

Examiners' Report Summer 2009

GCSE

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

Edexcel is one of the leading examining and awarding bodies in the UK and throughout the world. We provide a wide range of qualifications including academic, vocational, occupational and specific programmes for employers.

Through a network of UK and overseas offices, Edexcel's centres receive the support they need to help them deliver their education and training programmes to learners.

For further information, please call our GCE line on 0844 576 0025, our GCSE team on 0844 576 0027, or visit our website at www.edexcel.com.

If you have any subject specific questions about the content of this Examiners' Report that require the help of a subject specialist, you may find our **Ask The Expert** email service helpful.

Ask The Expert can be accessed online at the following link:

<http://www.edexcel.com/Aboutus/contact-us/>

Summer 2009

Publications Code UG021222

All the material in this publication is copyright

© Edexcel Ltd 2009

Contents

GCSE Design & Technology: Graphic Products Examiners' Reports

Unit 1972 Full Course	Coursework Paper	05
	Foundation Paper	13
	Higher Paper	27
Unit 3972 Short Course	Coursework Paper	36
	Foundation Paper	39
	Higher Paper	42
Grade Boundaries, Full Course		44
Grade Boundaries, Short Course		45

**GCSE Design and Technology: Graphic Products
Principal Moderator's Report - June 2009
1972, Paper 01 (Coursework)**

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. In fact the moderators have reported that the centres appear to have a much better understanding of the assessment demands which has resulted in marking that is closer to the board's standard.

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. It is pleasing to note that it is rare to have work submitted that does not meet these requirements, indeed the sight of very large portfolios and work with multi-volumes is very uncommon.

As would be expected most 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 (which is welcomed if the 3D element is less demanding), 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 will be acceptable. The issue that most often causes problems 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.

Nevertheless, 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. The most common projects seen tended to focus around perfume bottles and packaging or architectural design (interiors and exteriors). Concept product modelling appears to be less popular even though we saw some excellent examples of it.

Administration

As in previous years would appear that many centres have some difficulty in following the administration requirements correctly. There were problems reported by moderators regarding incorrectly completed paperwork.

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. Unfortunately, many centres are instead photocopying very old documents hence poor reprographics which often hinder assessment.

Errors of addition 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 the 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, relying upon the attaching of the CMRB to the front cover of each candidate. **This is extremely difficult for the moderator as it is necessary to detach the CMRB prior to processing**, if candidates are not identified elsewhere on the project folder it then causes a considerable delay to the moderation process. Please ensure that all portfolio work is clearly labelled, in addition to 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 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. Where the OPTEMs fails to select the top and bottom candidate, they should always be added to the sample to be sent to the moderator. Indeed an increasing number of centres were 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 help 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 the 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 the candidates have 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 2 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 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 again completed more successfully than in previous years. Centres usually attempted to establish a need and even 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. Where the specification is lacking it builds in an inherent weakness in the candidates' ability to compare their design ideas to the specification, and 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 less accurately. There were discrepancies in teacher assessments, 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 six ideas followed by six 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. Candidates employed a variety of approaches to their design work but some failed to generate proposals which embodied real technical differences. Some centres produced fantastic design pages with excellent graphical skills and a variety of media. Unfortunately, some felt that they would compensate for their pupils lack of ability by using totally ICT. This was a shame as a balance between the two would be preferable.

Develop

It is pleasing to note that candidates completed this section of the coursework more successfully. Many centres have appreciated the need to use this section to take designs on 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, showing no changes to the design, no modelling or 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 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 as appropriate. However it must document the 2D and 3D elements to be constructed or marks could be jeopardized in the 'Making' section.

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 about 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 centres assessed this assessment criterion accurately. Centres should encourage the more able candidates to use appropriate specialist vocabulary in order to access the higher level. It is not sufficient to just spell simple statements correctly; a higher level of demand is required in this as in other areas.

Other Media

In this section candidates performed well and centres marked accurately. Graphics 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 being 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 also 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 on 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, of course, 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 continuing evidence that centres still fail to understand the demands of this section of the mark scheme. It was 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 lack of the labelling of the Input - Output boxes that caused most problems. Candidates sometimes labelled the diagrams, but did not label the inputs or outputs correctly. It is also not sufficient to offer lists of activities in a table with Input - Output columns. Most 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 take a more serious look at forward planning for their work, too many offered work that is retrospective or complete to unrealistically accurate time constraints, with no changes to the manufacturing process, because it had been 'perfectly' planned and timed. A well-constructed schedule can be used very effectively to evidence 'Select and Use' processes and tools and health and safety issues.

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 being over looked 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 acceptable industrial techniques as are the use some CAD packages in the production of the 2D element. Where candidates only document the possibility of using these techniques rather than actually use 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 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 too a high degree of skill.

Making

As the quality of manufacture has already been allocated marks 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 I am pleased to note there has again been increase in the number of centres recognising 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. Most candidates evidence some aspect of personal safety understanding but not always extending this to the safety of others.

Test and Checks

This section continues to be a cause of 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 in 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 cases candidates used the previously acquired test results in the evaluative commentary produced 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.

**GCSE Design and Technology: Graphic Products
Principal Examiner's Report - June 2009
1972, Foundation Paper 2F**

The format of this year's examination papers follows that of previous years.

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

Question 1(a) Mean score 7.03 from 10 marks

The safety ruler shown as the first item was frequently described as a ruler, which was not sufficient to gain credit. Where candidates did not correctly identify the safety ruler they often still gained the second mark for describing its use e.g. making a statement related to measuring.

The cutting mat and camera were correctly identified by the majority of candidates. The scalpel was often incorrectly identified as either a knife or craft knife. Again they gained the second mark for describing its use e.g. for cutting.

Given the similarity in appearance a plotter/cutter and laminator either answer was credited as being correct.

At last year's inset meetings the following approach was suggested as a method of improving results in this question.

- Identify possible subject content from the specification/ previous examinations.
- Identify tools or equipment that might be difficult to identify. Probably items such as pencils do not need teaching, but more specialist equipment will do.
- Collect images of different forms of the tool or equipment.
- Produce flash cards or presentations to use to test students' recognition.

Question 1(b) Mean score 2.34 from 3 marks

There were a wide range of answers (from the choices given) to the three different parts of the question. CAD/CAM was the most frequent incorrect answer for parts 1 and 2. Painted was the most frequent incorrect answer for part 3.

Question 1(c) Mean score 0.94 from 2 marks

There were a wide range of answers (from the choices given) to the two different parts of the question.

Question 1(d) Mean score 0.40 from 3 marks

CIM is an area not widely understood by candidates. While it may be a complex topic, previous examination papers have contained questions very similar to this one. Past papers provide a good indication of the level of understanding candidates are anticipated to possess.

Question 1(e) Mean score 0.63 from 2 marks

The comments below are from last years report.

"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."

This topic is still not well understood by a significant proportion of the candidates. As it is a relatively simple concept small amounts of revision should reap significant improvements in marks gained by candidates.

There are essentially three main benefits of lay planning, these are:

- less materials required
- less waste produced
- quicker production.

Question 1(f) Mean score 0.19 from 2 marks

Image register and optical monitoring of ink intensity are the only two specific quality control procedures that candidates should be taught.

