify. The airbrush 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 laminator was misinterpreted by some candidates. The three sheets entering the front of the object and one leaving were intended to help candidates. Where candidates identified the item as a printer or plotter cutter they were credited with a mark for the use.

(b)

Vacuum forming appears to be a process that most candidates are familiar with. Where candidates failed to gain marks it was frequently for generic comments, such as 'turn on the machine'.

(c)

Candidates were provided with information in the drawing relating to the shape of a mould. It required candidates to use this information and link it to their knowledge of the process. When approaching questions in this style candidates should be encouraged to use their time to think carefully about the information they are being presented with.

(d)

Candidates are very familiar with CAD and its advantages. Where some candidates failed to gain the marks was due to giving generic advantages of CAD rather than advantages related specifically to designing faster.

(e)

As with CAD, email is a familiar topic for candidates. The most frequent reasons for candidates failing to score both marks was the second answer being a repeat of the first. For example a candidate may write an answer thus:

1 It costs less than posting it.

2 You don't have to pay for a stamp.

These are different ways of saying the same thing and in this case only one mark can be given.

(f)

The lack of a need for subject specific knowledge helped access here.

Question 2

(a)(i)

The most common answers that did not gain credit related to 'durable' meaning strong or hard.

(a)(ii)

There was a wide range of valid answers to this question. Frequently candidates used the word 'durable' from the previous part. This ignored the requirement of giving 'two more' properties and as a result marks were lost. This illustrated the need for candidates to carefully read the questions.

(a)(iii)

The most frequent correct answers related to weight and damage by weather.

(b)

This question elicited a wide range of responses.

(c)(i)

The most common correct answer given by candidates recognised the benefits of the smooth surface associated with a drawing board. The requirement to provide a linked second part to an 'explain' question was not attempted by most candidates.

(c)(ii)

The most frequent correct answers related to having backup copies and to try out new ideas.

(c)(iii)

This question elicited a wide range of responses.

(d)(i)

Most candidates appeared to be familiar with the context of lights failing. From this they could deduce valid reasons.

(d)(ii)

The role of the British Standards Institute appears to be well taught. Candidates' answers to this question often repeated the same information, therefore only allowing one mark to be scored.

(e)

Candidates scored well in this question when they related their answers to environmental issues. Other issues, for example those linked to morals, were less familiar to candidates.

(f)

Candidates responded with a wide range of answers to this question. The most common correct answers related to access and quality of information. The most common incorrect answers related to costs and an assumption that the internet is universally available.

(g)

The most common invalid answers were where candidates gave non specific comments, such as 'it was bad for the environment'.

Question 3

(a)

There is an impression that centres could use two different strategies to improve candidate performance.

Where candidates are performing in the lower grade ranges their ability to communicate through drawing was frequently a factor that prevented scoring higher marks. It may be appropriate for this group of students to focus on improving these skills. For example, undertaking case studies of existing products may help improve the skills required to answer this question.

Where candidates are performing in the higher grade ranges the lack of these communication skills was less evident. At these levels producing technically different design solutions that target all the specification points was a limiting factor. For this group of candidates practicing examination style questions may be more useful.

The guidance below appeared in last years report, but it is still a useful guide. A possible method of answering this design question would require candidates to:

- read the question carefully all the way through
- identify existing products they are familiar with that might solve the problem. Could these be adapted to solve the design task?

- read the question again. Will the ideas thought of in stage 2 work?
- read the specification points and identify eight separate marks, then underline them
- think of two very different materials and processes to make the designs from
- think of two very different shapes for the design ideas
- check again their thoughts against the specification points.
- 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.
- repeat step 8 for the second design idea to make sure that each point is different.
- 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.

(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)

The specification points relating to 'market' and 'quality' were new this year. These appeared to be less familiar to candidates than form, function, user requirement and budget.

