

# **Design & Technology (Product Design)**

General Certificate of Secondary Education **GCSE J901**

General Certificate of Secondary Education (Short Course) **GCSE J900**

## **Report on the Units**

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**January 2008**

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

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

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## Chief Examiners Report

The January 2008 session saw a significant number of Candidates entering Units B801, Developing and Applying Design Skills, B802, The Innovation Challenge and B804, Designing Influences. But, as with last January there were very few entries for B803, Making, Testing and Marketing,

I am pleased to report that once again some truly excellent work has been seen and quite clearly many Teachers and, more importantly many Candidates, are continuing to enjoy the new and refreshing challenges brought to them by this exciting qualification.

There has also been work submitted which would have been more suitable for other specifications where Candidates could concentrate on a specific material area and where, for example research into materials and joints might well be more appropriate. I am happy to report these instances are fewer for this examination session.

Year nine entries this January were fewer. This is one point which I need to remind all centres about in that assessment for all four units is at a GCSE standard normally associated with the end of KS4 and no dispensation can be allowed for candidates entered earlier i.e. Year 9 students.

There were a considerable number of problems caused by centres failing to adhere to deadlines for submission of paperwork to the Moderators and also in forwarding samples of work to the Moderators.

All centres are advised that:

*A copy of the CSF (in candidate number order), a copy of the MS1 and a CCS160 Centre Authentication Form (signed by all teachers teaching the unit) should be sent to the respective moderators (note different moderators for different units B801 and B803) by the 10<sup>th</sup> of January or 15<sup>th</sup> May for the summer examination session.*

*Failure to do this hinders the moderation process and centres should be aware that this could in turn affect the prompt publishing of candidate grades on the due date by OCR.*

*If there are 12 or less candidates for any one unit then the work for all candidates should be sent at the same time to the moderator but under different cover to avoid problems should anything go astray in the post. Centres are advised to use a traceable system for the samples. On receipt of the request for the samples from the moderator the work should be sent by return of "post" directly to the respective moderator.*

***Arithmetical errors contribute to delays in moderation and can be avoided by the use of the electronic (Excel based) CSF (Coursework Summery Forms) These errors all have to be corrected on form CW/AMEND which then needs to be signed by the teacher(s), returned to the moderator for their signature prior to being sent to OCR.***

Additionally basic administration caused a number of problems for both Moderation and Marking and Centres are reminded of the following:

The benefits of a modular course cannot be over emphasised. Teachers and Candidates alike have a flexibility which until now has been unavailable.

However the organisation and administration bring with them a difference which many centres, including the Examinations Officers, have failed to understand.

## *Report on the Components taken in January 2008*

All four Units: B801 Developing and Applying Design Skills  
B802 The Innovation Challenge  
B803 Making, Testing and Marketing  
and B804 Design Influences

should all be treated totally separately.

Candidates Portfolios, Entry codes, CSF's Mark sheets, CCS160's (Centre Authentication Forms) and all other administration are individual and distinct for each coursework unit.

The two coursework Units B801 and B803 can be linked for teaching if a centre wishes, but must be presented separately by candidates as two distinct portfolios.

The moderators will be different for each unit. So, when sampling for moderation takes place, centres MUST ensure B801 (which contains IAO1, IAO2 and IAO3) and B803 (which contains IAO4 and IAO5) are completely separate, totally distinct portfolios for each candidate.

If a candidate links B801 and B803 a photocopy of the final idea from IAO3 in B801 together with an appropriate specification (which could well be a photocopy of the original one from IAO2 or a different one as the Centre decides) will form *part* of the "Concept Page" for B803

Additional input on OCR's administration procedures was again provided at Inset to minimise administration problems and all centres are encouraged, as previously stated, to use the electronic copies of the CSF (Coursework Summery Forms) which are available and will eliminate arithmetical errors on those forms.

Centres are now used to the fact that the specification has no tiers of entry and this continues to be most beneficial lessening the administration burden, errors of incorrect selection of tier entry and also speeding up analysis of Centre results.

The previous Reports to Centres have been well received and the comments are still valid and should be read in conjunction with this report.

It is pleasing to report an increase of the centres entering candidates having undertaken the work in true "Product Design" style rather than continuing with the "linear GCSE" activity and trying to make it fit the new unitised Product Design specification.

The specification continues to mature and, as it became available to all centres from September 2007, a significant number of new centres are now involved. Early indications are for a massive increase in numbers in all four units in June 2007.

This fact alone re-enforces an earlier point made about efficient contact with Moderators on the due date with all documentation correctly completed and in place.

All Centres, the original Pilot Centres and the large number of "new Centres, should feel very confident that the specification is stable and has total equivalence to other GCSE's but offers more flexibility in both teaching and learning and a total breath of fresh air for Candidates and Teachers alike.

We are looking forward welcoming many new centres for the next assessments.

Chief Examiner  
OCR Product Design

# B802 Innovation Challenge

## General Comments

Students and staff have again enjoyed the work they have carried out within the 'challenge' with many students reflecting positively on their experience. It is pleasing to see students combining skills and knowledge of different material areas and using this to develop an optimum solution to the given design problems.

### Administration

Centres are reminded of the requirement to submit details of the dates of the Innovation Challenge to OCR using the VAF form. A number of centres failed to submit this form before the given deadline this session. This form should be submitted by either 1<sup>st</sup> January or 1<sup>st</sup> May. Copies of the form are available on the OCR website – [www.ocr.org.uk](http://www.ocr.org.uk).

All materials relating to examinations sent from OCR to centres will be despatched to the examinations officer. It is important that colleagues check with the examinations officer that they have received all relevant and most up to date information prior to starting the challenge activity.

Examination notices must be displayed in the area where the examination is to take place.

### Running the Challenge

As with previous sessions, a number of centres were visited during the innovation challenge to monitor the activity and offer support and guidance to colleagues. The challenge requires careful organisation and planning.

