

# **Design and Technology: Product Design Teachers' Guide**

OCR GCSE (Short Course) in Design and Technology: Product Design J900

OCR GCSE in Design and Technology: Product Design J901

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# Course Summary

## Outline

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This GCSE course involves candidates in activities which develop innovation and flair when designing products. The course does not have a material bias. It anticipates that candidates will develop their skills through work in either a narrow or wide range of designing and modelling materials including the use of ICT.

Key features of this course:

- Exposes candidates to creative, design based activities;
- Encourages candidates to explore and develop, experience and express their design ideas;
- Provides a learning experience which is participatory and experimental in nature;
- Values flair and imagination;
- Uses a number of innovative assessment methods;
- Has a unitised assessment scheme, units can be taken in any order;
- Portfolio evidence can be submitted on paper or on CD with video and sound clips;
- Has no material bias, can be taken by all candidates in a Design department;
- Encourages the use of new technology and new materials;
- Has no tiering.

The assessment of candidates is on a unitised basis with short course candidates undertaking Unit B801 and B802 and full course candidates the two short course units plus B803 and B804.

The specification is fundamentally designed to assess a candidate's capability at the end of KS4, however, units will be offered in January and June thereby allowing some flexibility.

## Units

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Unit B801 – Developing and Applying Design Skills

Unit B802 – Designing and Making Innovation Challenge

Unit B803 – Making, Testing and Marketing Products

Unit B804 – Designing Influences

Unit code	Unit Title	Entry Option	Entry	Duration	Weighting
B801	Developing and Applying Design Skills	B801/A B801/B	(01) Paper (02) CD	20 hours	60% Short 30% Full
B802	Designing and Making Innovation Challenge	B802	Paper	6 hours plus 30 minutes reflection time	40% Short 20% Full
B803	Making, Testing and Marketing Products	B803/A B803/B	(01) Paper (02) CD	20 hours	30% Full only
B804	Designing Influences	B804	Paper	1 hour 30 mins	20% Full only

## Rules of Combination

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Short Course Candidates take Unit B801 and Unit B802.

Full Course Candidates take all four units.

Both Full and Short Course candidates undertake Units B801 and B802 allowing for co-teachability and flexibility in scheduling and timetabling.

Important note:

*For an individual candidate (Unit B801 and B803) - a combination of coursework format types within a unit is not permitted.*

*For Units B801 and B803, candidates may enter using a different format for unit B801 than unit B803. For example, a Centre could enter all candidates using CD format for Unit B801 and paper for Unit B803.*

## Restrictions on candidate entries

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Candidates who enter for this GCSE specification may also enter for any other GCSE specification in Design and Technology in the same examination series. Candidates entering for any other Design and Technology specification cannot, however, utilise work completed in Units B801, B802 or B803 of this specification. Conversely, the same is true; coursework undertaken in any other D&T GCSE cannot be used in Units B801, B802 or B803 of this specification.

## Introduction

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### Rationale

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The fundamental aim of this specification is to provide the opportunity to assess a candidate's design and technology capability and to fully reward imagination, innovation and flair. It puts the candidate at the heart of the process, initiating design solutions, developing working models and prototypes, testing and trialling. It encourages individuals to work together for some aspects of their work. It recognises the need to reward careful and considered use of ICT. It ensures candidates consider their ideas and responsibilities to life in the technological world in which we live.

The specification seeks to help candidates become discriminating and informed users and creators of products. It encourages candidates to think and intervene imaginatively to improve the quality of life for society. The assessment scheme provides the opportunity to reward innovation and flair whilst recognising the need to credit thoughtful and rigorous activity over that which is predictable and dull.

This specification is very different to all other Design and Technology specifications in the OCR suite. The emphasis is on developing a candidate's designing and making capabilities through the use of modern media and materials and ICT. The balance of the coursework assessment is heavily weighted towards those skills associated with designing, creativity, originality, flair and imagination.

In all units candidates will need to use those skills necessary to communicate and develop ideas, as well as a desire to utilise ICT within many aspects of their work.

Candidates joining this course should have an aptitude for designing and working with materials and media and using control systems.

Work in portfolio Units B801 and B803 can focus on the use of any of the following: card, clay, food, foam board, paper, plaster, plastics, metal, textiles, wood, 'smart' and other modern materials, electronic and other control systems. It is anticipated, however, that candidates will need to combine materials in order to successfully complete their work in these units. Portfolio evidence for these two units can be presented in electronic format in line with the guidance given in this guide.

Unit B802 is a 6 hour Innovation Challenge focusing on a candidate's imagination, innovation and flair for designing and making. It will require candidates to make swift decisions, take risks, be adventurous and take advice from others. It requires a basic working knowledge of modelling materials and, depending upon the chosen focus, other more specific materials and systems.

Unit B804 will require candidates to answer questions on a broad range of Design Influences. The paper is not tiered.

The specification provides a framework which can be accessed by all candidates with the potential of gaining a GCSE grade G-A\*.

## Working Environment

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It is anticipated that this specification will be taught in a suitably equipped design studio or workshop environment. Candidates must have access to appropriate ICT.

## Certification Title

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OCR GCSE in Design and Technology (Product Design).

## Recommended Prior Learning

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The Key Stage 3 Strategy for Design & Technology forms an excellent introduction to the style of learning and activities appropriate to this course. As in the KS3 strategy, some activities focus on Designing, some on Making, some on the Commercial aspects of products and others on the background behind Design Thinking.

# Unit Details

## Unit B801: Developing and Applying Design Skills (see also Coursework section)

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This unit requires the candidate, working within a context set by a client, the candidate or Centre, to produce a design portfolio. The context can be linked to a candidate's own interests, current trends, a particular design era or designer, industrial practice or the community. Projects may involve an enterprise activity, where candidates identify an opportunity and design to meet a particular need.

The evidence required to be submitted for this unit must be in the form of a portfolio. The portfolio must demonstrate capabilities in a wide range of design skills and must include the use of ICT. The minimum requirement is for ICT to be used for one aspect within this unit. It is, however, anticipated that significantly more emphasis will be placed on the use of ICT throughout this unit.

Portfolio evidence can be submitted on paper or on CD. All electronic evidence must be presented in a format which matches the requirements outlined in the Electronic Portfolio Evidence section of this guide.

The whole activity must not exceed 20 hours of work.

Assessment will be against the Internal Assessment Objectives 1, 2 and 3.

This unit is externally moderated.

Maximum mark for this unit is 90 (120 UMS).

Details concerning UMS are given in the Administration section of this guide.

## Coursework Themes

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Candidates may select one of the following themes as a starting point for the coursework project. Through investigating the theme, candidates can devise their own design brief based on their own interests and ability.

It is not compulsory, however, to select an area for designing from this list of themes. Teachers and/or candidates can devise their own starting point. OCR coursework consultants are available to assist if required.

Extra-terrestrial  
Space holidays  
Xtreme sports  
Celebrations  
Religious and Cultural festivals  
Sports events and matches  
Media, Music, dance, theatre  
Events -Glastonbury, Chelsea flower show  
Prehistoric Times  
Health & Fitness  
Crime, Forensic investigations, 'Cluedo', Murder mystery  
Transportation, Travel  
Food on the move  
Enjoying the Countryside, Picnics  
Fast Food  
Wildlife  
Gap years  
Deep Sea  
Arachnophobia  
Awards – Oscars, BAFTA  
Para-Olympics  
Tourist attractions  
'Statement' Jewellery and Cosmetics  
Accidents, Emergency Services  
Metamorphosis  
Conserving energy  
Rain, Sunshine, Snow & Ice  
Flooding, Extreme weather  
Nostalgia – eras



Architectural environments

Shopping Malls

Parcels

Fashion Week

Look good, feel good

Canteen food

Litter

Gardening, garden sheds, allotments

Libraries and Museums

Sharks

Military Rations

Medieval Banquets

'Raw'

Fast Food

Extend and enhance the design or style of a contemporary product

Design in the style of a contemporary designer

## Unit B802: Designing and Making Innovation Challenge

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This unit consists of a 6 hour un-tiered test, set by OCR, undertaken in two 3-hour sessions, normally on consecutive days. This test can be undertaken at a time convenient to the Centre during either the January or June examination series. The test will assess the candidate's ability to be innovative, demonstrate flair, work with materials and apply knowledge gained throughout the course.

