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Centre Number						Candidate Number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS
ADVANCED SUBSIDIARY GCE**

F521/01

DESIGN AND TECHNOLOGY

Advanced Innovation Challenge

FRIDAY 7 MAY 2010: All day

DURATION: 6 hours

SUITABLE FOR VISUALLY IMPAIRED CANDIDATES

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 in capital letters, your Centre Number and Candidate Number in the boxes on the first page.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Write your answer to each question in the space provided.
- 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

- The total number of marks for this paper is 60.
- At the end of the examination you must have:
 - selected ONE of the challenges detailed with this paper;
 - 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.

YOUR ANSWER BOOKLET WILL BE COLLECTED AT THE END OF SESSION 1 AND 2 AND REISSUED WHEN YOU SIT SESSION 3 THE REFLECTION TEST.

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TRAVEL AND COMMUTING

Many people travel regularly for leisure purposes or commute to school, college or work.

You have been approached as a designer to address one of the Design Challenges. This will help to develop a range of INNOVATIVE products that will be suitable for use when travelling or commuting.

DESIGN CHALLENGE ONE

Many people travel alone. There is a need for a product that can improve the security of personal belongings whilst travelling.

- The product should allow the user to relax, in the knowledge that their belongings are secure.

DESIGN CHALLENGE TWO

With increasing awareness of the need to be sustainable, a product is needed that can provide personal transportation. It should encourage people to avoid short car journeys when travelling to school, college or work.

- The device should use 'green' power.

DESIGN CHALLENGE THREE

There is a need for a complete meal pack for children who want to eat whilst travelling.

- The meal pack should provide a balanced meal.

DESIGN CHALLENGE FOUR

On long journeys, litter can be a problem. There is a need for a product to aid the collection of litter.

- **The product should raise awareness of sustainability.**

DESIGN CHALLENGE FIVE

When travelling or commuting, it is easy to get caught out with unpredictable weather. There is a need for a product that would provide protection.

- **The product should be suitable for a minimum of two people.**

DESIGN CHALLENGE SIX

Children often get bored on journeys. There is a need for a product that will keep children occupied when travelling.

- **The product should be reusable.**

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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

**SECTIONS 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.

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

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. 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 ...

Photograph 1

4 KEY POINTS:

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

Photograph 2

5 YOUR DESIGN SPECIFICATION

To be successful my product must ...

Photograph 3

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