The specification document indicates that candidates should, 'Use essential criteria to judge the quality of a product, ie how it looks, how it performs, its function, the needs and values of users and the market, moral, cultural and environmental considerations, the materials and processes used, safety and value for money'. It may be useful for centres to make sure candidates are familiar with all the areas listed.

(b)(i),(b)(ii)

For acrylic the most frequent incorrect answers related to cost and ease of use.

For vacuum forming the most frequent incorrect answers related to 'cheap' and 'easy'.

(c)

There was a wide range of responses to this question. It appears to be a material candidates are familiar with.

Candidates often gave two properties but did not provide a valid reason why this made solid board suitable. Sometimes they repeated one property but gave a different description of it eg saying it was 'durable' and 'long lasting'.

The most frequent answers that did not gain credit related to recycling and being commonly available. This gives the impression that candidates do not consider the material in a commercial context but the context of their own use of it.

(d),(e),(f)

These questions gained a wide range of valid responses. Where candidates failed to score full marks it was frequently due to the lack of a second valid part to an 'explain' question.

GCSE Design & Technology: Graphic Products

Principal Examiner's Report June 2007

Unit 1972, Paper 2H

Question 1

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The specification points relating to 'market' and 'quality' were new this year. These appeared to be less familiar to candidates than form, function, user requirement and budget.

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Question 2

(a)(i)

The majority of candidates were able to correctly answer this question. Where candidates failed to score marks it was often because they drew a net of the box instead of corrugated card. Candidates that had used previous papers to practice examination technique and questions should have had no problems with this question because it has appeared before.

(a)(ii)

This question required candidates to compare two materials. This is a more complex task than giving the properties of a single material.

Where candidates failed to score marks it was commonly because they gave properties common to both materials eg that it was recyclable.

(b)

Where candidates failed to score marks it was often because the advantage they had given was common to both sources eg being portable or having colour images.

It may be that candidates would benefit from more experience in comparing materials, processes and equipment.

(c)(i)

Candidates are very familiar with CAD and its advantages. Some candidates failed to gain the marks due to giving generic advantages of CAD rather than advantages specifically related to designing faster.

(c)(ii)

A surprising number of candidates found this question difficult.

Incorrect answers came from candidates not being aware of the correct name for the tools or giving examples of generic equipment such as goggles or gloves.

(d)

Candidates did not seem familiar with the screen printing process. This is an example of a question whose content cannot be answered by candidates that have not studied the technical areas specific to Graphic Products in sufficient depth.

(e)(i) and (e)(ii)

Many candidates failed to gain marks for these questions. This may have been due to a lack of technical knowledge again.

As has been identified in previous reports this lack of knowledge has often resulted in question 2 being the part of the paper where candidates score their lowest marks.

(f)

While this was a topic that had not appeared in an exam paper before many candidates were able to demonstrate knowledge and understanding gained from other areas to deduce at least one valid answer to this question.

(g)

Lay planning is a topic that has featured several times in past papers, in both tiers. It would appear to be an easy concept for candidates to understand if they have had access to previous question papers and mark schemes.

(h) CIM is a complex area and many candidates failed to score full marks. The most frequently credited answers related to CAD and CAM.

While they could frequently identify at least one advantage the majority of candidates failed to provide the second linked part of the 'explain' question.

Question 3

(a)

The majority of the comments that were made for the design question on the foundation tier can equally be applied to the higher tier. The most significant difference was that on the higher tier candidates ability to communicate graphically was not a limiting factor.

A full range of solutions consisting of different styles, materials and processes were demonstrated.

The most frequent source of candidates failing to score marks came from the second bullet point. This was the need for the display to hold at least 100 leaflets and that they should be easy to remove. Where information, such as a dimension, is given in the stem of the question candidates will be expected to make use of it in their design ideas. Candidates often produced designs where there was no explicit evidence to indicate the ability to either hold 100 leaflets or allow them to be removed individually.

(b)

Again, the majority of the comments that were made for the design question evaluation on the foundation tier can equally be applied to the higher tier.