### Themes June 2007

Theme	Most suited to candidates working mainly in these areas
A day on the beach	Resistant Materials, Textiles, Graphic Products, Art & Design
'Take Five'	Food Technology, Home Economics
Rain water	Resistant materials, Systems & Control, Electronics, Systems & Control, Art & Design
Entertainment	Textiles, Food Technology, Home Economics, Graphic Products, Art & Design,

### Themes January and June 2008

Theme	Most suited to candidates working mainly in these areas
A day on the beach	Resistant Materials, Textiles, Graphic Products, Art & Design
Travel	Food Technology, Home Economics
Rain water	Resistant materials, Systems & Control, Electronics, Systems & Control, Art & Design
Entertainment	Textiles, Food Technology, Home Economics, Graphic Products, Art & Design,

### When can the challenge be run?

The innovation challenge should be treated as an external examination. It must be held sometime during the period set aside for external examinations (January & June). Centres make entries in the usual way and establish dates for sessions 1 & 2 and a short 30 minute reflection time (see below) and alert their candidates accordingly. In accordance with OCR regulations, OCR must be advised using form VAF (Visiting Arrangement Form supplied by OCR) when these sessions are to take place to provide the opportunity for an inspection visit.

### Conduct for the running challenge

The Innovation Challenge is a teacher-led activity which stimulates and supports the candidate through a thought-provoking creative exercise. Much of the innovative designing is integrated into the trialing and testing of materials and systems.

The activity is designed to take place in a design room, studio or workshop (not the Centre's examination hall). The candidates are encouraged to take risks, be innovative, take advice from others through controlled and structured peer evaluation, and use resources effectively and efficiently.

The focus of the challenge is for candidates to design and model a workable device or product that has some surprising, innovative features. Contained on the CD that supports this specification is a picture bank which helps to illustrate this concept.

A good example is a bag made during 'A day on the beach' challenge (saved as a PowerPoint file, 'Rubber Gloves' in unit B802 folder). A student used rubber gloves to make a water proof bag, itself quite innovative. The real surprise feature, however, was the fact that once down on the beach, the bag was emptied and inflated to form a beach pillow.

The Centre is asked to provide a 'handling collection' which may consist of existing products or pictures, video etc relating to the theme and an 'inspirational table' which shows examples of products with interesting features or capabilities. It is anticipated that Centres will build up a 'generic' collection adding to this to reflect the spirit of the chosen challenge activity. OCR places no restrictions on the nature of the collection provided to candidates. It is essential, however, that the items, whilst being appropriate, are not, by their very nature, suitable for copying by the candidates in order to provide a workable solution to the challenge. Reference to the picture bank will provide an insight to the extent and nature of the handling and inspirational collections.

Throughout the challenge, candidates are asked to record and communicate their thinking using a pre-printed A4 sized answer booklet supplied by OCR. Candidates respond to the prompts in pre-numbered boxes. It is essential that candidates are carefully guided through the answer booklet by the teacher following the supporting teacher script.

Mid-way through session 1, candidates have the opportunity to present their ideas to a group of between three and four other candidates. Candidates are encouraged to take advice from others through this controlled and structured peer evaluation. It is essential that students treat this part of their work with due deference to the fact that it is an 'examination'.

Candidates model their most creative and exciting idea using a range of easy to handle materials. Depending upon the activity Centres should select any of the following: paper, card, thin plastics, fabric, wire, foil, thin metal sheet, clay, polymorph, foam board, food ingredients, Lego, components and joining devices or indeed any other materials or systems felt appropriate.

Four digital or 'Polaroid' photographs must be taken at specified times by the teacher or teaching and learning assistant to record an individual candidate's progress. These must be able to be processed and attached to each candidate's answer booklet during the challenge. Teachers should ensure that they have the equipment and ability to photograph and process credit card sized pictures promptly. There are a number of options available to teachers, however, experience has shown that the easiest method is to capture pictures on a memory card and then to print out the contents of the card using a card printer. Additional photos may be added as required by the candidate.

Although prototype models are not required to be sent with the candidate answer booklets to the examiner, they should be retained for two months as they may be required for monitoring purposes.

Between sessions 1 and 2 and also at the end of session 2 all the candidate workbooks must be collected and stored safely in accordance with OCR rules and regulations. During the period 24 hours after and within 72 hours of the completion of Session 2 candidates must be provided with the opportunity to reflect on their design activity. Workbooks are returned to candidates and in

examination conditions they complete page 2. 30 minutes is allowed for this activity. Whilst candidates can read and look over their work they must not be allowed under any circumstance to add further information other than to page 2.

Completed workbooks and attendance registers are then sent to the examiner in accordance with OCR regulations for external examinations.

## Resources

Provided by OCR	Provided by Centre
Printed A4 answer booklets	Handling collection - products / video (linked to the context )
Teacher Script	Inspirational products (linked to the context )
	Communicating media Modelling/making materials
	Digital camera / printer or Polaroid camera



Session 1	Organisational instructions	<i>Must say</i>	Say in your own words
<p><b>IMPORTANT</b></p> <p>180 minutes are available for session 1.</p> <p>The times given in this column are suggestions and may be adapted to suit Centre needs.</p>	<p><b>Before the candidates enter the room.</b></p> <p>Arrange room for candidates to sit in groups of three / four.</p> <p>Lay out inspiration / handling collection. Printed resources. These should be available for both sessions.</p> <p>Place a candidate answer booklet in each workspace. Additional pens / pencils.</p> <p>Modelling/constructing materials. Have a wide range of appropriate materials, tools, equipment available.</p> <p><b>When candidates enter the room.</b></p> <p>Candidates sit in working groups of 3 or 4 students.</p> <p><b>Rules of the Innovation Challenge.</b></p>	<p><i>Session 1 – Designing / Session 2 - Making</i></p> <p><i>Over the next two sessions you are going to be involved in a D&amp;T activity.</i></p> <p><i>By the end of the session, your sketches, notes, models, prototypes should show that your ideas would work.</i></p> <p><i>You are doing this challenge to show just how good you are at coming up with new and creative ideas.</i></p>	<p>Explain the meaning of work – not ‘decorated’ prototypes, but experiments with ideas – trying things out to see if they work/function.</p> <p>It is important that you try your best and feel that you can try any idea out – however crazy or impossible it might seem to start with. Be creative.</p>