Centres are reminded that the role of the teaching colleague is that of a facilitator and not that of a normal classroom teacher. They are there to provide access to materials, monitor health and safety issues and read the teacher script to candidates, elaborating and explaining where this is indicated. Colleagues must not give advice to students about the design or manufacture of their product or cut materials to correct shape or dimension for students. It must be made clear to all candidates that this is an examination and we are assessing the individual student's designing and modelling capability.

It is important that the theme sheet is read through with the candidates and the appropriate challenge identified along with the supplementary information. It has been clear in this session that a number of students have approached the challenge with pre-conceived ideas and have failed to respond to the supplementary information given.

### Photographs

The quality of photographs has improved this session but examiners have reported some problems with the photographs presented for assessment. These problems include; poor focussing of objects and photos being printed at low resolution or in black and white. It is important that colour images of a good quality are provided by the centre. Photographs should be of an appropriate size to fit into the space provided.

The addition of a card with the candidates name within the photo aids the return of photos to students. Centres are reminded that four "teacher" photographs is the minimum required. Additional photos can be added to the workbook. This is particularly important if it is necessary to show other parts or views of an artefact to fully illustrate the final outcome.

## *Report on the Components taken in January 2008*

It is recommended that if candidates wish to annotate photographs that a second print is produced and stuck into either the appropriate section of the workbook or into the 'additional space' and clearly labelled and then annotated.

Candidates should be encouraged to stick photos into the workbook as they are printed.

### Completion of the workbook

Examiners have reported difficulty in understanding student's work where either blunt pencils or pencils with a hard lead (2H) have been used for written work. Please advise candidates of the need for all of their work to be legible.

### Security of Workbooks

Centres are reminded of the importance of appropriate security of all workbooks between the three sessions of the Innovation Challenge.

## **Development of design. Evolution through making.**

### Initial Thoughts

Candidates used a mix of text and drawings to explore the given theme and identify possible design areas/problems. Some candidates failed to think creatively about the problem and suggested only predictable responses. Some candidates failed to consider the 'supplementary information' given within the challenge theme. Candidates need to be encouraged to take risks and think creatively.

### Briefs

Briefs identified by candidates were often poorly written. Design Briefs were often too prescriptive and in some cases were almost specifications. Candidates should be encouraged to write clear and precise design briefs that offer scope for creativity.

### User/Clients

The majority of candidates identified appropriate user groups for their products. However, many candidates failed to give any further consideration of the user during their design work.

### Specifications

Specifications from many candidates were disappointing and often failed to go beyond the information given in the challenge theme or contained only vague, generic points which could apply to almost any product. Candidates should be encouraged to write detailed, justified, specific points about their proposed design. A bullet pointed format was seen to be of assistance to higher performing candidates.

### Ideas

Students used a mix of drawings, text, annotation and occasionally modelling/photographs to show their ideas. Lower scoring candidates reproduced the initial thoughts from section one of the challenge activity and disregarded both the design brief and specification.

Higher performing candidates produced a range of creative ideas that clearly related to their design brief, specification and potential users. Drawings of both full designs and parts of designs were provided along with annotation relating to materials and construction methods. Development of the design from the 'initial thoughts' was clearly evident.

### Supplementary Information

High achieving candidates responded well to the supplementary information and gave clear reference and consideration to it throughout their design work.

Centres should be cautious of over preparing students for the examination from the pre-published theme sheets. Examiners felt that on a number of occasions candidates approached the examination with pre-conceived ideas. This obviously limits the candidate's opportunity for responding to the supplementary information.

Centres have been provided with an alternative theme should they wish to carry out a practice innovation challenge activity.

### **Communicating information through sketches, writing and photographs**

The standard of design communication was generally good. Candidates presented their ideas using a range of annotated drawings and text. Higher performing candidates gave different views of objects or parts of objects and clearly communicated their design thinking. Examiners felt that many candidates work could have been enhanced with the use of rendering techniques and that centres should encourage candidates to be more adventurous in their forms of communication.

### **Materials, Components, Processes, Techniques and Industrial Practice**

It was apparent that a small number of centres have misunderstood the requirements for modelling within the innovation challenge activity. Centres are reminded that candidates should undertake prototype modelling of their design using appropriate modelling materials such as foam, foam board, card, balsa, modelling clay, mechanism kits, polymorph etc. It was apparent from some candidates' works that materials such as pine, MDF, plywood and acrylic sheet were used by candidates. Where these materials were used, the candidates' work was limited due to the problems of shaping these materials and in most cases incomplete because candidates were trying to manufacture 'final outcomes' rather than 'prototype products'.

Higher achieving candidates considered the choice of materials and components available and identified the most appropriate material for the manufacture of their product. They completed their models to a high standard and demonstrated adept use of these materials. The model they produced accurately reflected their design.

### **Analysis of ideas, models and prototypes**

#### Peer Evaluation

The majority of candidates planned for the presentation and recorded the outcome. Clear evidence was seen of candidates using the feedback to further develop ideas. Occasionally, candidates failed to record the feedback or planning for this activity.

#### Development of ideas

Some candidates failed to develop their ideas and simply copied the design from the ideas section into the development section or produced a card model of their initial idea which was then stuck into box 8. It is important that candidates use notes or annotations to show how they are developing their design towards an optimum solution that satisfies the design brief, specification and needs of the user. Producing a model of the initial idea or redrawing the initial idea does not show development of the design.

#### Evaluation

Many candidates produced detailed evaluations of their prototype product. Higher performing candidates considered each of their specification points and completed the 'fast forward' section with detailed information about the future product.

#### Reflection

Higher achieving students clearly identified problem areas based upon their testing of the prototype and suggested alterations and improvements to the design.