Question 4

(a)(i) The reasons for polyethylene and paper were most frequently correctly given. The reason for the inclusion of aluminium was less well answered.

Candidates commonly gave incorrect answers related to temperature and freshness.

(a)(ii)

Candidates may have been able to answer this question with some knowledge of the generic properties of most plastics.

Where candidates gave incorrect answers they were often related to the form of the cap, rather than the material it was made from.

(b)(i)

Relatively few candidates seemed to possess sufficient knowledge of the airbrush to be able to give a full, two part, answer to this question.

(b)(ii)

This was another question where a number of candidates gave repetitive answers.

A typical answer may have had comments such as the size of the image could be changed and the image could be altered. Both of these stem from the same advantage of being able to edit the scanned image.

(b)(iii)

This question gained a full range of both valid and invalid responses.

(c)

This question was well answered by most candidates.

Frequent incorrect answers related to general advantages of CAD, instead of how it can reduce the cost of production.

(d)

Email is a concept that the majority of candidates appear to be conversant with. This allowed access to the full range of marks. A significant number of candidates failed to read the question carefully and gave advantages rather than disadvantages. This is a perennial problem and only by continued stressing of the need to read the question carefully will the number of students who succumb to this error be reduced.

(e)

Where candidates linked this question to their knowledge of environmental issues the question tended to be well answered.

Candidates that gave non specific answers tended to explain the words 'sustainable' and 'technology' without linking them to society.

(f)

The majority of candidates only considered negative reasons for contacting a manufacturer. While this gained marks centres may consider explaining to candidates reasons other than complaints.

(g)

This question extracted a full range of responses.

Where candidates failed to score marks it was often due to explaining the meaning of the symbol rather than the multicultural reasons for its use.

Conclusion

As with previous years' papers a big factor preventing candidates scoring higher marks was a lack of subject specific technical knowledge. This was the focus of the INSET programme that was delivered and was indicated in previous Principal Examiners Reports.

Both foundation and higher tier candidates should be taught strategies that will help them to develop technically different design ideas. This should focus on the form of the ideas and the methods and materials of manufacture.

The evaluation of the design ideas may be the area where the biggest increase in marks can be gained for the least expenditure of time.

Suggestions to help improve candidates' performance.

- Use posters around the classroom giving candidates information about the correct names of relevant items of tools and equipment.
- Use exam papers and marks schemes from previous years to prepare candidates.
- Ensure candidates are aware of the frequency of the problems caused by failing to read questions properly.
- Ensure that the specialised areas of the specification are taught.

- Ensure candidates are aware of the unique properties of the various materials in the specification that distinguish them from each other.
- Ensure candidates are trained to recognise answers that repeat themselves.
- Group together content from the specification and deliver taught lessons about the grouped items, eg a lesson about all the plastics listed in the specification.
- Practice the use of the suggested technique to answer design type questions.
- Practice evaluation of design ideas.
- Use examples of existing graphic products to practice writing specification points.
- Structure revision notes about processes and materials to include the areas of description, uses / properties, advantages / disadvantages.

GCSE Design & Technology: Graphic Products

Principal Moderator's Report June 2007

Unit 3972, Paper 01 (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 largely in line with Edexcel's standard although adjustment of marks was 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 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
- were presented on 14-20 sides of A4
- were structured to an appropriate level for this examination
- were realistic problems for graphic products
- were 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 using a rigidly formulaic approach. Some candidates may have been restricted by this and may have gained higher marks if they had been given a little more freedom.

Some submissions were poorly bound. 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 CMRB's 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, though many candidates failed to individualise their research. This is a common issue with centre-set projects. Candidates need to use this research in the compilation of a specification later.

Specification

This area was often adjusted as candidates 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 suggested.

Ideas

Marks were adjusted if there was 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, and consequently they failed to explore a full and realistic range or develop alternatives later.