		<p><i>You can develop your ideas in whatever ways you think best – through sketching, writing or making models.</i></p> <p><i>Use whatever ways that will help show your most creative work.</i></p> <p><i>The examination board has given you each an answer booklet to record your progress throughout the challenge.</i></p> <p><i>Although you are not working in an examination hall you must still treat this activity as an examination. You should not talk unless you are told to do so by a member of staff. Part of the examination requires you to explain your work and receive comments from your work group. This will be explained by the member of staff before this activity takes place.</i></p> <p><i>Teaching staff are here to monitor health and safety and organise the running of the challenge. Staff are not allowed to give advice or guidance about your design or making activity. However, you are allowed to ask for clarification if you are not sure about a task.</i></p> <p><i>We will explain everything as we move through the two sessions.</i></p> <div style="border: 2px solid red; padding: 5px;"><p><b><i>PLEASE REMEMBER THAT THE EXAMINER WILL ONLY SEE THE WORKBOOK.</i></b></p><p><b><i>IT IS IMPORTANT THAT EVIDENCE OF ALL THINKING, 2D DESIGNING, AND 3D MODELLING, (USING PHOTOGRAPHS), IS INCLUDED IN THIS WORKBOOK.</i></b></p></div>	<p>Use it to record everything.</p> <p>In the world of work, many companies share ideas and discuss possibilities. They are often called 'think tanks'.</p>
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<p><b>5 Minutes</b></p>	<p><b>Candidates fill in the following information on page 1 of the answer booklet:</b></p> <p>Candidate name, candidate number and centre number. Fill in the title of the Innovation Challenge that you will complete and the date session 1 and session 2 will take place.</p> <p><b>Start the innovation Challenge.</b></p> <p>Introduction to the context.</p> <p>Read through the challenge, (supplied on a single separate sheet) explain anything that is needed. Explain the need to respond to the 'supplementary information'.</p>	<p><i>There will be times when you will be asked to draw or write particular things in your booklet.</i></p> <p><i>We will be taking photographs of your models as they develop. These photos will be stuck in your booklet.</i></p> <p><i>You must develop your own ideas during these sessions. The 'Reflect and Record' activity will allow you to take advice and suggestions from the others in your group. If you think the ideas are suitable. You will be able to modify your design and incorporate their feedback.</i></p> <p><i>You must produce your own booklet and your own model. You must not move forward in the workbook until instructed to do so. You are allowed to return to previously completed sections if you wish to do so.</i></p> <p><i>We are now going to start the challenge.</i></p> <p><i>If at any time you don't understand what I tell you, or what you have to do, then ask.</i></p> <p><i>There are four challenges outlined on the sheet provided. We are going to carryout task..... . To ensure that you complete the correct task please draw a line through the other three tasks.</i></p> <p><i>We will now read through the task together.</i></p>	<p>Don't be shy or embarrassed – it is important that everyone understands so that you all achieve your best.</p>
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<p><b>15 minutes</b></p>	<p><b>The inspiration and handling collection.</b></p> <p>Introduce the handling collection / resources. Talk about the 'wow factor' that makes these products interesting, creative etc Allow a few minutes for them to have a look at, and talk about the collection.</p> <p>Introduce the inspirational collection explain why these items have been selected, their inspirational features or use of material. Encourage students to examine the two collections and ask questions about them.</p>	<p><i>You are allowed to ask questions about any of the items that I am about to show you. Think about each of the items. How could these items aid your design when working on the challenge activity we just read through?</i></p>	
<p><b>THE FOLLOWING SECTION SHOULD BE DONE IN BOX 1 IN YOUR ANSWER BOOKLET</b></p>			
<p><b>6 minutes</b></p>	<p><b>Box 1. Initial Thoughts.</b></p> <p><b>Open your answer booklet and find box 1.</b></p> <p><b>Allow 6 minutes with a reminder after 5 minutes.</b></p>	<p><i>The first thing we would like you to do is to put some of your first thoughts down on paper.</i></p> <p><i>Remember, we want you to be as creative as possible, so sketch and add notes of any ideas you have, even if they seem a bit risky or outrageous at this stage.</i></p> <p><i>We really want you to feel able to 'let your mind go out to play'.</i></p> <p><i>In this box put down your initial thoughts. You have 6 minutes, so work quickly. Try and remain focused.</i></p>	

THE FOLLOWING SECTION SHOULD BE DONE IN BOX 2 IN YOUR ANSWER BOOKLET

<p><b>8 minutes</b></p>	<p><b>Box 2.</b> <b>Allow 8 minutes with a reminder after 6 minutes.</b></p>	<p><i>Look at your initial thoughts. Highlight the areas that interest you.</i></p> <p><i>Think about the challenge and the supplementary information you have been given.</i></p> <p><i>Which three ideas are worth developing?</i></p> <p><i>Then:</i></p> <p><i>Fill in box 2 with three possible design briefs.</i></p>	
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	<p><b>PRESENTATIONS.</b>  <b>Teacher Introduction to the presentations.</b>  <b>Same table / group arrangements as before.</b></p>	<p><i>You will have the opportunity to tell the other students in your group what you are designing and modelling.</i></p> <p><i>You can show drawings / card models if it helps to communicate your idea.</i></p> <p><i>Students in your group can ask you questions.</i></p> <p><i>Students in your group can suggest improvements / developments to your idea.</i></p>	<p>Explain about the presentations.  The value of sharing ideas.  Suggesting modifications.  Discussing further possibilities.</p>
<b>THE FOLLOWING SECTION SHOULD BE DONE IN BOX 9 IN YOUR ANSWER BOOKLET</b>			
5 minutes	<b>Box 9. Reflect and Record.</b>	<i>Use the space provided in Box 9 to plan your presentation.</i>	
<b>GROUP WORK</b>			
<p><b>10 - 15 minutes</b>  <b>Timings will need to be flexible due to group size.</b></p>	<p><b>Within working groups.</b>  <b>(3 or 4 students)</b></p> <p><b>Candidates give presentations of their ideas and receive feed back.</b></p> <p>Staff to overview process and encourage candidates to be positive, constructive and fair with time allocations.</p>	<p><i>You are to present your ideas to members of your group. Your presentation should last approximately 2 minutes. 2 minutes of question and answer activity will then take place.</i></p> <p><i>You should make brief notes of your group's feedback about your design to help complete the next activity.</i></p>	

**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 10 IN YOUR ANSWER BOOKLET**

<b>6 minutes</b>	<b>Box 10. Green Zone.</b>	<p><i>Record any comments / suggestions made by your working group.</i></p> <p><i>What could you change / modify.</i></p>	
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**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 11 IN YOUR ANSWER BOOKLET**

<b>5 minutes</b>	<b>Box 11 Question time.</b>	<p><i>Answer the questions.</i></p>	<p>Add additional support / explanation if appropriate.</p>
<b>10 minutes</b>	<p><b>Modelling Kit.</b></p> <p>Introduction to the modelling/ prototyping materials available.</p>	<p><i>I am about to introduce the modelling materials we have available to you.</i></p> <p><i>You are not required to use every material provided. Only appropriate materials for your design should be used.</i></p> <p><i>If you require a specific material that is not here you may request it.</i></p>	<p>Staff may wish to demonstrate some materials, construction/assemble possibilities etc.</p> <p>If the candidates know what is available, it will help them in the construction/assembly of their model/prototype.</p> <p>They may ask for additional items.</p>





Session 2	Organisational instructions	<i>Must say</i>	<i>Say in your own words</i>
<p><b>IMPORTANT</b></p> <p>180 minutes are available for session 2.</p> <p>The times given in this column are suggestions and may be adapted to suit Centre needs.</p> <p>A 10 Minute Break is included at the end of making session 3. This may be moved to suit centre needs.</p>	<p><b>Before the candidates enter the room.</b></p> <p>Arrange room for candidates to sit in the same groups as session 1.</p> <p>Lay out inspiration / handling collection. Printed resources.</p> <p>Modelling materials. Have a wide range of appropriate materials, tools, equipment available.</p> <p><b>When candidates enter the room.</b></p> <p>Candidates sit in the same working groups. Give out part completed workbooks to candidates. Candidates who have not attended session 1 may not attend session 2.</p> <p><b>Rules of the Innovation Challenge.</b></p>	<p><i>In Session two of the innovation challenge you will be making your design.</i></p> <p><i>You will have longer periods of uninterrupted time so that you can model/produce your idea.</i></p> <p><i>You will be modelling/producing your design so that you, your teacher and the examiner can see your ideas.</i></p> <p><i>You should not talk to each other unless directed to do so. Teaching staff are here to monitor health and safety and organise the running of the challenge. Staff are not allowed to give advice or guidance about your design or making activity. However, you are allowed to ask for clarification if you are not sure about a task.</i></p> <p><i>We will continue to explain everything as we move into the final stages of this challenge.</i></p> <p><i>You will be using tools and equipment, so your normal risk assessments must apply.</i></p>	<p>Explain if necessary the departments expectations with regard to health and safety.</p>