## **B803: Making, Testing & Marketing Products**

The moderation process of this unit demonstrated the improving understanding of the specification and interpretation of the two assessment objectives. Those centres who are unsure about the delivery and content must attend appropriate training as the requirements of this specification is very different from currently available. Misinterpreting the criteria is detrimental to candidate's progress.

It is imperative that centres who are entering candidates from a wide variety of material areas invest time in assessing the candidates work as a centre, rather than in isolated groups. All products must justify the time and quality required to achieve the GCSE standard. The process of moderation always runs more smoothly when a centre carries out appropriate internal moderation. The procedure ensures that the rank order of candidates is correct and this greatly assists the moderator throughout the moderation process. It also minimises the opportunity for some candidates being allocated the wrong mark if the centre's marks are adjusted.

Teachers are required to authenticate that the work is that of the candidate. Where evidence is e-portfolio based this is particularly important.

Candidates are free to present the work in any appropriate medium, both on paper format or in electronic format on CD, but not a combination of the two. Currently CD has worked best for the marketing presentation as it allows a broader variety of media to be used to create a 'Sales Pitch' or advertising campaign.

CAM is to be encouraged where facilities are available. Centres need to be reminded that candidates are to combine a range of skills and techniques when constructing their final outcome. Candidates that purely use CAM to make their products cannot achieve the highest marks in any area of objective 4. Candidates must show their understanding of these processes to gain good marks, to say I simply use the equipment is unacceptable.

To ensure success in this examination, the selection of the product and media for construction is very important. Candidates are required to produce a quality product; showing a range of skills and techniques in the appropriate timescale outlined in the specification modelling in this unit is unacceptable and will gain no marks.

B801 and B803 work should be clearly separated by the centre and not submitted together for moderation.





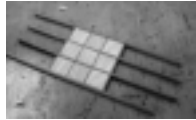










Centres must try to ensure prompt response to examination paperwork and the forwarding of moderation samples to moderators. An appropriate postal tracking option is best in the case of work going missing.

### **Objective 4 – Prototype Manufacture**





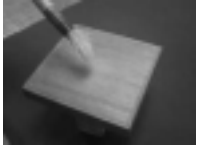








Centres are reminded that unlike unit 1 & 2 candidates must make a 3D prototype using appropriate media. The product needs to have working features to demonstrate how the product will function. Submission of a model for this unit is inappropriate.

A range of appropriate images must be made available for moderation. These should show the manufacturing stages of the product, all techniques and procedures used in the making and cover appropriate health and safety issues. Candidates should also be able to show consideration of the economic and efficient use of materials. A good example is shown below, although some key areas of construction are missing which would affect the overall mark.

# Report on the Components taken in January 2008

				
<p>I used a suitable dark light wood to provide a contrast for my playing board. I put glue on all the inside edges and used the method above to hold it, not shown here was a clamp but on top to stop the pieces springing out when tightened.</p>	<p>I then needed to sand it down to get it very smooth this took around an hour to do because I started with a very rough sandpaper and went down to the finest we had this gave me a very smooth surface with no</p>	<p>I cut 3 of the best strips from my wood and cut them on the ban saw then cut them to size using a plane</p>	<p>I used sandpaper to neaten up the last bit this only took a few seconds any more would mean it would have curved</p>	<p>I then glued these three strips together as shown in the very first stage. I then cut the excess off using a ban saw and light sanding.</p>
				
<p>This stage was very similar to the second stage I did the same again but less work was need this time dew to the effort but in initially.</p>	<p>I made the sides of the box from oak so that it would look better when French polished. Before cutting the sides into the separate bits as shown I had to cut a grove top and bottom where the bottom and top would fit when the box was put together, this was done by running it through the circular</p>	<p>I cut the base to fit by putting the four side together as using the strap in the next picture and cutting the base to size. I cut the 45 degree edges using a jig that I made on the belt sander. The jig was a 45 degree piece of wood that I set up at an angle of 45 degrees and then sanded the sides until they were 45 degrees I checked theses using a</p>	<p>I used a strap to hold the box together whilst gluing it need to hold the bottom and top in place I set it up without glue first to make sure it was ok, the clamp was used to lightly squeeze parts together where I thought it was needed.</p>	<p>This is the box after it had been glued together whilst gluing it need to clean it up and prepare it for finishes and fittings that I would apply.</p>
		<p>The 1<sup>st</sup> picture shows me sanding the bas level wit the bottom sides of the box using the electric sander I did the same for the top making sure I sanded with the grain. I then sanded the edges to get the smooth and to get a sharp corner to my box this is shown in the second picture</p>	<p>Using CAD I made my noughts and crosses I designed them on 2D design and cut them out using the laser cutter.</p>	
				

Candidates must take ownership for this evidence, they must explain in detail how they completed these tasks, highlight the tools and equipment used, show working photographs not generic images of tools and machines. It is important to show all techniques and procedures used. Highlight precision and health and safety issues. At this stage candidates should show any modifications or alterations in the making stages, problems that have been overcome, as this is a different aspect to modification marks awarded in objective 5. Images must show clearly it is the candidates own work and give a clear understanding how the product was constructed.