Develop

This 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) using Microsoft Word or sophisticated software specifically designed for CAD purposes. Evaluation and technical input is also welcomed 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

A flow chart documenting the manufacture part or all of the product is required. It should be labelled Input, Process, Output, and have relevant feedback loops. The most common mistake was a failure to label the diagram at all.

Industrial Applications

This assessment category was quite often under-marked. Where candidates have documented the use of a manufacturing process that is recognisable as a technique used in industry then they have achieved the high category of marks. Processes often overlooked were 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 and, most centres recognised the need to document/evidence the selection of tools and processes used in manufacture and the quality application of those processes and tools. Where candidates were adjusted it tended to be because they failed to evidence a 2D or 3D element, either in the entire manufacture process or in their documentation. Level of demand was largely appropriate for this course.

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, candidates cannot score high marks.

Tests and Checks

Many candidates 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 accurately applied. It was common to see only one or two 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 & Technology: Graphic Products

Principal Examiner's Report June 2007

Unit 3972, Paper 2F

General Comments

The guidance and suggestions that appeared in the Full Course report equally apply to the Short Course.

Question 1

(a)

The first three items were easy for candidates to correctly identify.

(b)

Vacuum forming appears to be a process that most candidates are familiar with. Where candidates failed to gain marks it was frequently for generic comments, such as 'turn on the machine'.

(c)

Candidates were provided with information in the drawing relating to the shape of a mould. It required candidates to use this information and link it to their knowledge of the process. When approaching questions in this style candidates should be encouraged to use their time to think carefully about the information they are being presented with.

Question 2

(a)(i)

The most common answers that did not gain credit related to 'durable' meaning strong or hard.

(a)(ii)

There was a wide range of valid answers to this question. Frequently candidates used the word 'durable' from the previous part. This ignored the requirement of giving 'two more' properties and as a result marks were lost. This illustrated the need for candidates to carefully read the questions.

(a)(iii)

The most frequent correct answers related to weight and damage by weather.

(b)

This question elicited a wide range of responses.

(c)(i)

The most common correct answer given by candidates recognised the benefits of the smooth surface associated with a drawing board. The requirement to provide a linked second part to an 'explain' question was not attempted by most candidates.

(c)(ii)

The most frequent correct answers related to having backup copies and to try out new ideas.

(c)(iii)

This question elicited a wide range of responses.

Question 3

(a)

The specification points relating to 'market' and 'quality' were new this year. These appeared to be less familiar to candidates than form, function, user requirement and budget.

The specification document indicates that candidates should, 'Use essential criteria to judge the quality of a product, ie how it looks, how it performs, its function, the needs and values of users and the market, moral, cultural and environmental considerations, the materials and processes used, safety and value for money'. It may be useful for centres to make sure candidates are familiar with all the areas listed.

(b)(i),(b)(ii)

For acrylic the most frequent incorrect answers related to cost and ease of use.

For vacuum forming the most frequent incorrect answers related to 'cheap' and 'easy'.

(c)

There was a wide range of responses to this question. It appears to be a material candidates are familiar with.

Candidates often gave two properties but did not provide a valid reason why this made solid board suitable. Sometimes they repeated one property but gave a different description of it eg saying it was 'durable' and 'long lasting'.

The most frequent answers that did not gain credit related to recycling and being commonly available. This gives the impression that candidates do not consider the material in a commercial context but the context of their own use of it.

(d),(e),(f)

These questions gained a wide range of valid responses. Where candidates failed to score full marks it was frequently due to the lack of a second valid part to an 'explain' question.

GCSE Design & Technology: Graphic Products

Principal Examiner's Report June 2007

Unit 3972, Paper 2H

Question 1

(a)

The specification points relating to 'market' and 'quality' were new this year. These appeared to be less familiar to candidates than form, function, user requirement and budget.

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(d),(e),(f)

These questions gained a wide range of valid responses. Where candidates failed to score full marks it was frequently due to the lack of a second valid part to an 'explain' question.