**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 14 IN YOUR ANSWER BOOKLET**

<p><b>5 minutes</b></p>	<p><b>Box 14. Reflection.</b></p>	<p><i>You have 5 minutes to look back over the work you did in session 1.</i></p> <p><i>Look carefully at Box 3. Read your design brief, user group and specification.</i></p> <p><i>Are you still on track?</i></p> <p><i>Fill out box 14. (page 5).</i></p>	
<p><b>40 minutes</b></p>	<p><b>Go Make!</b></p> <p>After 30 minutes stop the candidates and tell them they have 10 minutes remaining in this section.</p>	<p><i>You will now have three manufacturing/modelling sessions.</i></p> <p><i>Session 1</i></p> <p><i>You have 40 minutes to start constructing/making your product. This time will go very quickly. You must be organised and work efficiently.</i></p> <p><i>A photograph (photo 2) will be taken at the end of 40 minutes to record your progress. Additional photographs may be taken and added in the 'additional space' section of the workbook if required.</i></p>	

**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 15 IN YOUR ANSWER BOOKLET**

<p><b>5 minutes</b></p>	<p><b>Box 15.</b></p>	<p><i>Fill in progress report 1.</i></p> <p><i>Be honest about the problems you have experienced.</i></p> <p><i>What are the possible solutions to your problems?</i></p> <p><i>Check that your model/prototype is photographed.</i></p>	
<p><b>40 minutes</b></p>	<p><b>Go Make!</b></p> <p>After 30 minutes stop the candidates and tell them they have 10 minutes remaining in this section.</p>	<p><i>You have 40 minutes to continue constructing your product.</i></p> <p><i>A photograph (photo 3) will be taken at the end of 40 minutes to record your progress. Additional photographs may be taken and added in the 'additional space' section of the workbook if required.</i></p>	



<p><b>2 Minutes</b></p>	<p><b>Tidy Workspace.</b>  <b>To allow work in workbooks to continue.</b>  <b>Staff to organise final photographs.</b></p>	<p><i>Clear workspace of tools, equipment, materials etc.</i>  <i>You need to have adequate space to complete work in workbook.</i></p>	
<p><b>10 minutes</b></p>	<p><b>BREAK.</b></p> <p>Allow candidates 10 minutes to have a drink, use the toilet, get some fresh air if possible. They may stay in the same room as the challenge if supervised, but are not allowed to work in their booklets or on their models.</p>	<p><i>Close the booklets. No further work on models until after break.</i></p>	
<p><b>THE FOLLOWING SECTION SHOULD BE DONE IN BOX 18 IN YOUR ANSWER BOOKLET</b></p>			
<p><b>6 minutes</b></p>	<p><b>Box 18. Evaluation.</b></p> <p><b>Regroup the candidates at their tables.</b></p> <p><b>Allow 6 minutes. Give a reminder after 4 minutes.</b></p> <p><b>Fill in Box 18</b></p>	<p><i>You are about to complete the evaluation of your design and prototype product. Answer the following sections in as much detail as possible. Remember that you are allowed to use the additional space in the workbook.</i></p> <p><i>What did you want to achieve, but couldn't?</i></p>	<p>Explain there is no more time for construction, but they can still communicate via their booklets.</p>

**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 19 IN YOUR ANSWER BOOKLET**

<p><b>7 minutes</b></p>	<p><b>Box 19. Summing up.</b></p> <p><b>Fill in box 19.</b></p> <p><b>Allow 7 minutes. Give a reminder after 5 minutes.</b></p>	<p><i>List the most successful things about your product.</i></p> <p><i>Do you think your intended users would be interested in your product?</i></p> <p><i>If you had more time, what would you do?</i></p>	
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**THE FOLLOWING SECTION SHOULD BE DONE IN BOX 20 IN YOUR ANSWER BOOKLET**

<p><b>15 minutes</b></p>	<p><b>Box 20.</b> Allow 15 minutes for this task.</p> <p>After 11 minutes move candidates on to 'fast forward 2'.</p> <p><b>Fast Forward 2.</b></p>	<p><i>This session is due to finish at .....</i></p> <p><i>Look at your original specification in box 4.</i></p> <p><i>Have you done what you set out to do?</i></p> <p><i>Use box 20 to record your thoughts.</i></p> <p><i>You may wish to comment on the whole experience. How you personally found the challenge.</i></p> <p><i>Use the fast forward box to list the main features of your product if it was manufactured.</i></p>	<p>Materials, surface finish, colour, texture, smell, etc, as appropriate.</p>
	<p><b>Collect in workbooks. Check that final photographs have been taken and glued in. Examination officer to store workbooks securely.</b></p>		

<b>30 minutes</b>	<b>Time to Reflect.</b> <b>Between 24 and 72 hours after the challenge was completed - return to page 2 in the booklet.</b>	<i>You are not allowed to make any alterations to your work from session 1 or 2 in your workbook.</i>  <i>Now that the challenge has been completed and you have had time to think about what you did, you can fill in the 'Time to reflect' box on page 2. Sketches, notes and photographs can be used here.</i>  <i>This is not an evaluation of your work. It is a chance for you to review your ideas and put forward any further suggestions you may have had to improve your product further.</i>	
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## Unit B803: Making, Testing and Marketing Products (see also Coursework Section)

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This unit requires the candidate to either develop further the work undertaken in either Unit B801 or Unit B802 or develop an existing product or new product of the candidates choosing.

Candidates produce:

- an artefact in the form of a prototype product capable of evaluation;
- a marketing presentation.

Whilst candidates are required to produce a tangible 3D product only portfolio evidence including photographs (paper or CD) and video (CD format only) will be moderated. It is essential that points 2 & 3 below contain sufficient clear evidence to support the mark awarded (in internal assessment objective 4) by the Centre.

The candidate should consider how the prototype product could be manufactured in quantity by identifying an appropriate hypothetical manufacturing system and outlining any changes necessary to the chosen design to allow this form of manufacture to take place.

The evidence presented for assessment must be a marketing presentation aimed at either a prospective manufacturer, supplier, buyer, retailer or commissioning client of the product containing the following:

1. A design concept page, which includes a detailed specification;
2. Digital images/photographs of the prototype product providing evidence of important stages of manufacture and the candidates making skills;
3. User evaluation including evidence of testing the product prototype;
4. Details of any necessary modifications to improve the product prototype;
5. Opportunities for quantity manufacture;
6. Opportunities for packaging/display, and presentation of the prototype product to the customer.

The marketing presentation can be submitted on paper or on CD. All electronic evidence must be presented in a format which matches that contained in the Electronic Portfolio Evidence section of this guide.

The whole activity must not exceed 20 hours of work.

This unit is marked against internal assessment objectives 4 and 5 and externally moderated.

If candidates work in groups, each candidate must take responsibility for a uniquely definable aspect of the overall 3D model or prototype product. Each candidate must provide unique evidence for assessment against the internal assessment objectives with additional evidence to indicate the performance of the candidate's design within the context of the performance of the overall project.