At foundation level this is an area that the majority of candidates are not familiar with. The apparent difficulty of the area may stem from the fact the candidates need an appreciation of colour separate printing processes in order to understand the need for image register techniques. It may therefore be appropriate for centres to combine the teaching of these quality control methods alongside the teaching of printing processes.

Question 2(a) Mean score 1.16 from 2 marks

Paper and card are materials that candidates are very familiar with. This allowed the majority them to answer these questions correctly.

Question 2(b) Mean score 0.97 from 2 marks

The mark scheme for this question contains valid answers that appear to contradict each other i.e. that a HB pencil can be either easier or harder to erase than a 2B pencil. It is dependent on the how the pencil is used, e.g. applied with force or gently; with both answers potentially being valid, both were credited.

Question 2(c)(i) Mean score 0.74 from 2 marks

This question was the first "explain" type on the foundation tier. As has been observed in previous years candidates frequently failed gain the second mark available due to the lack of a linked second part to the answer. It might be useful for candidates to link "explain" type questions to "because" type answers.

The answer below is from mark scheme;

More of the pencil is in contact with the paper. (1) This makes it quicker / smoother (1)

A candidate who had be taught to respond to *explain* questions with *because* answers might have written:

"The colour will be smoother because more of the pencil will be touching the paper"

This style of answer is not only correct and worthy of both marks, but the simple structure of "explain=because" might support foundation tier candidates gaining more marks.

Question 2(c)(ii) Mean score 1.53 from 2 marks

Marker pens are tools that candidates are familiar with. This allowed the majority them to answer this question correctly.

Question 2(d) Mean score 0.88 from 1 mark

This question had a wide range of valid answers. The majority of candidates could correctly identify a suitable piece of equipment. The most common reason for candidates not gaining the mark was due to giving answers that were not recognised as appropriate drawing equipment e.g. drawing around a cup.

Question 2(e) Mean score 0.52 from 1 mark

The most frequent incorrect answers given by candidates related to the user wearing a mask for health reasons.

Question 2(f) Mean score 1.20 from 4 marks

CAD appears in the specification with a number of different qualifying contexts. In AO1a, "Classification and selection of materials/components", and AO1b, "Preparing, processing and finishing materials", the focus is the technical use of CAD. In AO1c, "Manufacturing commercial products", the focus is how CAD systems allow faster and more flexible manufacturing. In AO3d, "Design and market influence", the focus is how CAD affects society and their own lives.

It is the technical aspects of CAD that candidates are more familiar with.

Of the three parts to question 2(f), (i) was the most frequently answered correctly. The most common incorrect answers for parts (ii) and (iii) tended to relate to technical aspects, rather than social aspects of CAD.

Question 2(g) Mean score 0.75 from 2 marks

In previous years questions relating to the PVC and the production of waste hydrochloric acid have been poorly answered by the majority of candidates. This year the mark scheme was extended to allow answers that while they were not the stated focus of the specification were deemed to be appropriate valid answers for foundation tier candidates. This increased the number of candidates gaining marks compared to previous years.

If the focus of the specification was applied strictly the only valid answer would be;

- The production of PVC produces toxic waste/ hydrochloric acid. This damages flora, fauna and objects.

It was considered these answers below should also be credited.

- PVC is made from oil. This consumes a finite resource.
- Plastic does not degrade in landfill sites. The waste accumulates.
- PVC does not get recycled because of economic/technical constraints.

Question 2(h) Mean score 2.29 from 3 marks

The majority of candidates gave correct answers to this question.

Question 2(i) Mean score 0.43 from 1 mark

Modern and smart materials is an area with which most candidates are unfamiliar. It might be that the use of common items such as photo-reactive sunglasses as a teaching tool would help to establish a wider, more accessible, candidate knowledge base.

Question 2(j) Mean score 0.51 from 2 marks

Planned product obsolescence is a topic that most foundation tier candidates are not familiar with. If candidates can form links between planned product obsolescence and environmental issues it is anticipated the successful access to the marks would increase.

Question 3 Mean score 7.55 from 24 marks

The comments below appeared in last year's report to centres. They still apply this year.

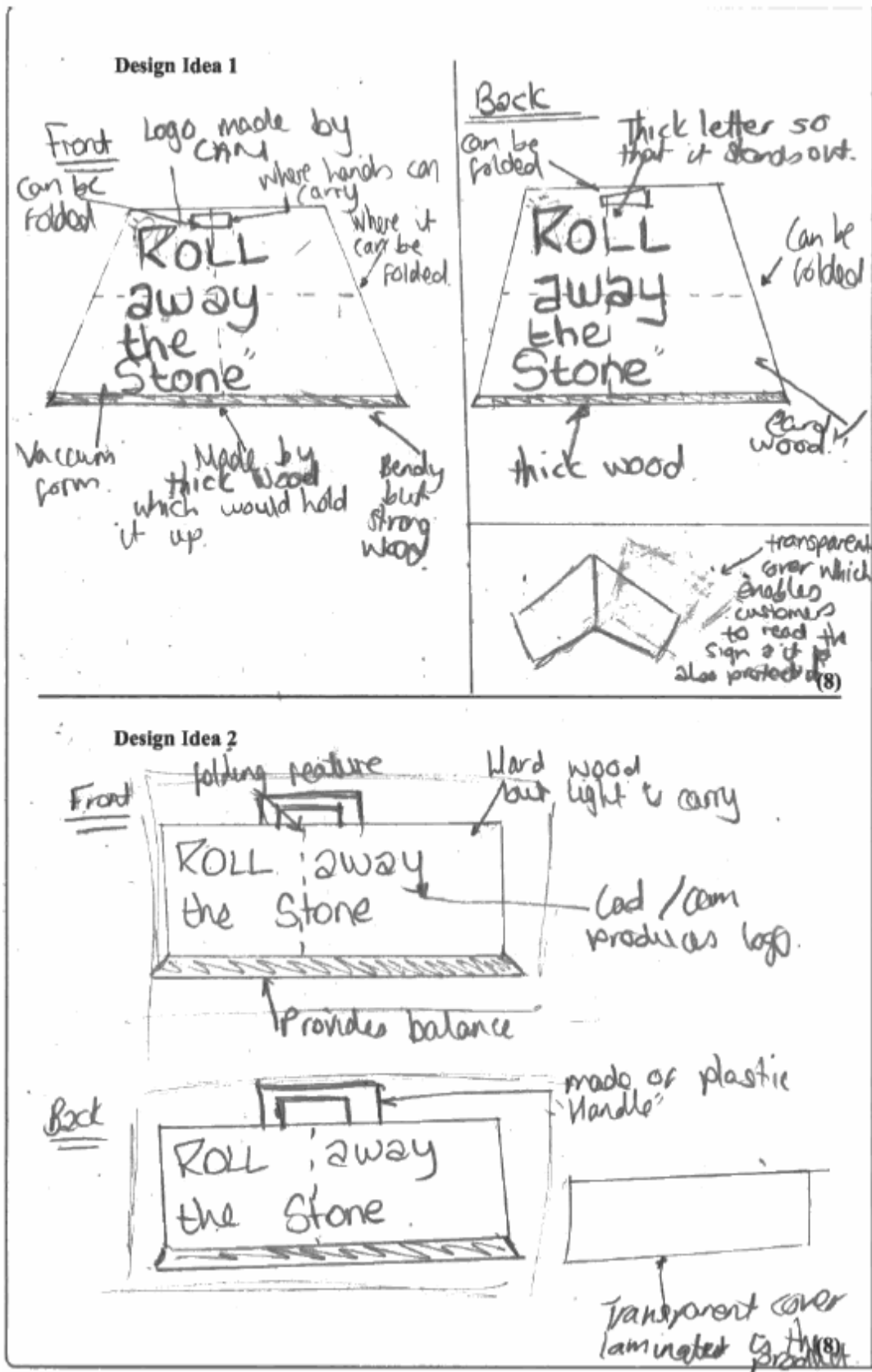
The design question followed a long established pattern. It is highly probable that if the same specification points have appeared every time in the past examinations they will appear in the future. This is not guaranteed but it would be a good starting point to practice examination techniques.