				
<p>I cut the box in half using the circular saw and then sanded down any rough edges using the method above.</p>	<p>Using a chisel I cut deep enough into the wood so that the hinge would fit in and still allow the box to close with no gap. I marked where I would do this first using a</p>	<p>I fitted the hinges by drilling a pilot hole smaller than the pin so that I could hit the pin into the wood without it splitting. I did this for both hinges.</p>	<p>I applied sanding sealer to make sure that my final finish looked better. This also helped because it gave a better surface to apply my polish to and meant that fewer coats</p>	
				
<p>To fit the hinge to the other side I set up a jig as shown above this kept it level and made sure it would not be wonky when I put the pins in. it made a safe area to use the drill and get accurate pilot</p>	<p>I then put the pins in as done earlier but did it slowly and carefully to make sure the box kept aligned. The jig that was made provide security and made sure it was perfectly aligned</p>	<p><u>Apparatus used for French polishing</u> Linseed oil, mentholated spirit, button polish, super fine wire wool, fine sand paper and a button (made from cotton wool and cloth used for applying</p>	<p>Using the home made button I applied the polish in stages building up a finish, I applied most to the top because this needed the best look I rubbed the polish on and repeated this several times, I left it too dry for 15 minutes before applying more polish.</p>	
	<p>I needed to give the hole box a light sand with super fine wire wool and very fine sand paper just to get it flat and smooth, I then added more of the polish in the same way as before until I got the finish I wanted, It took approximately 7 applications until I was happy with the finish. When dry I polished it</p>	<p>To fit the felt I first cut a paper stencil to the size needed and then used that to cut my blue felt exactly to size. I then glued the felt into the box using a spray glue.</p>		
<p>The very last thing was to nail the catch on using techniques used earlier.</p>				

*Report on the Components taken in January 2008*

This is a record of how the product progressed, a detailed diary of events. It should ideally be completed on a weekly basis alongside the construction of the product.

*A general written step by step is unacceptable for this specification and will gain no marks. For postal moderation proof of it being the candidates work is essential for success.*

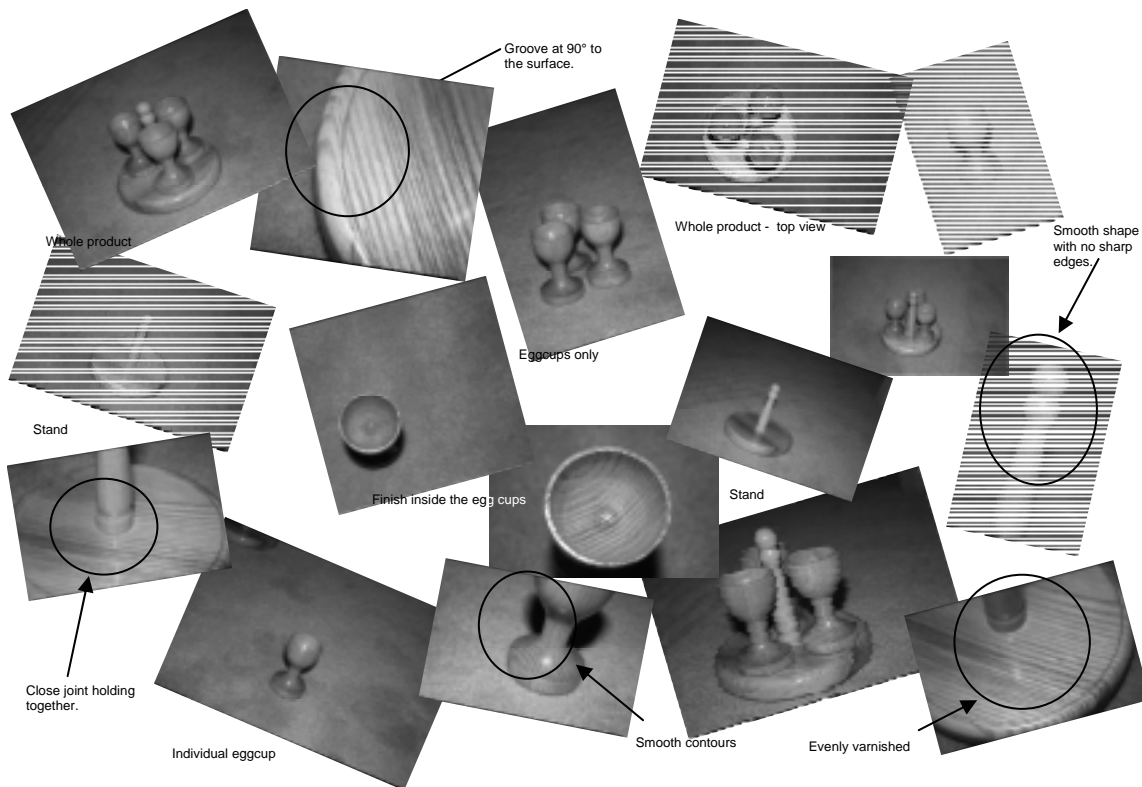
For the products to be able to be judged as high quality it is important that a range of images show the product from a variety of angles, highlighting appropriate techniques and functions of the product. An excellent series of images are shown below which clearly shows varying angles of the product and its quality.

It helps if centres provide some idea of scale in at least one photograph; placing a ruler or familiar object alongside the finished product.

If there is no evidence of a completed and finished product the candidate can only achieve the lowest threshold mark for this section, providing there has been some evidence of making in the images of the manufacturing process.



## Report on the Components taken in January 2008



### Objective 5 – Testing, Evaluating and Marketing

This objective is all about taking the product forward, not recapping on anything that has happened in the construction stage.

No repetition is required in this section, images of the final product or stages of making do not have to be reproduced.

Success in this objective relies upon candidates including clear and justified evidence matching the following six points.

1. A concept page that explains or shows the candidates idea, along with an appropriate detailed design specification they will use later to evaluate the success of their outcome.

*Ideally this should be the first page of the portfolio.*

2. A presentation of a range of quality images that provide evidence of all the important stages of manufacture and the skills, techniques and processes the candidate has gone through in making the prototype. Consideration needs to be given to health and safety and precision in making. Several final images of the finished product, in context, showing different aspects of the product that highlight the quality of the candidates work and prove it fulfils its function.

*This evidence will have been done already to support objective 4.*

3. Evaluation and Testing. A good initial specification is required for candidates to be able to fully evaluate their product. It is important that candidates test their product thoroughly, preferably in context, to make sure it does what was specified at the beginning of the project. Candidates should obtain relevant and detailed user feedback to achieve the higher marks.