## Unit B804: Designing Influences

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This unit will test candidates' knowledge and understanding of the factors that influence designing listed in sections 3.4, Section A and 3.4, Section B of the specification. The question paper has no material bias.

The question paper contains 5 compulsory questions and is divided into two sections A and B.

Section A addresses the content contained in Section 3.4 of the specification.

Section B addresses the content contained in Section 3.4 and will focus upon iconic products, trends and trend setters from a range of eras and design movements

The questions in both sections are knowledge and application based and require students to demonstrate their understanding through the use of single words, short sentences, simple annotated sketches and diagrams and (in the case of questions aimed at C performance and above) through discussion requiring short free response style answers.

Candidates should recognise the influences on design of iconic products, trends and trend setters and significant technological developments, from the following range of eras and movements; Victorian (1840-1900), Art Nouveau (1890–1914), Art Deco (1920's–1930's), War & Post War years (1940's-50's), the 1960's, 70-80s and the 1990's - present.

For each examination cycle there will be a published list of iconic products, trends and trend setters drawn from the range of eras and movements as specified above.

Candidates will be required to 'discuss' the merits, contribution, significance, etc. of these influential trends and developments in Design and Technology.

Teachers need ONLY prepare their candidates to answer questions from the perspective of the focus material linked to candidate's main experiences during the course.

To effectively prepare candidates for this paper, teachers will need to collect a range of suitable products, pictures, video or other resource material. Candidates will need to reflect upon these resources drawing out the 'design cues' that they or other modern day designers can feed on in order to develop desirable products.

For examination in June 2007 Centres should prepare their candidates to answer questions on the following: See opposite.

	Eras and movements	Trend setter	Iconic product
1	30s and 40s	Bakelite	Radio, TV or other domestic product made predominately in Bakelite
2	30s	Harry Beck	London Underground map
3	90s	Microchips	Mobile phone
4	90s	Goretex	Sports clothing
5	40s	British Government	War time rationing

For examination in January and June 2008 Centres should prepare their candidates to answer questions on the following:

	Eras and movements	Trend setter	Iconic product
1	Art Nouveau	Charles Rennie Mackintosh	Mackintosh Chair
2	30s-60s	Raymond Loewy	The Shell logo
3	50s	Transistors	Bush TR82 Transistor radio
4	60s	Mary Quant	The Mini Skirt
5	70s & 80s	Processed Food	Pot Noodle

For examination in January and June 2009 Centres should prepare their candidates to answer questions on the following:

	Eras and movements	Trend setter	Iconic product
1	Victorian	Isambard Kingdom Brunel	SS Great Britain
2	60s - present	Wally Olins	Orange brand
3	90s	LCD display	Laptop computer
4	70s – 80s	Vivienne Westwood	PVC clothing
5	2000 - Present	Jamie Oliver	Healthy School Meals

# Coursework

Whilst the specification does not have a material bias, candidates are advised, as a minimum, to have experiences of working with:

- designing and modelling materials (paper, card, foam board, rigid foam);
- ICT;
- Experience working with either of the following categories of materials to provide for a wider range of prototype and modelling activities;
- light production materials (thin plastics, wood, metal, textiles, fabrics and threads, components or food materials).

Where necessary other materials should be included in order to allow candidates choice in their coursework activity in Unit B803. These may include heavier sections of materials from the above list, clay, plaster, electronic and other control systems, 'smart' and other modern materials or more varied and complex food ingredients.

It is envisaged that the coursework evidence presented for assessment will represent 20 hours (Unit B801) for the GCSE Short Course and 40 hours (Units B801 and B803) for the Full Course. Some of the work, by its very nature, may be undertaken outside school e.g. research work, testing.

OCR expects teachers to supervise and guide candidates who are undertaking work which is internally assessed (i.e. coursework project). The degree of teacher guidance in candidates' work will vary according to the work being undertaken. It should be remembered, however, that candidates are required to reach their own judgements and conclusions.

When supervising internally assessed coursework projects, teachers are expected to:

- offer candidates advice about how best to approach their work;
- exercise continuing supervision of work in order to monitor progress, ensure safe working and to prevent plagiarism;
- ensure that the work is completed in accordance with the specification requirements and can be assessed in accordance with the internal assessment objectives and procedures.

Internally assessed coursework projects should be completed in the course of normal curriculum time and supervised and marked by the teacher. As with all internally assessed work, the teacher must be satisfied that the work submitted for assessment is the candidate's own work. Candidate authentication declarations must be completed by candidates prior to certification.

## Marking Criteria for Coursework

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This specification requires candidates to demonstrate fully their design and making capability. They should combine skills with knowledge and understanding in order to design and make desirable products.

The GCSE assessment objectives of: materials, components, processes, techniques and industrial practice (AO1) for designing and making quality products (AO2) and for evaluating processes and products and examining the wider effects of design and technology on society (AO3) are assessed through the Internal Assessment Objectives (1-5) shown below.

OCR Internal Assessment Objectives		QCA Specification Assessment Objectives		
		AO1	AO2	AO3
1	Identification of a need or opportunity leading to a design brief		2	4
2	Research into design brief resulting in a specification for the design of a product	9	10	4
3	Generation of design proposals	9	42	10
	Unit B801 total marks (90)	18	54	18
4	Prototype manufacture	9	40	6
5	Testing and Marketing	9	14	12
	Unit B803 total marks (90)	18	54	18

### Internal Assessment Objectives

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Unit B801 is assessed against Internal Assessment Objectives 1, 2 and 3.

Unit B803 is assessed against Internal Assessment Objectives 4 and 5.

The weighting of the marks provides an indicator of the time that candidates should spend on each part of the project.

Applying the internal assessment objectives to candidates' work

In Internal Assessment Objective 1 there is 1 level of response group consisting of 4 statements.

In Internal Assessment Objective 2 there are 3 level of response groups.

In Internal Assessment Objective 3 there are 4 level of response groups.

In Internal Assessment Objective 4 there are 3 level of response groups.

In Internal Assessment Objective 5 there are 4 level of response groups.

When considering these statements reference must be made to the bulleted points printed in the left column of each internal assessment objective.

### **Internal Assessment Objective 1**

When judging a candidate's ability you will need to match the evidence against one of the statements. For the two higher level statements you will need to make a qualitative decision over two mark points, 3/4 or 5/6. Maximum total mark for this objective is 6.

### **Internal Assessment Objective 2**

When judging a candidate's ability you will need to match the evidence against each level of response group. All the statements are hierarchal. Maximum total mark for this objective is 23.

### **Internal Assessment Objective 3**

When judging a candidate's ability you will need to match the evidence against each level of response group. All the statements are hierarchal. Maximum total mark for this objective is 61.

### **Internal Assessment Objective 4**

When judging a candidate's ability you will need to match the evidence against each level of response group. All the statements are hierarchal.

Maximum total mark for this objective is 55.

### **Internal Assessment Objective 5**

When judging a candidate's ability you will need to match the evidence against each level of response group. All the statements are hierarchal. Maximum total mark for this objective is 35.