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 the 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.

In order for teachers and candidates to appreciate how the mark scheme is applied to answers there follows answers from two candidates are accompanied by comments explaining how the marks awarded were achieved.

Foundation Design Example 1



The marks awarded are considered in pairs from idea 1 and idea 2 because marks for idea 2 are dependent on the same solution not being credited for idea 1.

Specification point 1:

1. Evidence to indicate one element of the design will make it easy to carry
2. Evidence to indicate one element of the design will fold up

Design idea 1 mark 1

There is a handle on the top of the sign which would allow it to be carried. A fold line is indicated which in the horizontal plane would cause the design to collapse and in the vertical plane would not work because of the base. Therefore no mark is awarded.

Design idea 2 mark 1

There is a handle on the top of the sign which would allow it to be carried. It is a just about technically different from idea 1 to justify the award of a mark. A fold line is indicated which in the vertical plane would not work because of the base and handle. Therefore no mark is awarded.

Specification point 2:

1. Evidence to indicate one element of the design will help prevent the design being blown over by the wind.
2. Evidence to indicate one element of the design will not be damaged by rain.

Design idea 1 mark 1

The candidate indicates that the base is "thick wood" but does not explain how this would prevent blowing over. The fold lines indicated would suggest the design fall over without any wind. Therefore no mark is awarded. Had the candidate drawn a side view showing a wide base the mark would have been credited. The design is annotated to indicate a transparent cover, this is sufficient to gain the mark for part 2.

Design idea 2 mark 0

The base repeats information from idea 1, therefore does not gain credit for part 1. The only annotation linked to this spec point is a repeat from idea 1 and therefore gains no credit. While "laminated" may have been valid it is more appropriate to credit the comment for spec point 8.

Specification point 3:

1. Evidence to indicate that the name can be displayed
2. Evidence to indicate that the name can be seen from both sides.

Design idea 1 mark 2

The name is written on the front of the design idea for a mark for part one and the name is written on the back of the design idea for a mark for part 2.

Design idea 2 mark 2

The name is written on the front of the design idea and the name is written on the back of the design idea.

Specification point 4:

1. Evidence to indicate that one material indicated is suitable for a school workshop.
2. Evidence to indicate that one process indicated is suitable for a school workshop

Design idea 1 mark 2

Annotation appears to indicate "card" in the top right drawing. This gains the mark. Vacuum forming is indicated therefore a mark is awarded for part 2. While it is not clear if Vacuum forming is appropriate it is sufficient to gain the mark.

Design idea 2 mark 1

Only generic materials wood and plastic are indicated therefore no mark awarded. Laminated is stated which is sufficient to gain the mark.

Total marks for Design Idea 1: 6

Total marks for Design Idea 2: 4

Foundation Design Example 1
Evaluation

Write down the number of your chosen design idea (1 or 2) here:1.....

- (i) The portable sign must be easy to carry and fold up for storage.

This has been accomplished because I have put in a handle holder which enables the member of staff to carry it also I have put in a piece of card that is strong but can bend. (2)

- (ii) The portable sign must not fall over in wind and not be damaged by rain.

Strong piece of wood which helps the balance and contains a transparent cover to protect it from the rain. (2)

- (iii) The portable sign must display the shop name to people walking from both directions.

It has a strong piece of wood underneath it which helps it to stay upright and also contains a sides which includes the shop name. (2)

Evaluation of spec point 1 mark 0

The comment about a handle introduces no new information to that credited in the design section and therefore gains no mark. The comment "is strong" describes a property of the design but contradicts being able to fold. It lacks sufficient clarity to gain the mark.

Evaluation of spec point 2 mark 1

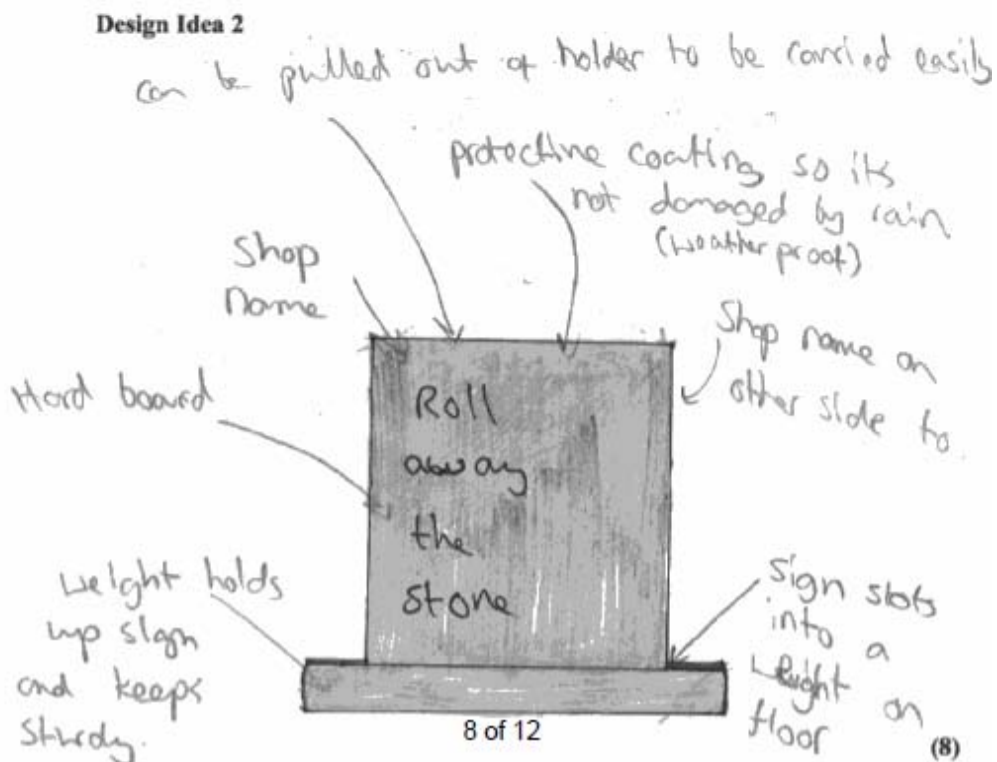
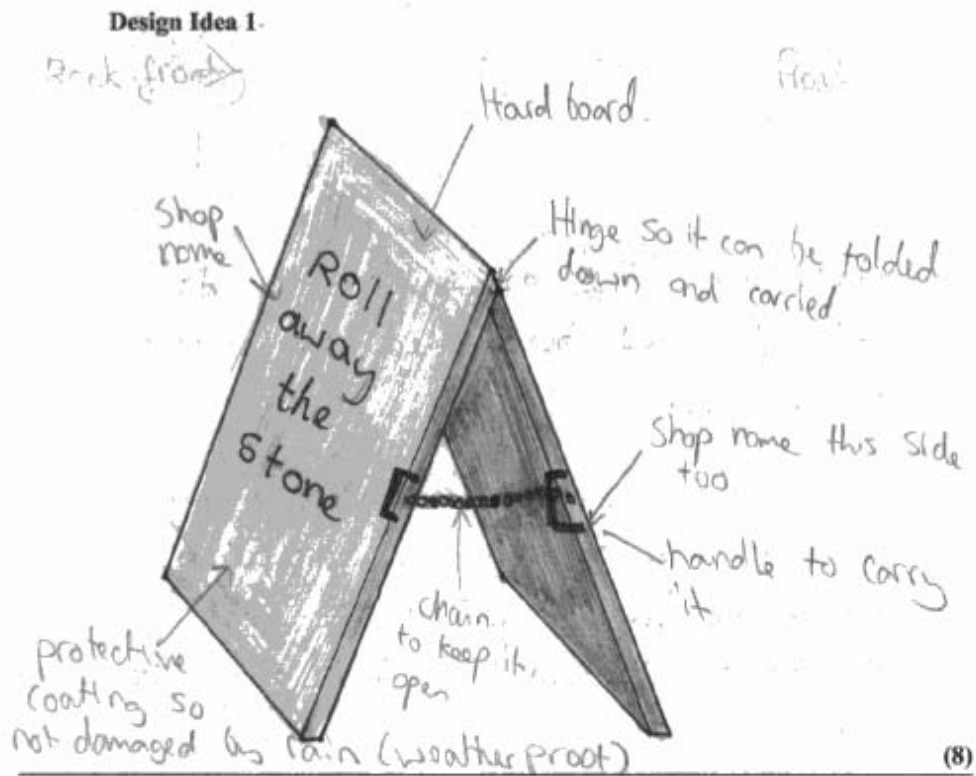
The comment about "helps the balance" describes a property of the design that did not gain credit in the design section. This just about justifies the award of the mark for not fall over. The comment about the cover introduces no new information to that credited in the design section and therefore gains no mark.