*This section was generally well done with most candidates making reference to the specification. Better candidates had taken this further gaining useful and relevant feedback from the user group, however, user testing was less common.*

4. Suggest, in detail, appropriate design modifications to improve the finished manufactured prototype. This should be seen as a design exercise and is an opportunity for candidates to show how their finished product could be improved or modified. Candidates should show this as sketches or perhaps alterations made to photographs. This is an exercise that can be clearly practiced as any product can be improved upon with a little imagination. Candidates may wish to alter or draw on original images of the finished product or use overlays in an innovative design way.

*Generally this section was attempted poorly, with most candidates making reference to the construction stages, rather than thinking specifically about how the finished product could be improved. Remember this is a design subject and sketches/images/CAD etc., with clear and detailed annotation is the way this assessment point should be addressed.*

*Reference to modifications/alteration/problems made in the construction process will already have been awarded marks in the previous objective, so will not gain further marks in this section.*

5. Consider how the design prototype could be manufactured in quantity, using an industrial based manufacturing system or systems. Details of chosen materials and components needed in the manufacturing process must be included. The candidate should provide an idea of how the product could be made in the 'Real World' using appropriate materials and processing techniques. This however has to be specific to the finished product and relate clearly to the manufacture of specific parts of the product. Generic theory on manufacturing and mass production options will only gain the lowest threshold marks.

*This section was generally poorly attempted by candidates as in the majority of cases the work was approached as a general theory exercise and the work did not relate to the product being developed for mass production. Careful thought and research needs to be done to find out how the product could be manufactured in the 'Real World'. A statement relating to one off production is not in the spirit of the specification.*

6. The Marketing Presentation only applies to this single point. It should be an innovative presentation to a prospective manufacturer, supplier, buyer or retailer of the product. This should be looked on as a 'sales pitch' to one of these people explaining the benefits of the product, why people might want this product, show how the product might look and how it would be packaged and how the product would be presented to the customer for sale. *Lots of inspiration for this area stems from the advertising of products which we are surrounded by.* You could consider how the product could be advertised or brought to peoples attention, raising awareness of this new product, so boosting sales.

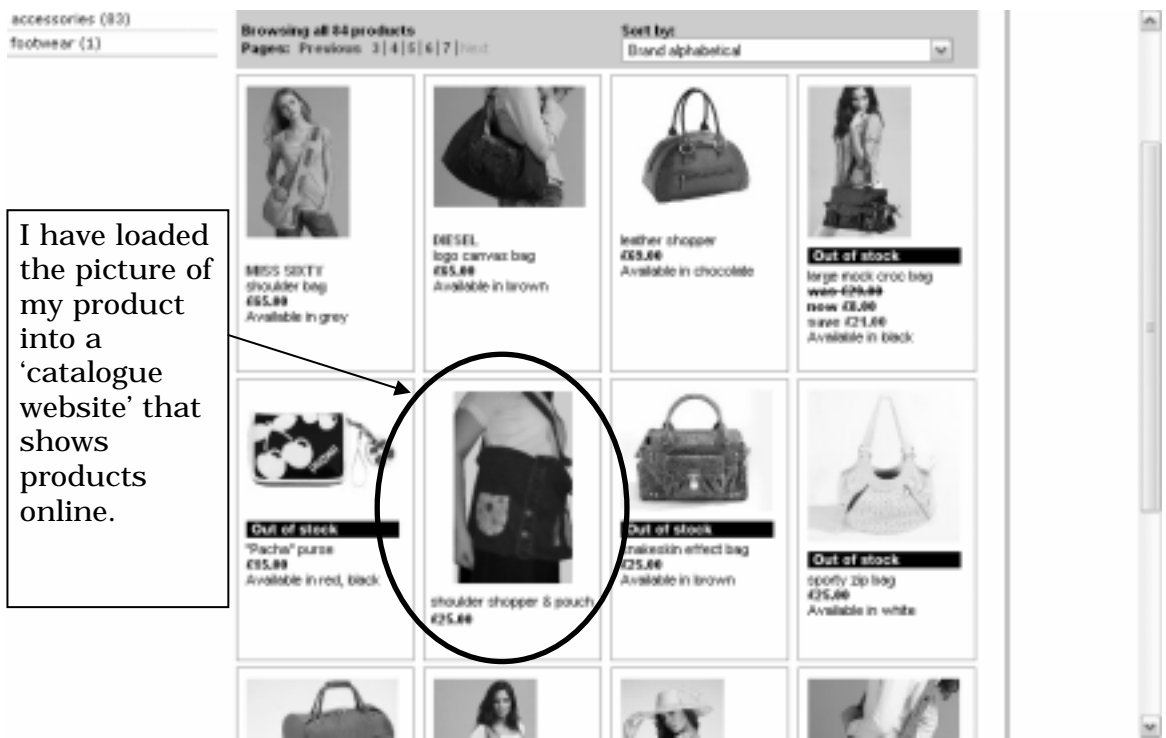
Although most centres did attempt all aspects of objective 6, candidates did not do as well in some areas due to centres understanding of the requirements for each section, hopefully now this report highlights the requirements needed to do well in each area.

*Report on the Components taken in January 2008*

The marketing presentation is an opportunity for the candidates to promote their ideas through an innovative presentation to a prospective manufacturer, supplier, buyer or retailer of the product, which some candidates had embraced fully.

Good examples seen include adapted pages from magazines, with the product cut and pasted onto the page; web based selling; billboards and fake celebrity endorsements, to achieve the higher marks however, these would need explanation to explain the marketing strategy.

**Advertising my product**



I was pleasantly surprised about some of the ideas which were presented. Some of this work was simply fantastic and just shows what candidates are capable of when given the opportunity to express themselves in an innovative way. The most innovative ideas seen, so far, were funny and humorous video commercials, these innovative marketing presentations achieved the highest marks.