Identification of a Need or Opportunity leading to a Design Brief	Level of Response	Mark Range
<ul style="list-style-type: none"> <li>provide a detailed description of the design need using various means of communication;</li> </ul>	A statement of the design need.	<b>0-1</b>
<ul style="list-style-type: none"> <li>extract from verbal, visual and statistical information the essential problems to be solved;</li> </ul>	Some consideration of the design need or the intended user/users leading to a design brief for the product.	<b>2</b>
<ul style="list-style-type: none"> <li>identify the range of users and the market for which the product is intended;</li> </ul>	Consideration of both the design need and the intended user/users leading to a clear design brief for the product.	<b>3-4</b>
<ul style="list-style-type: none"> <li>develop a design brief for a marketable product which is innovative and might involve some degree of risk taking.</li> </ul>	Detailed description of both the design need and intended user/users leading to a clear and precise design brief for the product.	<b>5-6</b>
<b>Maximum mark</b>		<b>6</b>

Internal Assessment Objective 2

Total Marks 23

Research into the Design Brief which results in a Specification for the design of the Product	Level of Response	Mark Range
<p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>• examine the intended purpose of the product;</li> <li>• identify and collect data relevant to the product(s) and its users;</li> <li>• identify opportunities for developing new and innovative products to improve upon the weaknesses of existing products;</li> <li>• understand the issues that expand and detail the requirements of the product;</li> <li>• demonstrate an ability to express the results of research and analysis in the form of a suitably detailed specification.</li> </ul>	Limited research of intended use.	<b>0-1</b>
	Intended use of product examined with some data identified or collected.	<b>2-3</b>
	Intended use of product examined with important data identified and collected.	<b>4-5</b>
	Intended use of product examined with all significant data identified and collected.	<b>6-7</b>
	Cursory examination of the function of the product.	<b>0-2</b>
	Examination of the function of the product.	<b>3-4</b>
	Full examination of the function of the product addressing some user issues.	<b>5-6</b>
	Full examination of the function of the product addressing user issues thoroughly.	<b>7-8</b>
	Specification identifying some basic requirements.	<b>0-2</b>
	Specification identifying some key features.	<b>3-4</b>
Specification identifying all key features.	<b>5-6</b>	
A detailed and justified specification.	<b>7-8</b>	
<b>Maximum mark</b>		<b>23</b>



## Internal Assessment Objective 3

Total Marks 61

Generation of Design Proposals	Level of Response	Mark Range
<p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>generate and record the development of design proposals that are innovative, show flair and imagination;</li> <li>consider user needs and issues when developing ideas;</li> <li>appraise design ideas for suitability, value and consequence;</li> <li>consider Aesthetics, Ergonomics and Function;</li> <li>use suitable communication techniques including graphics and ICT to develop and model design proposals and production systems;</li> <li>use modelling to check on the feasibility of design ideas; (1g)</li> <li>identify, with reasons for selection/rejection, the chosen design proposal(s) for prototype manufacture;</li> <li>check that the design proposal meets legislative standards. Consider patents and copyrights;</li> <li>have control on developing the product for manufacture, identify within the design proposals the resources needed for the prototype to be realised;</li> <li>consider, using examples, those aspects of the design which could most easily be manufactured in quantity;</li> <li>produce a final product specification.(1e)</li> </ul>	<p>One or more solutions proposed showing little innovation or flair.</p>	<b>0-5</b>
	<p>Several solutions proposed showing some innovation or flair.</p>	<b>6-12</b>
	<p>A range of ideas leading to the development of a solution showing innovation and flair.</p>	<b>13-18</b>
	<p>A range of ideas leading to the development of a full and thorough solution showing much innovation, flair and some risk taking.</p>	<b>19-25</b>
	<p>Little consideration given to Aesthetics, Ergonomics or function.</p>	<b>0-3</b>
	<p>Some consideration of Aesthetics, Ergonomics and function.</p>	<b>4-5</b>
	<p>Consideration of Aesthetics, Ergonomics and function.</p>	<b>6-7</b>
	<p>Appropriate consideration given to Aesthetics, Ergonomics and function.</p>	<b>8-10</b>
	<p>Little or no evaluation of designs against specification and product standards.</p>	<b>0-2</b>
	<p>Cursory evaluation of designs against specification and product standards.</p>	<b>3-4</b>
	<p>Design proposal chosen, supported by clear evaluation against the specification and product standards.</p>	<b>5-6</b>
	<p>Design proposal chosen as a result of detailed evaluation against the specification and product standards.</p>	<b>7-8</b>
	<p>Work displays a low standard of communication technique.</p>	<b>0-2</b>
	<p>Communication will be of a reasonable standard but using a limited range of techniques.</p>	<b>3-4</b>
	<p>Communication will demonstrate clarity, be of a high standard and employ a range of appropriate techniques.</p>	<b>5-6</b>
	<p>Communication will demonstrate clarity and confidence, be of a high standard and employ a wide range of appropriate techniques.</p>	<b>7-8</b>
<p>Use of ICT limited to word or data processing and simple drawing.</p>	<b>0-3</b>	
<p>Use of ICT includes basic CAD or other computer applications.</p>	<b>4-5</b>	
<p>ICT includes good use of CAD or other computer applications.</p>	<b>6-7</b>	
<p>ICT includes work which fully demonstrates the use of appropriate CAD or other computer applications.</p>	<b>8-10</b>	
<b>Maximum mark</b>		<b>61</b>

Prototype manufacture	Level of Response	Mark Range
	<b>Digital images/photographs of the completed prototype product must be available for moderation (in the marketing presentation) for any marks to be awarded for this objective.</b>	
Candidates will need to: <ul style="list-style-type: none"> <li>• make a 3D prototype using appropriate media. The prototype to have working features to demonstrate how the product will function;</li> <li>• select and use the appropriate tools, equipment and processes effectively and safely to make products that match the specification;</li> <li>• use CAM where appropriate;</li> <li>• economically prepare materials;</li> <li>• select and use appropriate pre-manufactured components;</li> <li>• be prepared to adapt working procedures in response to changing circumstances;</li> <li>• purposefully deploy a range of skills and techniques appropriate to the task including those necessary to ensure realism of the prototype product.</li> </ul>	Has used a limited range of appropriate materials, tools and equipment.	<b>0-4</b>
	Has overcome problems as they arise using appropriate materials, tools and equipment.	<b>5-8</b>
	Has made economic and efficient use of materials, tools and equipment modifying the application of these if appropriate.	<b>9-11</b>
	Resourceful and adaptable with materials, tools and equipment and to a high degree of precision.	<b>12-14</b>
	With frequent prompting uses basic skills and techniques appropriate to the task. Little understanding of safe working practices.	<b>0-4</b>
	With some guidance has used a range of skills and techniques appropriate to the task. Reasonable understanding of safe working procedures.	<b>5-8</b>
	With a normal level of supervision, has combined a range of skills and techniques appropriate to the task. Good understanding of safe working procedures.	<b>9-11</b>
	Has independently combined a range of skills and techniques appropriate to the task. High understanding of safe working procedures.	<b>12-14</b>
	The product will exhibit a low standard of outcome and may not be successfully completed	<b>0-4</b>
	The product will exhibit a reasonable standard of outcome, be mainly complete and will satisfy the specification with a limited degree of success.	<b>5-11</b>
	The product will exhibit a good standard of outcome, will be complete and will function as intended.	<b>12-19</b>
	The product will be completed to a high quality and will fully meet the requirements of the final product specification.	<b>20-27</b>
<b>Maximum mark</b>		<b>55</b>