Evaluation of spec point 3 mark 0

The comments introduce no new information to that credited in the design section and therefore gains no marks.

Total marks for evaluation: 1
Total marks for question 3: 11

Foundation Design Example 2



The marks awarded are considered in pairs from idea 1 and idea 2 because marks for idea 2 are dependent on the same solution not being credited for idea 1.

Specification point 1:

1. Evidence to indicate one element of the design will make it easy to carry
2. Evidence to indicate one element of the design will fold up

Design idea 1 mark 2

There is a handle on the side of the sign which would allow it to be carried. The design has a hinge which is annotated that it allows folding.

Design idea 2 mark 2

Annotation indicates that the sign comes apart which is linked by the candidate to being easy to carry. The comment at the bottom right of the idea states that the sign slots into the base. This is sufficient to justify the mark for folding.

Specification point 2:

1. Evidence to indicate one element of the design will help prevent the design being blown over by the wind.
2. Evidence to indicate one element of the design will not be damaged by rain.

Design idea 1 mark 2

The design of the sign is inherently stable therefore sufficient to justify the mark. The design is annotated to indicate a protective coating, this is sufficient to gain the mark.

Design idea 2 mark 1

The design is annotated to show a weight on the base and comments "keeps sturdy". This is sufficient to award the mark. The only annotation link to this spec point is a repeat from idea 1 and therefore gains no credit.

Specification point 3:

1. Evidence to indicate that the name can be displayed.
2. Evidence to indicate that the name can be seen from both sides.

Design idea 1 mark 2

The name is written on the front of the design idea. Annotation indicates the name is on the other side as well.

Design idea 2 mark 2

The name is written on the front of the design idea. Annotation indicates the name is on the other side as well.

Specification point 4:

1. Evidence to indicate that one material indicated is suitable for a school workshop.
2. Evidence to indicate that one process indicated is suitable for a school workshop

Design idea 1 mark 1

Hardboard is indicated which would be suitable therefore the mark is awarded. No Process is indicated.

Design idea 2 mark 0

The only material indicated is a repeat of design 1 therefore no mark is awarded. No Process is indicated.

Total marks for Design Idea 1: 7

Total marks for Design Idea 2: 5

Write down the number of your chosen design idea (1 or 2) here: 1

- (i) The portable sign must be easy to carry and fold up for storage.

chain and hinge allows it to fold down flat and be carried. Also handles to carry it.

(2)

- (ii) The portable sign must not fall over in wind and not be damaged by rain.

chain to keep it open and protective coating on hard board so its not going to be damaged by rain (weatherspax)

(2)

- (iii) The portable sign must display the shop name to people walking from both directions.

Large clear sign on both sides made by CAD/CAM machine

(2)

Evaluation of spec point 1 mark 1

The comment about a handle introduces no new information to that credited in the design section and therefore gains no mark. The comment "fold down flat" describes a property of the design and is therefore evaluative. It gains the mark.

Evaluation of spec point 2 mark 0

The comment about the chain keeping the design open is untrue and does not link to falling over in the wind. The comment about protective coating introduces no new information to that credited in the design section. Therefore no marks are awarded.

Evaluation of spec point 3 mark 1

The candidate has describes a quality of the sign i.e. "large clear sign" and is therefore evaluative. It gains a mark. The comment about being made by CAD/CAM is developmental, not evaluative, and therefore does not gain a mark.

Total marks for evaluation: 2
Total marks for question: 14

If candidates are encouraged to mark these example answers they may begin to identify areas in their own work where performance could be improved.

Question 4(a) Mean mark 1.24 from 6 marks

(Crossover with question 1 on higher tier)

One of the most common reasons for candidates failing to score marks for this section was that some produced answers related to a real building rather than an architect's model. This illustrates that candidates need to carefully read the question.

The needs of the user and environmental considerations were generally better answered than the question related to quality.

A common reason for candidates failing to score the mark for the reason was that they tended to repeat the point they had already given using different words.

An example of this type of answer would be:

Point	The model should be made from recyclable materials.
Reason	So that the materials can be reused.

The reason in this example does not give sufficient new information to gain the second mark available.

Question 4(b) Mean mark 1.05 from 2 marks

The properties of MDF were generally familiar to candidates. Common reasons for candidates failing to gain the marks were where answers such as cheap and lightweight were given.

Question 4(c) Mean mark 0.62 from 2 marks

The reasons for using lithography were understood by many of the candidates.

Question 4(d) Mean mark 0.91 from 4 marks

There were a full range of answers to this question.

Question 4(e) Mean mark 0.74 from 2 marks

Most candidates were able to give at least one quality control check that could be carried out on the cover. Where candidates most frequently failed to score the marks was by giving single word answers such as "durability" or "strength". Without qualification of the context these answers did not provide sufficient evidence to justify the award of the marks.

Question 4(f) Mean mark 0.23 from 2 marks

The majority of candidates on the foundation tier found this question difficult. The question was about the shape of roof, not vacuum forming itself. Candidates often gave answers relating to the process without linking it to the product.