*Centres must be reminded that although practical work is a key part of this unit, candidates will only do well if appropriate evidence is presented in the portfolio.*

Phil Clarke. Principal Moderator.

## B804 Design Influences

### General comments:

Overall the paper provided a suitable challenge to the students. The vast majority of candidates found the paper fully accessible and were able to attempt every question. In nearly all cases it was clear that candidates had carried out their research into designers and design eras. In most cases candidates were able to draw upon their knowledge of designers and their works; the famous quote of Mary Quant with regard to the mini-skirt allowing women to 'run for the bus' was widely used. The design section was well answered and in general an improvement upon previous examination sessions. The development section was significantly improved with candidates systematically developing the idea whilst evaluating their ideas against the specification. However, it is important to ensure that candidates read the brief thoroughly and make sure that their design proposals actually fulfil the need. The weakest feature of the design section is still the four specification points. Too often, candidates merely repeat points given to them in the brief or in the worst cases ask a series of questions such as 'the target market?' Candidates need to be reminded that no credit is given to generic points such as it should be 'hardwearing' or 'aesthetically pleasing' or it should have no sharp edges - **all specification points should be qualified.**

### Detailed comments:

#### Question 1

(ai). With plenty of acceptable answers available, most candidates were able to score at least one mark. Most popular answers were the added height, the heel and the open toes.

(aii) Generally well answered.

(b) Variable response – strength and water resistance were the most popular answers but many clearly failed to understand the term physical property and merely named materials such as leather or plastic..

(c). Well answered with leather being the most common answer – a good understanding of the ethical consideration relating to the use of cow hide for shoes.

#### Question 2

(a). Generally well answered with the environmental benefit being the most common answer.

(aii). Generally well answered with students correctly identifying the correlation between the strength of the sun and the amount of charge. Generic responses such as does use electricity were not accepted and need to be qualified.

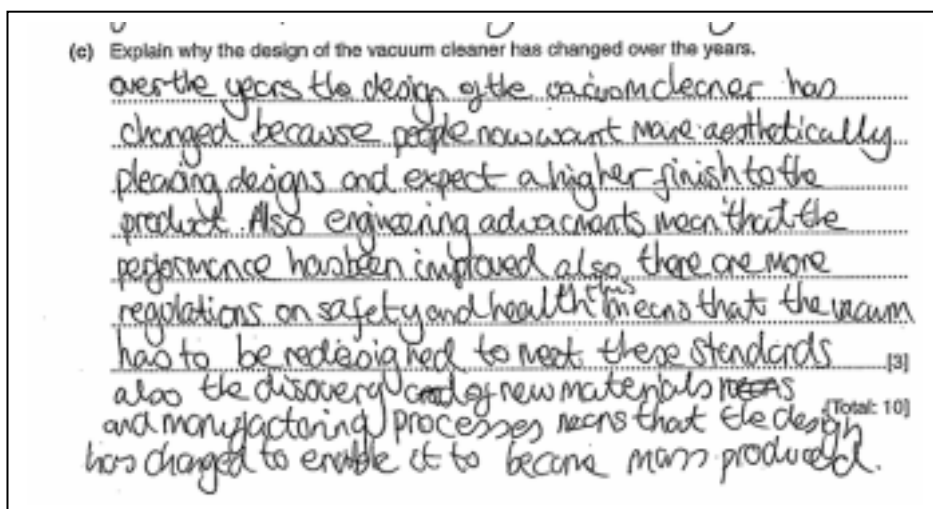
(b). By and large candidates scored well on this question. The most common wrong answers were kinetic and potential energy and heat energy.

(c). Poorly answered. Few candidates were able to draw upon domestic products such as wind-up torches or solar powered calculators and draw conclusions about why products such as kettles and other electrical appliances do not use sustainable technologies. Candidates tended to talk in general terms about the drawbacks of solar power and wind generators.

### Question 3

- (a). Generally well answered with virtually all candidates gaining marks. Some candidates just gave one or two word answers such as 'looks better' which clearly need further detail. In addition, it is important to ensure that candidates do not just play 'spot the difference'. For example students notice that the electrical lead is longer and therefore give that as an answer.
- (b) Well answered on the whole although care must be taken by candidates to ensure that they don't repeat the answers given for 3(a)
- (c) Poorly answered on the whole. Candidates responses are generally too generic and few give concrete examples to support their view. For example, an answer such as improved ergonomics should be qualified with a particular feature that has improved. Similarly, the phrase 'advances in technology' is not an answer in itself and should lead to a specific aspect which has improved.

A good example is given below:



Question 4(a) Generally well answered. It was clear that candidates had been well prepared for this question and virtually all candidates scored at least 1 mark in this section.

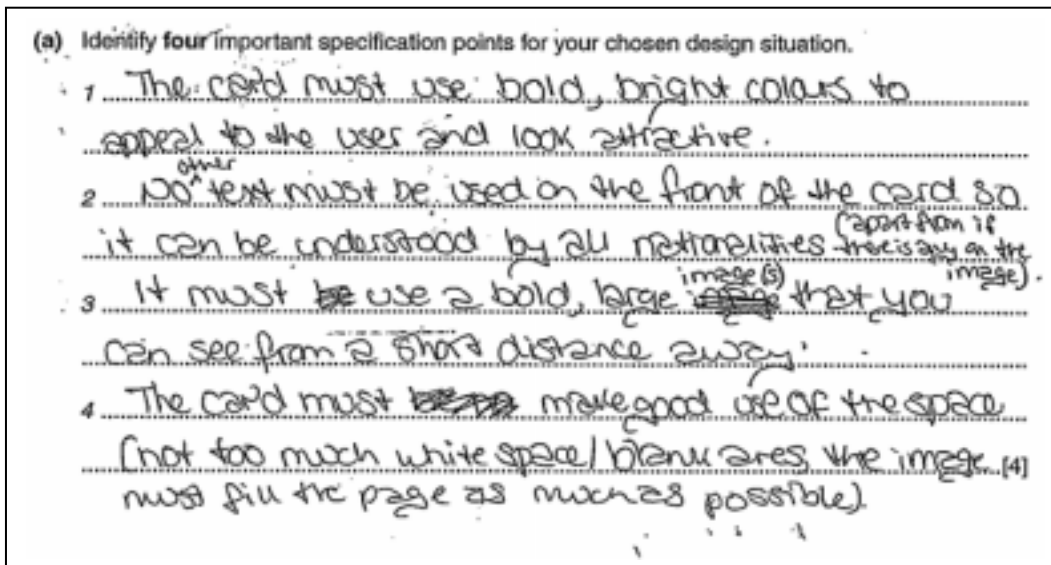
Question 4(b) A mixed response. This question requires candidates to think about the reasons why the iconic product has had such an impact and is considered to be design classic. Few candidates tailored their responses to the triggers in the question, namely design and impact on following products. Some candidates merely repeated the answer in 4a and failed to go beyond the design element.