Testing, Evaluating and Marketing	Level of Response	Mark Range
<b>A marketing presentation must be available for moderation for ANY marks to be awarded for this objective.</b>		
<p>Candidates will need to:</p> <ul style="list-style-type: none"> <li>• test and evaluate prototype product against the Design criteria;</li> <li>• give details of any review processes and necessary modifications to improve the product prototype</li> <li>• consider how the design prototype could be manufactured in quantity by either batch, repetitive flow, continual flow or other production system;</li> <li>• produce a marketing presentation to either a prospective manufacturer, supplier, company buyer (not end user/consumer), or retailer of the product.</li> </ul> <p>Marketing presentation must contain points 1-6:</p> <ol style="list-style-type: none"> <li>1. A design concept page, which includes a detailed specification;</li> <li>2. Digital images/ photographs of the prototype product providing evidence of important stages of manufacture and the candidates making skills;</li> <li>3. User evaluation including evidence of testing the product prototype;</li> <li>4. Details of any necessary modifications to improve the product prototype;</li> <li>5. Opportunities for quantity manufacture;</li> <li>6. Opportunities for packaging, and presentation of the prototype product to the customer.</li> </ol>	Superficial evidence of evaluation with no reference to the Design Specification.	<b>0-2</b>
	Evidence of evaluation with some reference to the Design Specification.	<b>3</b>
	Evidence of testing by a user and evaluation with reference to the Design Specification	<b>4-5</b>
	Evidence of thorough testing by a user and full evaluation with reference to the Design Specification.	<b>6-7</b>
	Design modifications are suggested with some detail.	<b>0-2</b>
	Design modifications are suggested but lack detail.	<b>3-4</b>
	Design modifications presented with reasonable detail.	<b>5</b>
	Design modifications presented in full detail.	<b>6-7</b>
	Consideration of quantity production leading to a statement identifying a suitable quantity manufacturing system for the prototype product.	<b>0-1</b>
	Consideration of quantity production leading to limited but clear details of a suitable quantity manufacturing system for the prototype product.	<b>2-3</b>
Consideration of quantity production leading to a detailed description of a suitable quantity manufacturing system for the product prototype.	<b>4</b>	
Consideration of quantity production leading to a detailed description of a suitable quantity manufacturing system including details of chosen materials for the main component(s).	<b>5</b>	
Marketing presentation addresses some of the points.	<b>0-3</b>	
Marketing presentation addresses most of the 6 points but is dull and uninspiring.	<b>4-7</b>	
Marketing presentation addresses all 6 points and uses a persuasive approach.	<b>8-12</b>	
Marketing presentation is thorough, addresses at least all 6 points in detail and uses an innovative and persuasive approach.	<b>13-16</b>	
<b>Maximum mark</b>		<b>35</b>

# Electronic Portfolio Evidence

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## Introduction

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This section of the teacher guide aims to give guidance to Centres to enable them to realise the potential and possibilities of using electronic evidence and to aid in some of the technical aspects that Centres may need to consider when submitting coursework in this format.

The section will:

- Explain the different formats acceptable and how to make entries;
- Consider what OCR will expect to be included as electronic evidence;
- Give some advice on how different materials may be represented using electronic evidence.

The units that are covered by this guide are:

Unit	Entry Option	Entry Code	Title	Duration	Weighting
B801/01	Paper	B801/A	Developing and Applying Design Skills	20 Hours	60% Short
B801/02	CD	B801/B			30% Full
B803/01	Paper	B803/A	Making Testing and Marketing	20 Hours	30% Full only
B803/02	CD	B803/B			

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### Important note:

*For an individual candidate (Unit B801 and B803) - a combination of coursework format types within a unit is not permitted.*

*For Units B801 and B803, candidates may enter using a different format for Unit B801 than Unit B803. For example, a Centre could enter all candidates using CD format for Unit B801 and paper for Unit B803.*

Please remember that because of the nature of this qualification and of electronic evidence, it is very important to ensure estimated entries are made by the published deadlines. OCR can then more accurately gauge the number of candidates that will be submitting electronic evidence and apportion moderators accordingly.

## What is Electronic Evidence?

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Electronic Evidence in its broadest sense is: 'Any Coursework presented in an electronic format.'

There is currently **one** route acceptable in GCSE Product Design to achieve this:

- A PowerPoint portfolio presented on a CD-ROM

### **CD-ROM**

The advantages of this method are:

- Candidates can include speech, video, sound evidence and full colour computer graphics
- A copy is held by the Centre and the candidate
- A minimum of paper is used in the Centre and storage and carriage of bulky files is minimised.

GCSE Product Design will be moderated by post. The portfolio must be completed and marked by the deadline date of 10<sup>th</sup> January or 15<sup>th</sup> May. The Centre will send off the marks on the MS1 to the moderator who then selects a sample. The Centre will then send the requested sample CDs to the moderator.

### **CONDITIONS**

There are some conditions that must be adhered to when Centres wish to enter their candidates' portfolios in this format.

- Platform must be PowerPoint unless otherwise agreed with OCR at least 8 weeks prior to the submission date
- Only ONE Candidate's work on each CD ROM
- The work must be one single coherent piece; OCR will not accept portfolios comprising of multiple documents. Use 'Pack and Go' to save the coherent files.
- The file used must not exceed the capacity of a commercially available CD ROM (800MB).
- Each CD ROM must be marked either with a CD label (see CD Label in the Resources section) or by a permanent marker with;

Title

Centre Number

Unit number and entry code

Candidate number

Candidate Name

### **GENERAL**

PowerPoint is an ideal medium in which to submit portfolios electronically for these units. It is very flexible, having the ability to import files, animate text, import text and use scanned-in images, video and audio.

It also easy to use and candidates will be able to progress their knowledge of ICT through its use. PowerPoint can be used with either PCs or Apple Macs.

### **Tips**

Please remember candidates need to include all relevant evidence, the moderator will only see what is on the CD.

### **Unit B801**

The moderator and the teacher need to be able to assess the quality of the evidence presented as it applies to the assessment objectives in the specification. Candidates need to be advised that they will not be marked on the amount of animated text, or the music that accompanies the work. It is the quality and appropriateness of the evidence which will gain marks.

### **Unit B803**

The evidence produced for Unit B803 must be a marketing presentation that could be used to present the candidate's prototype product to an audience. It is envisaged that candidates will make more use of animated text and audio files to achieve this.

Approximately 10-15 slides will be required for the presentation. Within those slides sufficient evidence will need to be provided to adequately demonstrate the level and range of skills and techniques that the candidate has used.

## **TECHNIQUES**

### **Scanning**

When scanning it is important to remember to keep the resolution to a minimum and save items as JPEG files in order to keep the file sizes to a minimum

All areas

- Original thoughts, ideas and sketches, mind maps/thought showers.
- Old photographs, newspaper and magazine articles, catalogue items.

### **Food**

- Recipe ideas, photographs of ingredients, menus, cookbooks, food packaging.

### **Graphics**

- DVDs, pop CDs, electronic games artwork, POS artwork
- Advertisements, book covers, comics, graphic novels

### **Textiles**

- Swatches, clothes/fashion catalogues, history books

## **Digital Photography and Video**

Digital photography is an ideal way of recording the progress of a project and is simple to insert into a presentation or electronic portfolio. Digital Photography and video are also a good way of creating and presenting original ideas. Save files as AVI or save as MPEG and then convert to AVI – these work best with PowerPoint (a free converter can be download from the internet, search on MPEG to AVI converter).

Use digital photography software to;

- Crop, enhance, polarise or distort original photography
- Also make use of drawing/painting and graphics packages

## **Audio**

Audio can be used to present

- Real interviews with prospective clients.
- Feedback on development ideas/innovations
- Teachers interviewing candidates in order to present evidence of work completed that is not otherwise evidenced.
- Candidates own thoughts
- Also music can be used to enhance a presentation by establishing or altering the mood.

## **CAD/CAM**

CAD/CAM images can be inserted into PowerPoint to show where these applications have been used in the development of thinking and design ideas.

- Pro Desktop
- Live wire
- Croc Clips
- 2D Designer
- Nutritional Analysis
- Speedstep
- Art Cam
- ProEngineer
- Autocad / Autosketch / Inventor
- Google SketchUP

## Postal Moderation

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It is most important that Centres enter candidates using the correct entry code.