Question 4(g) Mean mark 1.23 from 4 marks

There were a full range of answers to this question.

GCSE Design and Technology: Graphic Products
Principal Examiners' Report - June 2009
1972, Paper 2H (Higher)

Question 1

Points made in Question 4 2H (crossover question) apply to the higher as well. The mean scores for the questions on the higher tier are as below:

Item	Mean
Q01a	2.64
Q01b	1.50
Q01c	1.23
Q01d	1.86
Q01e	1.25
Q01f	.85
Q01g	2.92

Question 2(a)(i) Mean score 0.48 from 1 mark

There were a wide range of answers to this question. The most common incorrect answer was letterpress. A number of candidates gave vacuum forming as their answer.

Question 2(a)(ii) Mean score 0.58 from 2 marks

Many candidates correctly drew the male part of the tool. Of those candidates that provided the appropriate drawings for the male part only a relatively small number identified the need for a female, or cushioned, surface for the raised letter to be formed into.

Question 2(b) Mean score 0.89 from 2 marks

The most common correct answers related to higher quality and more detail. Where candidates failed to gain marks was frequently due to a lack of objective comparisons with lithography for answers such as "quick, cheap"

Question 2(c)(i) Mean score 0.43 from 1 mark

The most common incorrect answer was laser cutter.

Question 2(c)(ii) Mean score 0.71 from 1 mark

Varnishing and laminating are techniques the most candidates are familiar with and hence most gained the marks from this question.

Question 2(d) Mean score 2.56 from 4 marks

There were a wide range of responses to this question. The most frequent reasons for candidates not scoring marks were the lack of the linked second part to an explain question and the suggestion that a digital camera took better quality pictures.

Question 2(e)(i) Mean score 0.05 from 1 mark

Very few candidates correctly identified the appropriate device. This level of response was expected as the question was intended to identify the highest grade candidates.

Question 2(e)(ii) Mean score 0.46 from 2 marks

There were a full range of responses to this question.

Question 2(f) Mean score 0.91 from 1 mark

The use of barcodes is an area that most candidates appear to be familiar with.

Question 2(g) Mean score 2.99 from 4 marks

Most candidates are conversant with the advantages of email and the internet. The most frequent reason for candidates not scoring full marks were either to suggest email is free (which ignores running costs) or to repeat their first answer using different wording.

Question 2(h) Mean score 0.85 from 2 marks

There were a full range of answers to this question.

Question 2(i) Mean score 0.96 from 2 marks

Candidates frequently equate CIM with CAD/CAM. While some of the advantages of CAD/CAM may be valid answers for CIM this was the most frequent reason for candidates failing to score full marks.

Question 3 Mean score 12.17 from 24 marks

In order for teachers and candidates to appreciate how the mark scheme is applied to answers there follows answers from two candidates are accompanied by comments explaining how the marks awarded were achieved.

<p>Design Idea 1</p> <p>Produced out of card board with a high & loss finish, flat flat pack pieces produced through die cutting.</p> <p>The House Graphics goes here.</p> <p>Leaflets/ advertisements goes here. (AA)</p> <p>See front to hold in advertisements and enable customer to take them away.</p> <p>Back view</p> <p>Slogan "A film for all the family" goes here.</p> <p>310 mm</p> <p>220 mm</p> <p>flat pack</p> <p>tab to connect to the next display.</p> <p>fold lines.</p>	<p>Leave blank</p>
<p>Design Idea 2</p> <p>Made from coloured acrylic pieces, each made by injection machine, due to the complex slots and hole method.</p> <p>Space for movie title & slogan, use of vinyl stickers.</p> <p>Slits together through slot method.</p> <p>Space for advertisements, open access.</p> <p>Leave enough for AA</p> <p>flat pack design</p> <p>370 mm</p> <p>310 mm</p>	<p>Leave blank</p>

Specification point 1:

1. Evidence to indicate the design is capable of standing unaided
2. Evidence to indicate there is a space to hold A4 advertisements

Design idea 1 mark 2

The design has a support at the back and the adverts are held upright (portrait).

Design idea 2 mark 2

The design has a wide base and is technically different from idea 1. The adverts are held in a technically different method to idea 1 in that they are laying down.

Specification point 2:

1. Evidence to indicate that some of the display will flat pack
2. Evidence to indicate how the stand is assembled without the use of tools.

Design idea 1 mark 2

The support inserts into a slot and the card folds into shape. There is sufficient information presented to understand how the design would be assembled and professional judgement suggests no tools would be required.

Design idea 2 mark 2

The idea is technically different to idea 1. The pieces would slot together (ignore that they may not hold) and therefore would flat pack. Sufficient information is presented to understand how the design would be assembled and professional judgement suggests no tools would be required.

Specification point 3:

- 3.
1. Evidence to indicate that the name "The House" can be displayed.
2. Evidence to indicate that slogan "a film for all the family" can be displayed.

Design idea 1 mark 2

An arrow indicates where "The house" will be. An arrow indicates where "A film for all the family" will be.

Design idea 2 mark 2

An arrow indicates where "The house" will be. An arrow indicates where "A film for all the family" will be.

Specification point 4:

1. Evidence to indicate that one material indicated is suitable for a batch production.
2. Evidence to indicate that one process indicated is suitable for a batch production

Design idea 1 mark 2

Die cutting is indicated. Card board is indicated.

Design idea 2 mark 2

Injection moulding is indicated. Acrylic is indicated.

Total marks for design idea 1: 8

Total marks for design idea 2: 8

- (i) The promotional display must be freestanding and have a place to hold A4 size advertisements that customers can take away.

The display is made up of five sections, these form a rectangular space which the advertisements are placed. Due to the display having a base it is freestanding. (2)

- (ii) The promotional display must be capable of being delivered as a flat pack and assembled without the use of tools.

The display is put together by the slot method, this can be held done by hand. It consists of five pieces, each can be pushed in flat opposite position. (2)

- (iii) The promotional display must display the film name "The House" and the slogan "A film for all the family".

There is a large space above the advertisements which enables the text to be placed through use of vinyl stickers. (2)

(Total 22 marks)

Evaluation of spec point 1 mark 0

The candidate offers no new information to that which has gained marks in the design answers. The comments are more of an annotation than an evaluation.

Evaluation of spec point 2 mark 0

The candidate offers no new information to that which has gained marks in the design answers. The comments are more of an annotation than an evaluation.