**Question 5 is designed to provide students with the opportunity to show examiners how they can apply the knowledge derived from their research to one of the design situations given. For purposes of improving future candidate responses two responses have been provided. In both cases the candidates have met the criteria in full.**



Question 5(a) A variable response. Too many candidates either gave one word points such as aesthetics or function, or very general points that could relate to any product. Many merely repeated things that were given them in the brief. For example 'it should be in the Charles Rennie Mackintosh/ Mary Quant style, simply repeating this did not gain a mark. The best responses reflected careful consideration of the design and functional needs of the product and were clear, specific requirements.

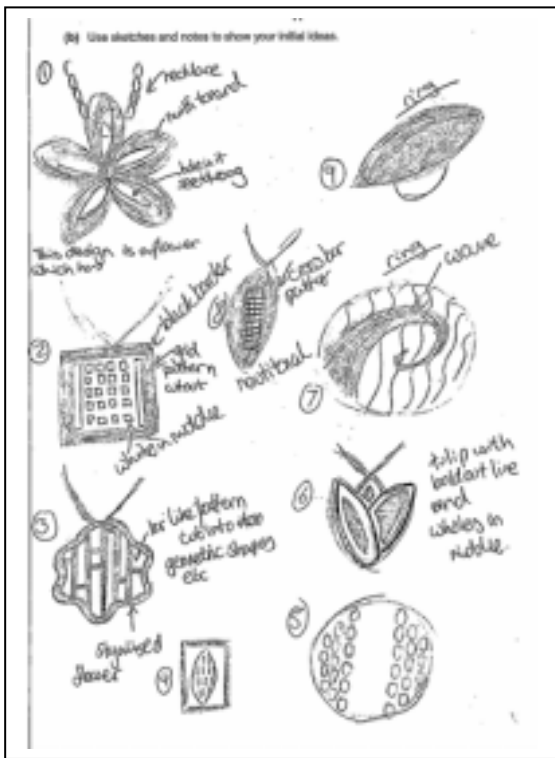
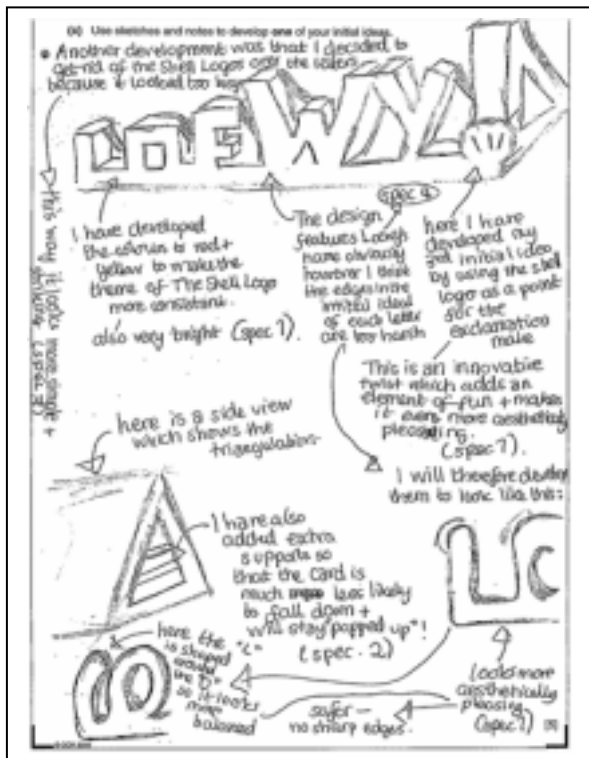
A good example is shown below:



Report on the Components taken in January 2008

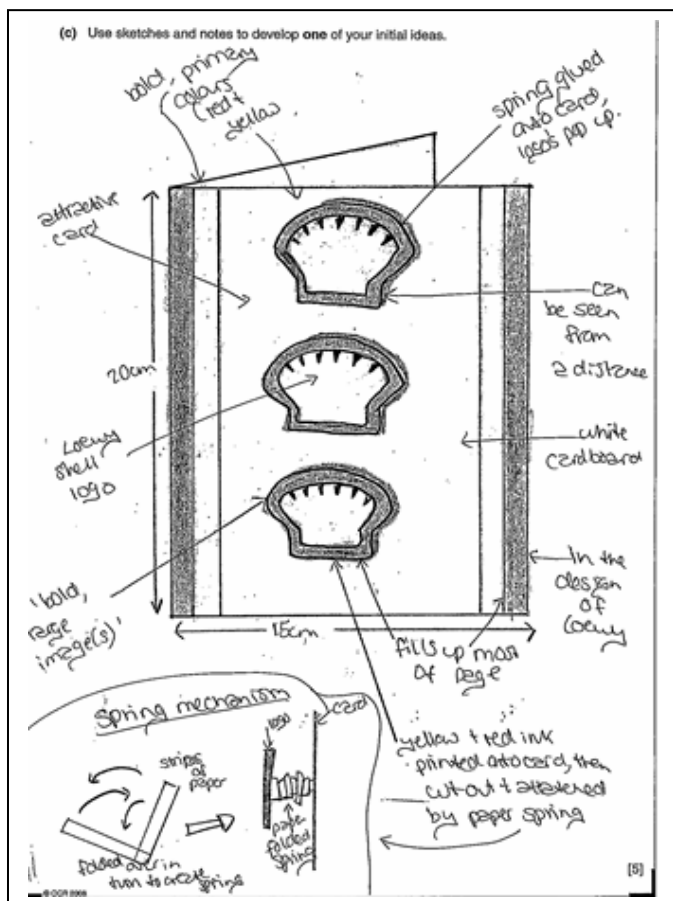
Question 5(b) Generally well answered. Most candidates produced a range of ideas (generally considered to be at least three different ideas) with comments related to the specification. The additional mark for creativity requires candidates to show that they are able to approach the design in an unconventional or novel way.