Question 2

(a)(i)

The majority of candidates were able to correctly answer this question. Where candidates failed to score marks it was often because they drew a net of the box instead of corrugated card. Candidates that had used previous papers to practice examination technique and questions should have had no problems with this question because it has appeared before.

(a)(ii)

This question required candidates to compare two materials. This is a more complex task than giving the properties of a single material.

Where candidates failed to score marks it was commonly because they gave properties common to both materials eg that it was recyclable.

(b)

Where candidates failed to score marks it was often because the advantage they had given was common to both sources eg being portable or having colour images.

It may be that candidates would benefit from more experience in comparing materials, processes and equipment.

(c)(i)

Candidates are very familiar with CAD and its advantages. Some candidates failed to gain the marks due to giving generic advantages of CAD rather than advantages specifically related to designing faster.

(c)(ii)

A surprising number of candidates found this question difficult.

Incorrect answers came from candidates not being aware of the correct name for the tools or giving examples of generic equipment such as goggles or gloves.

(d)

Candidates did not seem familiar with the screen printing process. This is an example of a question whose content cannot be answered by candidates that have not studied the technical areas specific to Graphic Products in sufficient depth.

Question 3

(a)(i) The reasons for polyethylene and paper were most frequently correctly given. The reason for the inclusion of aluminium was less well answered.

Candidates commonly gave incorrect answers related to temperature and freshness.

(a)(ii)

Candidates may have been able to answer this question with some knowledge of the generic properties of most plastics.

Where candidates gave incorrect answers they were often related to the form of the cap, rather than the material it was made from.

(b)(i)

Relatively few candidates seemed to possess sufficient knowledge of the airbrush to be able to give a full, two part, answer to this question.

(b)(ii)

This was another question where a number of candidates gave repetitive answers.

A typical answer may have had comments such as the size of the image could be changed and the image could be altered. Both of these stem from the same advantage of being able to edit the scanned image.

(b)(iii)

This question gained a full range of both valid and invalid responses.

Conclusion

As with previous years' papers a big factor preventing candidates scoring higher marks was a lack of subject specific technical knowledge. This was the focus of the INSET programme that was delivered and was indicated in previous Principal Examiners Reports.

Suggestions to help improve candidates' performance.

- Use posters around the classroom giving candidates information about the correct names of relevant items of tools and equipment.
- Use exam papers and marks schemes from previous years to prepare candidates.
- Ensure candidates are aware of the frequency of the problems caused by failing to read questions properly.
- Ensure that the specialised areas of the specification are taught.
- Ensure candidates are aware of the unique properties of the various materials in the specification that distinguish them from each other.
- Ensure candidates are trained to recognise answers that repeat themselves.
- Group together content from the specification and deliver taught lessons about the grouped items, eg a lesson about all the plastics listed in the specification.
- Practice the use of the suggested technique to answer design type questions.
- Practice evaluation of design ideas.
- Use examples of existing graphic products to practice writing specification points.
- Structure revision notes about processes and materials to include the areas of description, uses / properties, advantages / disadvantages.

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

Grade Boundaries - Summer 2007

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2007 examinations.

(Foundation Tier out of 100)

C	D	E	F	G
56	45	34	24	14

(Higher Tier out of 100)

A*	A	B	C	D	E
82	71	60	50	41	36

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2007 examination.

(Coursework 01 out of 102)

A*	A	B	C	D	E	F	G
92	80	68	56	45	34	23	17

(Paper 2F out of 88)

C	D	E	F	G
53	42	32	22	12

(Paper 2H out of 88)

A*	A	B	C	D	E
64	55	46	37	31	28

**GCSE Design & Technology: Graphic products
(Short Course: 3972)**

Grade Boundaries - Summer 2007

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2007 examinations.

(Foundation Tier out of 100)

C	D	E	F	G
56	45	34	23	12

(Higher Tier out of 100)

A*	A	B	C	D	E
83	71	59	48	39	34

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2007 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
25	20	15	10	5

(Paper 2H out of 44)

A*	A	B	C	D	E
31	26	21	17	14	12

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