



Oxford Cambridge and RSA

**Wednesday 4 May 2016 – All day**

**AS GCE DESIGN AND TECHNOLOGY**

**F521/01** Advanced Innovation Challenge

**SESSION 1 AND 2 – PRACTICAL ASSIGNMENT**

Candidates answer on this Workbook.

**OCR supplied materials:**

None

**Other materials required:**

- Modelling materials and equipment

**Duration: 6 hours**



Candidate forename		Candidate surname	
--------------------	--	-------------------	--

Centre number						Candidate number				
---------------	--	--	--	--	--	------------------	--	--	--	--

**INSTRUCTIONS TO CANDIDATES**

- Write your name, centre number and candidate number in the boxes above. Please write clearly and in capital letters.
- Read each question carefully. Make sure you know what you have to do before starting your answer.
- Write your answer to each question in the space provided. All work should be completed on the Workbook. **Additional paper will not be marked.**
- You will have a total of 6 hours to complete this part of the examination. There will normally be two 3 hour sessions.

**INFORMATION FOR CANDIDATES**

- At the end of the examination you must have:
  - selected **one** of the Design Challenges detailed in this Workbook;
  - completed the Workbook showing your creative thinking and how your idea works;
  - produced a model/prototype to show the important features of your design;
  - have at least three photographs fixed in your Workbook showing your modelling activities.
- The total number of marks for this paper is **60**.
- This document consists of **22** pages. Any blank pages are indicated.

**Your Workbook will be collected at the end of sessions 1 and 2 and reissued when you sit session 3 the Reflection Test.**

For Examiner's Use
<b>Total</b>

## Town Centres

Town centres are often associated with shopping or retail. They can also be the centre for major public transport hubs and public buildings, such as town halls, museums and libraries.

You have been approached as a designer to address **one** of the following Design Challenges and design an **innovative** product.

### Design Challenge One

There are often limited areas to relax in a town centre. There is a need for a product that can provide a permanent area for relaxation that is sensitive to the surroundings.

- The product should be suitable for use throughout the year.

### Design Challenge Two

The use of digital devices has become increasingly popular. There is a need for a charging station that can be used to charge a variety of different devices.

- The product should ensure security of digital devices whilst being charged.

### Design Challenge Three

Hot fast food meals are often sold in public spaces. There is a need for a healthy hot fast food meal that can be cooked and prepared on a stall.

- The meal should meet current nutritional guidelines.

### Design Challenge Four

Outdoor spaces in a town centre often need dividing or partitioning for special events. There is a need for a product that will provide a temporary partition.

- The product should take up minimal space for storage when not in use.

### Design Challenge Five

People often find that carrying shopping is tiring and some shops provide a service for goods to be collected later. There is a need for a product that can store shopping securely for several hours.

- The product should be suitable for a variety of non-perishable goods.

### Design Challenge Six

Town centres attract a large number of people. The council require a product to direct visitors to key attractions and facilities throughout the day and night.

- The product should be fully inclusive.

**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**BLANK PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

# Session 1

- 1 Explore the chosen Design Challenge. What are your initial thoughts?

Use sketches and notes to communicate your thinking.

- 2 Which of your initial thoughts offers greatest potential to be taken further? Why?

Additional space

**Boxes 3, 4 and 5 are at the end of this booklet on the fold-out page**

- 6 Start designing. Use annotated sketches and/or models to show your ideas. You may wish to use annotated photographs to communicate modelling.



Ideas continued.

7 What do you think of your ideas so far, how has your job bag helped to inspire/direct your ideas? Use annotated sketches and/or annotated photographs to explain.

8 Which is your best idea? Justify your decision.

**9 Reflect and Record**

You will be asked to present your ideas (no more than 5 minutes).

Use this space to plan what you will say. Think about your brief, specification and key factors of your design.

**10 Feedback**

Record any suggestions made by others. Identify further modifications that you could make in response to this feedback.

**11 Developing your idea, improvements and modifications**

Use annotated sketches and/or annotated photographs to communicate your thoughts.