Two good responses are shown below:



Question 5(c) A mixed response. The best candidates took an idea and systematically developed the solution with comments that referred to the design specification. Food candidates were not expected to 'draw' or sketch in the conventional way but marks were given for descriptions or comments that referred to the specification. Candidates need to be clear that in the development section evidence must be given of their knowledge and understanding of the **subject content**. In addition candidates need to be reminded that it is of the utmost importance that their design addresses the initial need. Any responses that do not address the design need do not gain credit. A few candidates who answered the porch light failed to draw a possible systems diagram which was a requirement for this design brief. It is important to stress that with the systems and control brief, details of the system **must** be given. Likewise, the food brief **does not require a design for packaging** – no credit is given for this because it is **not** asked for.

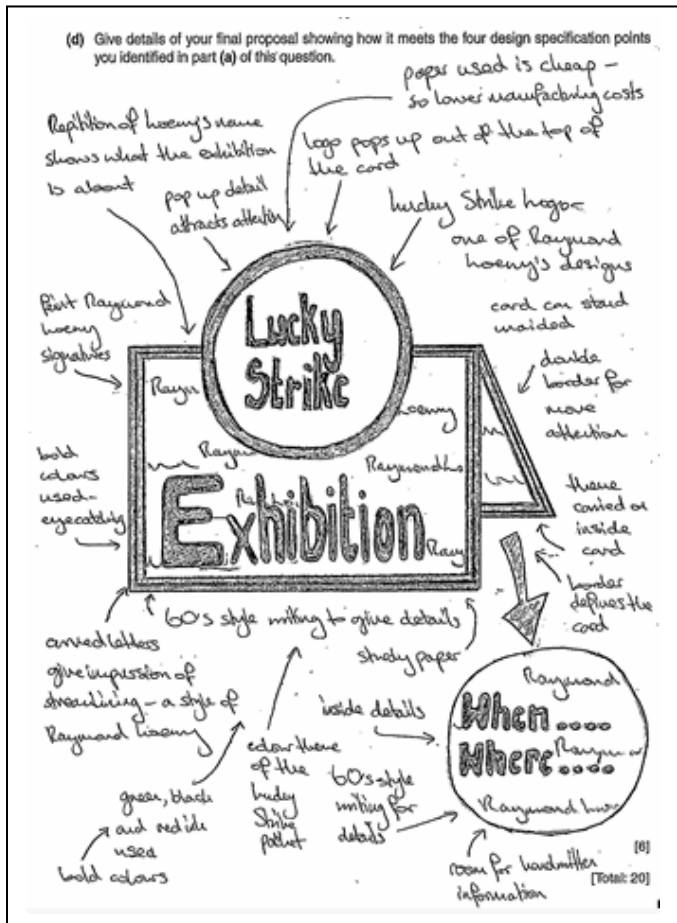
A good response is shown below:



Question 5(d)

A mixed response to this part of the question. Final drawing often lacked detail. Comments relating to the specification should have been a justification for their inclusion not merely a repeat of something said earlier or simply a description.

A good quality response is shown below:



Principal Examiner

# Grade Thresholds

General Certificate of Secondary Education  
Design & Technology: Product Design (Specification Code J900 and J901)  
January 2008 Examination Series

## Unit Threshold Marks

Unit		Maximum Mark	A*	A	B	C	D	E	F	G	U
<b>B801</b>	Raw	90	82	68	54	41	33	26	19	12	0
	UMS	120	108	96	84	72	60	48	36	24	
<b>B802</b>	Raw	60	47	41	35	29	25	22	19	16	0
	UMS	80	72	64	56	48	40	32	24	16	
<b>B803</b>	Raw	90	82	68	54	41	33	26	19	12	0
	UMS	120	108	96	84	72	60	48	36	24	
<b>B804</b>	Raw	60	48	41	34	27	22	17	12	7	0
	UMS	80	72	64	56	48	40	32	24	16	

## Specification Aggregation Results

Overall threshold marks in UMS (ie after conversion of raw marks to uniform marks)

	Maximum Mark	A*	A	B	C	D	E	F	G	U
<b>J900</b>	200	180	160	140	120	100	80	60	40	0

	Maximum Mark	A*	A	B	C	D	E	F	G	U
<b>J901</b>	400	360	320	280	240	200	160	120	80	0

The cumulative percentage of candidates awarded each grade was as follows:

	A*	A	B	C	D	E	F	G	U	Total No. of Cands
<b>J900</b>	0	0	100	100	100	100	100	100	100	1
<b>J901</b>	0	0	0	0	100	100	100	100	100	2

For a description of how UMS marks are calculated see:

[http://www.ocr.org.uk/learners/ums\\_results.html](http://www.ocr.org.uk/learners/ums_results.html)

Statistics are correct at the time of publication.

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