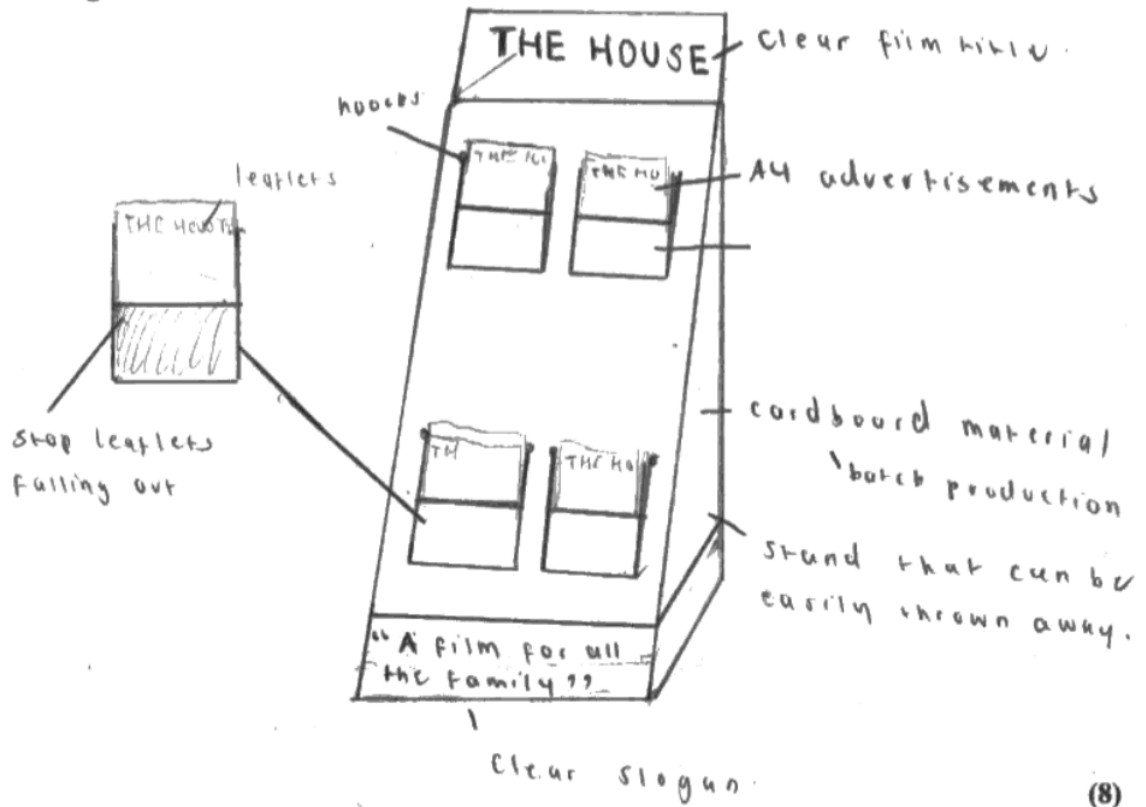
Evaluation of spec point 3 mark 1

The candidate has evaluated the space and being "large" which gains 1 mark. The comment about vinyl stickers is a development of a design idea it is not an evaluation.

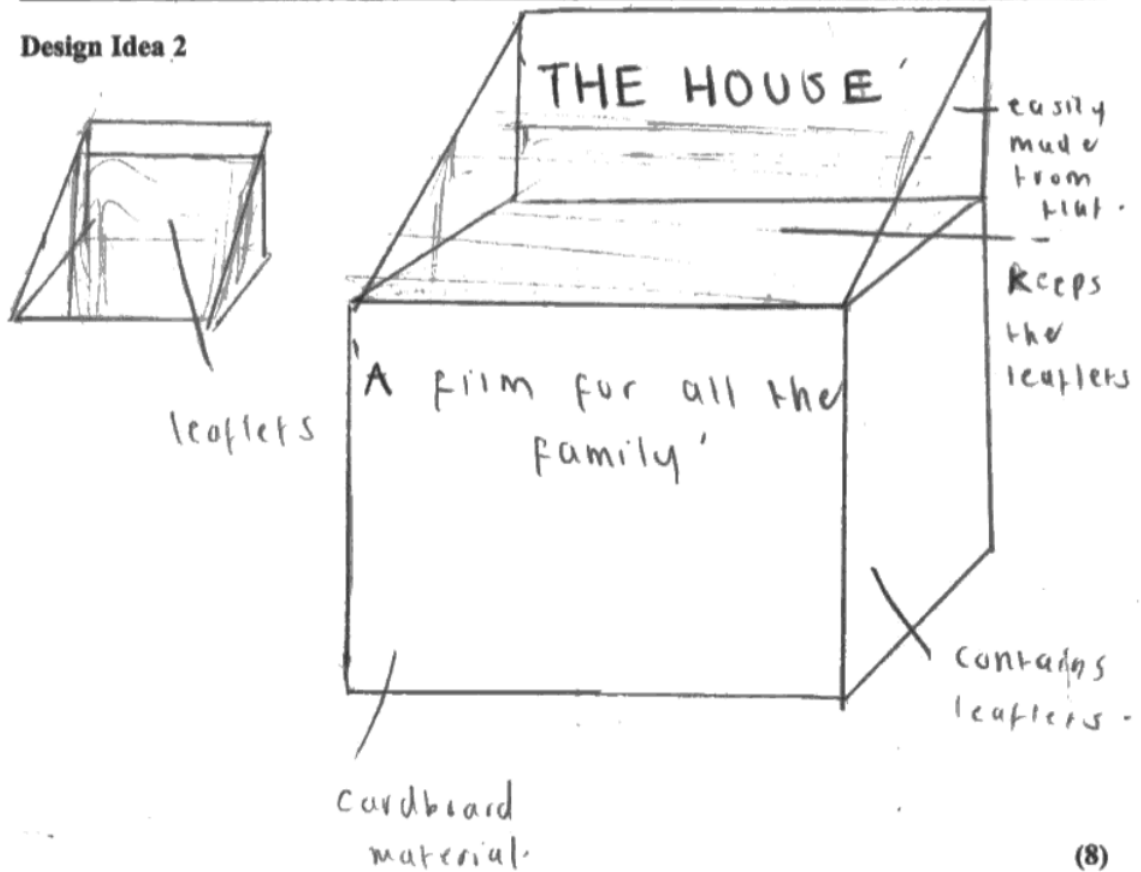
Total marks for evaluation: 1

Total marks for question: 17

Design Idea 1



Design Idea 2



Specification point 1:

1. Evidence to indicate the design is capable of standing unaided
2. Evidence to indicate the is a space to hold A4 advertisements

Design idea 1 mark 2

The design has a square flat base. The adverts are held in 4 pockets.

Design idea 2 mark 1

The design has the same method of standing as idea 1. The adverts are held in a technically different method to idea 1 in that they are laying down.

Specification point 2:

1. Evidence to indicate that some of the display will flat pack
2. Evidence to indicate how the stand is assembled without the use of tools.

Design idea 1 mark 0

There is no evidence of how the design would flat pack or assembly.

Design idea 2 mark 0

There is no evidence of how the design would flat pack or assembly

Specification point 3:

1. Evidence to indicate that the name "The House" can be displayed.
2. Evidence to indicate that slogan "a film for all the family" can be displayed.

Design idea 1 mark 2

"The house" is indicated. "A film for all the family" is indicated

Design idea 2 mark 2

The house" is indicated. "A film for all the family" is indicated

Specification point 4:

1. Evidence to indicate that one material indicated is suitable for a batch production.
2. Evidence to indicate that one process indicated is suitable for a batch production

Design idea 1 mark 1

Card board is indicated . No process is indicated.

Design idea 2 mark 0

The only material indicated is a repeat of idea 1 and therefore gains no credit. No process is indicated.

Total marks for Design Idea 1: 5

Total marks for Design Idea 2: 3

- (i) The promotional display must be freestanding and have a place to hold A4 size advertisements that customers can take away.

Design... must... be... freestanding... and...
 it... meets... this... criteria... well... There... are... 4... pockets...
 on... the... stand... that... A4... leaflets... can... easily... be...
 inserted to and made easy for customers to take away. (2)

- (ii) The promotional display must be capable of being delivered as a flat pack and assembled without the use of tools.