Include details of materials, components or ingredients, methods of manufacture and issues relating to sustainability in your answer.

**12 Your Model**

List the materials/ingredients you have chosen to make your prototype.

<b>Component description</b>	<b>Material/Ingredient</b>

Show how these components could be joined/combined together.

**13 Action Plan for Session 2**

## Session 2

### 14 Review

Record any new thoughts about your design. Use annotated sketches and/or notes.

### 15 Modelling – Test, develop and refine your design proposal.

#### Progress Report 1

Problems you have come up against so far. What are the possible solutions?

**16 Continue Modelling. You have 40 minutes' modelling time.**

**Progress Report 2**

Did your solutions work? Why?

Which areas of modelling have been most successful so far?



**17 Planning.** Plan what you will be doing/making during the final modelling activity.

**18 Evaluation of Developed Design Proposal**

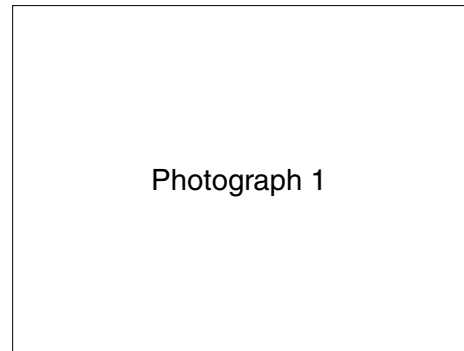
Describe the effectiveness of your developed design proposal and how it meets the needs of the original Design Challenge. Use sketches and notes to show how your design could be improved. Evaluate your final proposal against your specification, you may use annotated sketches and/or annotated photographs.

Evaluation Continued

**3 Decision Time**

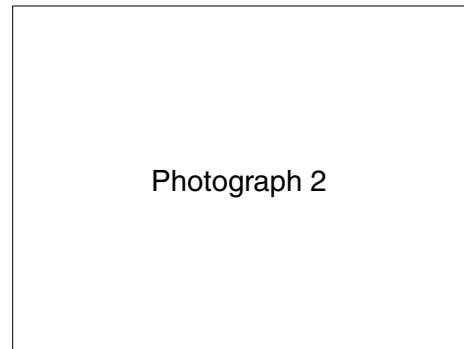
Your Design Brief

I am going to design and model a ...



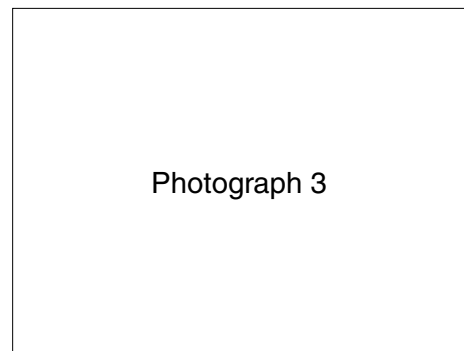
**4 Key Points**

Examine the contents of your job bag remembering your design brief. Identify key points, which will help you write your specification.



**5 Your Design Specification**

To be successful my product must ...



**BLANK PAGE**

**FOLD OUT THIS PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**

**PLEASE DO NOT WRITE ON THIS PAGE**



**Copyright Information**

OCR is committed to seeking permission to reproduce all third-party content that it uses in its assessment materials. OCR has attempted to identify and contact all copyright holders whose work is used in this paper. To avoid the issue of disclosure of answer-related information to candidates, all copyright acknowledgements are reproduced in the OCR Copyright Acknowledgements Booklet. This is produced for each series of examinations and is freely available to download from our public website ([www.ocr.org.uk](http://www.ocr.org.uk)) after the live examination series.

If OCR has unwittingly failed to correctly acknowledge or clear any third-party content in this assessment material, OCR will be happy to correct its mistake at the earliest possible opportunity.

For queries or further information please contact the Copyright Team, First Floor, 9 Hills Road, Cambridge CB2 1GE.

OCR is part of the Cambridge Assessment Group; Cambridge Assessment is the brand name of University of Cambridge Local Examinations Syndicate (UCLES), which is itself a department of the University of Cambridge.