

**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
AS GCE**

F521/01

DESIGN AND TECHNOLOGY

Advanced Innovation Challenge

SESSION 1 AND 2 – PRACTICAL ASSIGNMENT

WEDNESDAY 7 MAY 2014: All day

DURATION: 6 hours

plus your additional time allowance

MODIFIED ENLARGED

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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Candidates answer on the Question Paper.

OCR SUPPLIED MATERIALS:

None

OTHER MATERIALS REQUIRED:

Modelling materials and equipment

READ INSTRUCTIONS OVERLEAF

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the boxes on the first page. 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 with this workbook;

completed the answer booklet 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 answer booklet showing your modelling activities.

The total number of marks for this paper is 60.

Any blank pages are indicated.

Your answer booklet will be collected at the end of session 1 and 2 and reissued when you sit session 3 the reflection test.

Trips and visits

People regularly go on trips or visits for leisure purposes. This can be as an individual or as part of a group.

You have been approached as a designer to address ONE of the following Design Challenges. This will help to develop a range of INNOVATIVE products that will be suitable for use on trips or visits.

Design Challenge One

There is a need for a product that can improve the security of personal belongings when out on a day trip.

- **The product should allow the user easy access to their belongings when required.**

Design Challenge Two

On a long journey sitting still for long periods can cause health issues. There is a need for a product that can be used for exercise when seated.

- **The product should be portable.**

Design Challenge Three

There is a need for a complete food pack for children who want to eat when on a day trip.

- **The food pack should provide lunch and snacks that can be eaten throughout the day.**

Design Challenge Four

On days out in the countryside, litter can be a problem. There is a need for a product to enable people to store their litter until it can be disposed of responsibly.

- **The product should be portable.**

Design Challenge Five

There is often limited seating when out and about. There is a need for a portable product that can provide a seat.

- **The product should have more than one function other than seating.**

Design Challenge Six

Young children often get bored on journeys. There is a need for an activity pack that will keep children occupied when travelling.

- **The product should be educational.**

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

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 ...



Photograph 1



Photograph 2



Photograph 3

- 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 the sustainability in your answer.

12 YOUR MODEL

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

Component description	Material/Ingredient

Show how these components could be joined/combined together.

13 ACTION PLAN FOR 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

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