The... base... of... the... promotional... display... can...
 be... assembled... from... flat... pack... however... the...
 four... pockets... need... to... be... hooked... on... which...
 could cause some problems delivering in flat. (2)

- (iii) The promotional display must display the film name "The House" and the slogan "A film for all the family".

The... promotional... display... displays... the... film...
 name... at... the... top... of... the... stand... so... viewers...
 can... easily... see... what... the... stand... is... for... The...
 slogan... is... situated... at... the... bottom... and... can... be...
 easily seen. (2)

(Total 22 marks)

Evaluation of spec point 1 mark 1

The candidate gives no reasons why the design is freestanding and therefore gains no mark. A mark is awarded for the comment about "4 pockets" as this was not relevant to mark awarded for the design idea. If the candidate had given reasons why the "leaflets can easily be inserted" a second mark could have been awarded.

Evaluation of spec point 2 mark 0

The candidate offers new information "pockets need to be hooked in" i.e. assembled which did not gain any credit in the ideas section. In order for this to be valid it requires interpretation. While it may be possible to interpret what the candidate means it is not sufficiently detailed to gain credit.

Evaluation of spec point 3 mark 2

The candidate has evaluated the position of the name as being "at the top" therefore 1 mark is awarded. The slogan has been evaluated as being "easily seen" therefore another 1 mark is awarded.

Total marks for evaluation: 3

Total marks for question: 11

Question 4(a) Mean score 1.39 from 2 marks

Most candidates could provide suitable reasons for having a smooth surface. It was frequently the second linked part of the explain answer that prevented candidates scoring full marks.

Question 4(b) Mean score 3.63 from 6 marks

A significant number of candidates missed two requirements from the wording of the question i.e. that they were told glass and aluminium could be recycled, and that the properties had to be different.

The most common incorrect answers related to costs, i.e. candidates simply wrote "cheap". Most candidates were able to give at least one correct property of both materials.

Question 4(c) Mean score 1.02 from 3 marks

There were a full range of answers to this question. The most common incorrect answers related to weight, cost, toughness, durability and being able to be recycled. As the comparison of pine to MDF for these properties would depend on individual pieces of the materials they were not valid. For example the density of pine would vary from piece to piece.

Question 4(d) Mean score 1.38 from 2 marks

Most candidates appear to equate refill with recycle. This resulted the majority of candidates scoring good marks. Answers related to financial benefits, not environmental, were the most frequent incorrect ones provided.

Question 4(e) Mean score 2.06 from 3 marks

There were a wide range of responses to this question. Where candidates failed to gain the marks it was most frequently for failing to give advantages. Providing answers such as "they know what is in it" did not provide sufficient information to gain the mark.

Question 4(f) Mean score 0.92 from 2 marks

A significant number of candidates did not seem familiar with temperature sensitive materials. This resulted in answer such as "they will be able to read the label when frozen". Smart and modern materials are consistently a topic where the majority of candidates could gain greater marks.

Question 4(g) Mean score 1.66 from 4 marks

The social impacts of technology tend only to be answered correctly by higher ability candidates. Again the most common reason for candidates failing to score marks was the missing second part of the explain answers.

For specific information about candidate performance the ResultsPlus service from Edexcel is useful. This provides information about cohort and individual candidate results on a question by question basis.

**GCSE Design and Technology: Graphic Products
Principal Moderator's Report - June 2009
3972, Paper 01 (Coursework)**

General comments

The entry for this aspect of the GCSE examination series was very small, much smaller than in previous years. Similarly to previous years the centres have a good idea of what should be expected of their candidates. Marks allocated by centres were very largely in line with the boards' standard across 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. Some centres did fail to recognise this and it was only in these areas that the candidates tended to be over marked.

Almost all 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; however there was not the evidence to suggest that this had restricted candidates, as in previous years. The use of prepared layout sheets is helpful to focus some students, but the design work can often be lacking in detail and depth when presented in this formulaic manner.

Centres usually sent work securely bound and in an A3 format, however there was a significant number of centres relying upon the CMRB to label the work. 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. Candidates often failed 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

Most candidates had failed to justify their specification points, often offering a common list where set class projects had been undertaken. Budgetary constraints was also overlooked, candidates must give reasons for the amount being suggested. Specification was an area that commonly required some adjustment.

Ideas

This section was often accurately marked with little adjustment 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.

Develop

In general centres again marked this section accurately. Where there was adjustment, it was because of a lack of material or construction process was evidenced; or a lack of modelling, or simply no change incorporated into the design work. 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. Many candidates now recognise the need to move their ideas on from the initial stage with the development of the whole as well as the sub-systems involved in the final product.

Written Communication

This assessment criterion was well marked and rarely required adjustment. It is important to note that the candidates achieving marks at the highest level were able to evidence the use of correct technical terminology and processes.

Other Media & ICT

This assessment criterion was well marked and rarely required adjustment.

Systems and Control

There is evidence that centres are less confused than in the past 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. The correct use of a decision box will allow the allocation of a mark without any labelling.

Industrial Applications

This assessment category was again quite frequently 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. Some candidates produced rather more demanding products than was actually required. It may be more prudent to attempt to model a less demanding product and produce it to a higher quality. The lack of detail in the itemising of materials sometimes let candidates down in this category.

Make Products

This was 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

Yet again 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 Examiners' Report - June 2009
3972, Foundation Paper 2F**

The format of this year's examination papers follows that of previous years. Due to the small allocation the information given is the same as the full course paper. The mean scores have been changed to short course paper though.

Question 1(a) Mean score 3.40 from 6 marks

The safety ruler shown as the first item was frequently described as a ruler, which was not sufficient to gain credit. Where candidates did not correctly identify the safety ruler they often still gained the second mark for describing its use e.g. making a statement related to measuring.

The cutting mat was correctly identified by the majority of candidates. The scalpel was often incorrectly identified as either a knife or craft knife. Again they gained the second mark for describing its use e.g. for cutting.

At last year's inset meetings the following approach was suggested as a method of improving results in this question.

- Identify possible subject content from the specification/ previous examinations.
- Identify tools or equipment that might be difficult to identify. Probably items such as pencils do not need teaching?
- Collect images of different forms of the tool or equipment.
- Produce flash cards or presentations to use to test students' recognition.

Question 1(b) Mean score 1.87 from 3 marks

There were a wide range of answers (from the choices given) to the three different parts of the question. CAD/CAM was the most frequent incorrect answer for parts 1 and 2. Painted was the most frequent incorrect answer for part 3.

Question 1(c) Mean score 0.60 from 2 marks

There were a wide range of answers (from the choices given) to the two different parts of the question.

Question 2(a) Mean score 1.20 from 2 marks

Paper and card are materials that candidates are very familiar with. This allowed the majority to answer these questions correctly.

Question 2(b) Mean score 0.80 from 2 marks

The mark scheme for this question contains valid answers that appear to contradict each other i.e. that a HB pencil can be either easier or harder to erase than a 2B pencil. It is dependent on how the pencil is used, e.g. applied with force or gently; with both answers potentially being valid, both were credited.