For Unit B801 use either B801/01 for paper based portfolios or B801/02 for CD based portfolios.

For Unit B803 use either B803/01 for paper based portfolios or B803/02 for CD based portfolios.

All internally assessed work (Units B801 and B803) is marked by the teacher. It should then be internally standardised by the Centre.

Marks are then submitted to OCR by January 10<sup>th</sup> or May 15<sup>th</sup>, after which moderation takes place in accordance with OCR procedures. Moderation is postal.

The purpose of moderation is to ensure that the standard of the award of marks for internally assessed work is the same for each Centre and that each teacher has applied the standards appropriately across the range of candidates within the Centre.

The sample of work, selected by the moderator, must show how the marks have been awarded in relation to the Internal Assessment Objectives (1-5).

Coursework Summary Forms are provided for Centres to collect marks for each candidate against these Internal Assessment Objectives. Copies of these forms are included in this guide. Electronic versions which include automatic addition features are available on the support CD or OCR website.

### **MINIMUM REQUIREMENTS FOR INTERNALLY ASSESSED WORK**

There should be clear evidence that work has been attempted and some work produced.

If a candidate submits no work for an internally assessed component, then the candidate should be indicated as being absent from that component on the mark sheets submitted to OCR. If a candidate completes any work at all for an internally assessed component, then the work should be assessed according to the internal assessment objectives and marking instructions and the appropriate mark awarded, which may be zero.



# OCR DESIGN & TECHNOLOGY

COURSEWORK SUMMARY FORM  
GCSE EXAMINATIONS ONLY

## PRODUCT DESIGN Unit B801

Centre Number						Centre Name			Year	2	0	0	
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Candidate Number	Candidate Name	Teaching group or set											Check Column
			Obj 1 Max 6	Objective 2			Objective 3					Total Max 90	
			Max 7	Max 8	Max 8	Max 25	Max 10	Max 8	Max 8	Max 10			
												0	
	For Moderator use only												
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# OCR DESIGN & TECHNOLOGY

COURSEWORK SUMMARY FORM  
GCSE EXAMINATIONS ONLY

## PRODUCT DESIGN UNIT B803

Centre Number						Centre Name		Year	2	0	0
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Candidate Number	Candidate Name	Teaching group or set	Objective 4			Objective 5			Total Max 90	Check Column
			Max 14	Max 14	Max 27	Max 7	Max 7	Max 5		
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# Administration of the Course

Unit	Unit Title	Unit code	Entry Option	Unit title	Duration	Weighting
B801	Developing and Applying Design Skills	B801/01	A	Paper	20 hours	60% Short
		B801/02	B	CD		30% Full
B802	Designing and Making Innovation Challenge	B802		Paper	6 hours	40% Short 20% Full
B803	Making, Testing and Marketing Products	B803/01	A	Paper	20 hours	30% Full only
		B803/02	B	CD		
B804	Designing Influences	B804		Paper	1 hour 30 mins	20% Full only

## Aggregation Codes

J900 – Short Course

J901 – Full Course

Candidates take Units B801 and B802 for the Short Course award.

Candidates take Units B801, B802, B803 and B804 for the Full Course award.

## Re-sit Rules

Candidates may re-sit any unit once only prior to certification. The better score will be used in the aggregation. Individual unit results will have a shelf-life limited only by that of the qualification.

## Entries and Certification

Please note that Centres must be registered with OCR in order to make any entries, including estimated entries. It is recommended that Centres apply to OCR to become a registered Centre well in advance of making their first entries. Centres should be aware that a minimum of ten candidates for summer examinations is normally required.

In addition to unit entries, to claim the Short Course GCSE Certification (at the end of the course) candidates must also be entered for the certification code J900 and to claim the Full Course GCSE Certification (at the end of the course) candidates must be entered for the certification code J901. Certification of the Short Course GCSE and the Full Course GCSE will be available from January 2008.

## Unit Availability

There are two assessment series each year, in January and June. All units are available every January and June from June 2006.

## Uniform Marks

In modular schemes candidates can take units across several different series. They can also take units more than once. When working out candidates' overall grades OCR needs to be able to compare performance on the same unit in different series when different grade boundaries have been set, and between different units. OCR uses uniform marks to enable this to be done.

A candidate's uniform mark is calculated from the candidate's raw mark, by applying the appropriate uniform mark conversion. The raw marks on the grade boundary are converted to the equivalent uniform mark boundary. Between grade boundaries, raw marks are converted to uniform marks, by a linear conversion between the relevant lower and upper raw and uniform mark boundaries. Above the top grade, A, A\* or distinction, and below the bottom grade, E, or G, special rules for the uniform mark conversion apply depending on the positioning of the raw mark grade boundaries.

The Full Course will be graded on a Uniform Mark Scale out of 400. The Short Course will be graded on a Uniform Mark Scale out of 200.

The overall uniform mark grade thresholds for the Short Course are as follows:

Max	A*	A	B	C	D	E	F	G	U
200	180	160	140	120	100	80	60	40	0

The overall uniform mark grade thresholds for the Full Course are as follows:

Max	A*	A	B	C	D	E	F	G	U
400	360	320	280	240	200	160	120	80	0

The uniform mark thresholds for each of the units are shown below:

	Unit B801	Unit B802	Unit B803	Unit B804
Max. mark available	120	80	120	80
A*	108	72	108	72
A	96	64	96	64
B	84	56	84	56
C	72	48	72	48
D	60	40	60	40
E	48	32	48	32
F	36	24	36	24
G	24	16	24	16

# Support Materials

TITLE	AUTHOR	PUBLISHER	YEAR	ISBN
<a href="#">The Look of the Century: Design Icons of the 20th Century</a>	Michael Tambini	Dorling Kindersley Publishing	1999	
Product Design	Nuffield	Longman	1996	0582 234697
Design Topics Product Design	Stephanie Atkinson	Oxford University Press		0 19 832784 6
Create! Product Design	Chris Ralls, Andy Reid, Tim Moggeridge	Heinemann	2004	0 435413023
<a href="#">Techno Textiles: Revolutionary Fabrics for Fashion and Design</a>	Marie O'Mahony, Sarah E. Braddock	Thames and Hudson	2002	0500 510865
The New Textiles: Trends and Traditions	<a href="#">Chloe Colchester</a>	Thames and Hudson	1993	0500 277370
Smart & Technical Textiles		DATA		
Century of British Cooking	Marguerite Patten	Grub Street	1999	1902304144
World War Rations	Lookout Guide	Jarrold		1841651206
The Victory Cookbook	Marguerite Patten	Hamlyn	2004	0600 611876
Green Design	Dorothy Mackenzie			
How is it Done		Reader's Digest		1856690016
The New Look: Design in the Fifties	<a href="#">Lesley Jackson</a>	Thames & Hudson	1991	
Designing		DATA		
Bright Ideas		DATA		
Food Forum	<a href="http://www.foodforum.org.uk/">http://www.foodforum.org.uk/</a>	Ali Farrell		
Channel 4 – The Technology programme	<a href="http://web.channel4.com/learning/main/secondary/des_tech.htm">http://web.channel4.com/learning/main/secondary/des_tech.htm</a>			
Patent Office	<a href="http://www.patent.gov.uk/about/marketing/thinkkit/thinkkit2.htm">http://www.patent.gov.uk/about/marketing/thinkkit/thinkkit2.htm</a>			

**ANY OTHER APPROPRIATE RESOURCE WHICH CAN SUPPORT PRODUCT DESIGN ACTIVITIES**