



GENERAL CERTIFICATE OF SECONDARY EDUCATION
DESIGN AND TECHNOLOGY
PRODUCT DESIGN

A554

Unit 4: Designing Influences

Candidates answer on the Question Paper

OCR Supplied Materials:
None

Other Materials Required:
None

Monday 7 June 2010
Morning

Duration: 1 hour 30 minutes



Candidate Forename		Candidate Surname	
--------------------	--	-------------------	--

Centre Number						Candidate Number				
---------------	--	--	--	--	--	------------------	--	--	--	--

MODIFIED LANGUAGE

INSTRUCTIONS TO CANDIDATES

- Write your name clearly in capital letters, your Centre Number and Candidate Number in the boxes above.
- Use black ink. Pencil may be used for graphs and diagrams only.
- Read each question carefully and make sure that you know what you have to do before starting your answer.
- Answer **all** the questions in Section A **and** Section B.
- Do **not** write in the bar codes.
- Write your answer to each question in the space provided. Additional paper may be used if necessary but you must clearly show your Candidate Number, Centre Number and question number(s).

INFORMATION FOR CANDIDATES

- The number of marks is given in brackets [] at the end of each question or part question.
- The total number of marks for this paper is **60**.
- **Section A is worth 30 marks.** You are advised to spend no more than 45 minutes on it.
- **Section B is worth 30 marks.** You are advised to spend no more than 45 minutes on it.
- You will need to select from the tables in section B when answering question 4 and question 5 of this paper. 'Trend setter' and 'Iconic product' must be linked to 'Eras and movements'.
- Your Quality of Written Communication is assessed in the question marked with an asterisk (*).
- This document consists of **16** pages. Any blank pages are indicated.

SECTION A

You are advised to spend 45 minutes on this section.

1 Fig. 1 shows an egg box made from recycled paper.

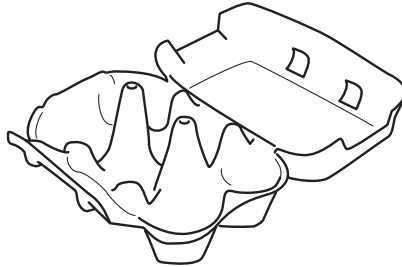


Fig. 1

(a) Give **three** design features of an egg box.

Requirement 1 [1]

Requirement 2 [1]

Requirement 3 [1]

(b) The egg box has a monocoque (shell) structure.

(i) Explain what is meant by the term monocoque structure.

.....
.....
.....
.....
..... [2]

(ii) Give **two** products, other than food packaging, that have monocoque structures.

Product 1 [1]

Product 2 [1]

(c) Explain why many people believe that the egg box in Fig. 1 is an excellent example of sustainable design.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

..... [3]

[Total: 10]

2 Fig. 2 shows an MP3 player.

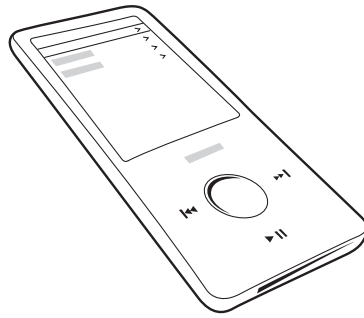


Fig. 2

(a) Shown below are five features of an MP3 player. Join each product feature to the correct design influence. The first one has been done for you.

Product Feature	Design Influence
Rounded corners	Sustainability
Size of buttons	Aesthetics
Colour	Ergonomics
Rechargeable battery	Function
Music and video player	Anthropometrics

[4]

(b) MP3 players are an example of a mass produced product. Give **three** reasons why companies choose to mass produce products.

Reason 1

.....

Reason 2

.....

Reason 3

.....

[3]

(c) Explain how fashion and obsolescence influence the design of portable electronic products.

.....
.....
.....
.....
.....
.....
.....
.....
.....

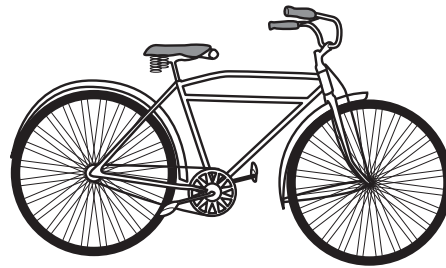
[3]

[Total: 10]

3 Fig. 3 shows a modern bicycle and a bicycle from the 1920s.



modern bicycle

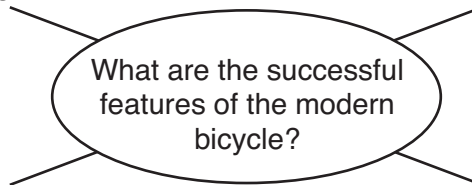


bicycle from the 1920s

Fig. 3

(a) Complete the diagram below by adding a further three successful features of the modern bicycle.

The modern bicycle is lightweight.



[3]

(b) Explain why **two** of the features you have identified have made the modern bicycle successful.

An example has been done for you.

Point 1: The modern bicycle is lightweight.

Explanation: Old bicycles had heavy steel frames. Modern bicycles are now made of high strength lightweight materials.

(i) *Point 2:*

Explanation:

.....
.....
..... [2]

(ii) *Point 3:*

Explanation:

.....
.....
..... [2]

(c) The two bicycles shown in Fig. 3 both have the same basic function. However, they have different design features.

Explain why design features of the bicycle have changed over the years.

.....
.....
.....
.....
.....
.....
.....
..... [3]

[Total: 10]

SECTION B

You are advised to spend 45 minutes on this section.

This question draws upon the research you did as part of your examination preparation.

4 The table below shows the eras, trend setters and iconic products for this examination.

Please show with a tick [✓] the era or movement you have studied.

Era or Movement	Trend setter	Iconic product	✓
1960s	Alec Issigonis	Mini Cooper	
(1970s) Hippies	Yves St Laurent	Kaftan	
1950s + 1960s	Andy Warhol	Campbell's soup painting	
1980s	Infra - red light emission	TV Remote control	
1960s	Vegetarianism	Nut loaf	

(a*) Trend setter chosen

Explain why this trend setter has been so influential.

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....

.....
.....
.....
.....
.....
..... [6]

(b) Iconic product chosen

Give **two** reasons why the product you have chosen has been so influential.
Make specific reference to design and function.

Reason 1
.....
.....
..... [2]

Reason 2
.....
.....
..... [2]

[Total: 10]

5 This question draws upon the research you did as part of your examination preparation.

You will need to:

- Write a specification
- Produce a range of initial ideas
- Develop **one** idea
- Give details of the final proposal

Five different design needs are given below.

Please indicate using a tick [✓] **one** design need you are going to consider.

design need	✓
A classic car magazine requires a pen holder in the style of Alec Issigonis.	
A shoulder bag in the 1970s hippy style.	
A point of sale display for an Andy Warhol calendar.	
A simple intruder alarm using an infra red transmitter and receiver.	
A vegetarian product for a teenage party.	

(a) The design need above specifies key design requirements. You must identify four **other** design specification points for your chosen design need.

- 1 [1]
- 2 [1]
- 3 [1]
- 4 [1]

(b) Use sketches and notes to produce a range of first ideas for your specification.

- (c) Use sketches and notes to develop **one** of your first ideas to meet the original design need.

- (d) Give details of your final proposal showing how it meets the four design specification points you identified in part (a) of this question.

[6]

[Total: 20]

14
BLANK PAGE

PLEASE DO NOT WRITE ON THIS PAGE

15
BLANK 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, is given to all schools that receive assessment material and is freely available to download from our public website (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.