Question 2(c)(i) Mean score 0.73 from 2 marks

This question was the first "explain" type on the foundation tier. As has been observed in previous years candidates frequently failed gain the second mark available due to the lack of a linked second part to the answer. It might be useful for candidates to link "explain" type questions to "because" type answers.

The answer below is from mark scheme;

More of the pencil is in contact with the paper. (1) This makes it quicker / smoother (1)

A candidate who had be taught to respond to *explain* questions with *because* answers might have written:

"The colour will be smoother because more of the pencil will be touching the paper"

This style of answer is not only correct and worthy of both marks, but the simple structure of "explain=because" might support foundation tier candidates gaining more marks.

Question 2(c)(ii) Mean score 1.20 from 2 marks

Marker pens are tools that candidates are familiar with. This allowed the majority them to answer this question correctly.

Question 2(d) Mean score 0.73 from 1 mark

This question had a wide range of valid answers. The majority of candidates could correctly identify a suitable piece of equipment. The most common reason for candidates not gaining the mark was due to giving answers that were not recognised as appropriate drawing equipment e.g. drawing around a cup.

Question 2(e) Mean score 0.33 from 1 mark

The most frequent incorrect answers given by candidates related to the user wearing a mask for health reasons.

Question 2(f) Mean score 0.47 from 1 marks

Part (f) was the most frequently answered correctly.

Question 3(a) Mean mark 0.93 from 6 marks

(Crossover with question 1 higher tier)

One of the most common reasons for candidates failing to score marks for this section was that some produced answers related to a real building rather than an architect's model. This illustrates that candidates need to carefully read the question.

The needs of the user and environmental considerations were generally better answered than the question related to quality.

A common reason for candidates failing to score the mark for the reason was that they tended to repeat the point they had already given using different words.

An example of this type of answer would be:

Point	The model should be made from recyclable materials.
Reason	So that the materials can be reused.

The reason in this example does not give sufficient new information to gain the second mark available.

Question 3(b) Mean mark 1.20 from 2 marks

The properties of MDF were generally familiar to candidates. Common reasons for candidates failing to gain the marks were where answers such as cheap and lightweight were given.

Question 3(c) Mean mark 0.47 from 2 marks

The reasons for using lithography were understood by the majority of candidates.

Question 3(d) Mean mark 0.53 from 4 marks

There were a full range of answers to this question.

Question 3(e) Mean mark 0.73 from 2 marks

Most candidates were able to give at least one quality control check that could be carried out on the cover. Where candidates most frequently failed to score the marks was by giving single word answers such as "durability" or "strength". Without qualification of the context these answers did not provide sufficient evidence to justify the award of the marks.

Question 3(f) Mean mark 0.27 from 2 marks

The majority of candidates on the foundation tier found this question difficult. The question was about the shape of roof, not vacuum forming itself. Candidates often gave answers relating to the process without linking it to the product.

Question 3(g) Mean mark 0.53 from 4 marks

There were a full range of answers to this question.

**GCSE Design and Technology: Graphic Products
Principal Examiners' Report - June 2009
3972, Higher Paper 2H**

The format of this year's examination papers follows that of previous years. Due to the small allocation the information given is the same as the full course paper. The mean scores have been changed to short course paper though.

**GCSE Design and Technology: Graphic Products Technology
Principal Examiners' Report - June 2009
1972, Paper 2H (Higher)**

Question 1

Points made in Question 3 2H (crossover question) apply to the higher as well. The mean scores for the questions are as below:

item	Mean
Q01a	3.78
Q01b	1.48
Q01c	1.48
Q01d	2.39
Q01e	1.46
Q01f	.76
Q01g	2.89

Question 2(a)(i) Mean score 0.67 from 1 mark

There were a wide range of answers to this question. The most common incorrect answer was letterpress. A number of candidates gave vacuum forming as their answer.

Question 2(a)(ii) Mean score 1.00 from 2 marks

Many candidates correctly drew the male part of the tool. Of those candidates that provided the appropriate drawings for the male part only a relatively small number identified the need for a female, or cushioned, surface for the raised letter to be formed into.

Question 2(b) Mean score 0.98 from 2 marks

The most common correct answers related to higher quality and more detail. Where candidates failed to gain marks was frequently due to a lack of objective comparisons with lithography for answers such as "quick, cheap"

Question 2(c)(i) Mean score 0.67 from 1 mark

The most common incorrect answer was laser cutter.

Question 2(c)(ii) Mean score 0.74 from 1 mark

Varnishing and laminating are techniques the most candidates are familiar with and hence most gained the marks from this question.

Question 2(d) Mean score 2.59 from 4 marks

There were a wide range of responses to this question. The most frequent reasons for candidates not scoring marks were the lack of the linked second part to an explain question and the suggestion that a digital camera took better quality pictures.

Question 3(a) Mean score 1.28 from 2 marks

Most candidates could provide suitable reasons for having a smooth surface. It was frequently the second linked part of the explain answer that prevented candidates scoring full marks.

Question 3(b) Mean score 3.89 from 6 marks

A significant number of candidates missed two requirements from the wording of the question i.e. that they were told glass and aluminium could be recycled, and that the properties had to be different.

The most common incorrect answers related to costs, i.e. candidates simply wrote "cheap". Most candidates were able to give at least one correct property of both materials.

Question 3(c) Mean score 1.28 from 3 marks

There were a full range of answers to this question. The most common incorrect answers related to weight, cost, toughness, durability and being able to be recycled. As the comparison of pine to MDF for these properties would depend on individual pieces of the materials they were not valid. For example the density of pine would vary from piece to piece.

**GCSE DESIGN AND TECHNOLOGY: Graphic Products
(Full Course: 1972)**

Grade Boundaries - June 2009

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2009 examinations.

Both higher and foundation options are out of 100 marks.

	A*	A	B	C	D	E	F	G
Foundation				54	44	34	24	14
Higher	82	72	62	52	41	35		

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2009 examination.

(Coursework 01 out of 102)

(Paper 2F out of 88)

(Paper 2H out of 88)

	A*	A	B	C	D	E	F	G
Coursework	92	80	68	56	45	34	23	12
Foundation				52	42	32	22	12
Higher	65	57	49	41	33	29		

**GCSE DESIGN AND TECHNOLOGY: Graphic Products
(Short Course: 3972)**

Grade Boundaries - June 2009

Overall Grades

The figures given below are the minimum subject marks required for each overall grade in the summer 2009 examinations.

Both higher and foundation options are out of 100 marks.

	A*	A	B	C	D	E	F	G
Foundation				55	44	33	23	13
Higher	83	72	61	50	40	35		

Component Marks

The figures given below are the minimum marks required for each component grade in the summer 2009 examination.

(Coursework 01 out of 84)

(Paper 2F out of 44)

(Paper 2H out of 44)

	A*	A	B	C	D	E	F	G
Coursework	76	66	56	46	37	28	19	
Foundation				24	19	14	10	6
Higher	31	27	23	19	15	13		

Further copies of this publication are available from
Edexcel Publications, Adamsway, Mansfield, Notts, NG18 4FN

Telephone 01623 467467
Fax 01623 450481

Email publications@linneydirect.com

Order Code UG021222 Summer 2009

For more information on Edexcel qualifications, please visit www.edexcel.com/quals

Edexcel Limited. Registered in England and Wales no.4496750
Registered Office: One90 High Holborn, London, WC1V 7BH