



**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	
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Centre Number						Candidate Number				
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**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).

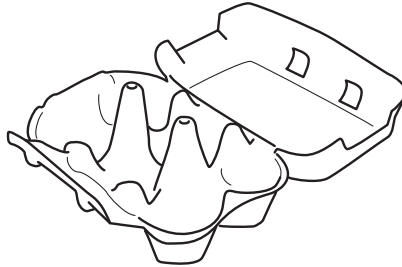
**INFORMATION FOR CANDIDATES**

- 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.

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

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

*Product 1* ..... [1]

*Product 2* ..... [1]

3

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

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..... [3]

[Total: 10]

2 Fig. 2 shows an MP3 player.

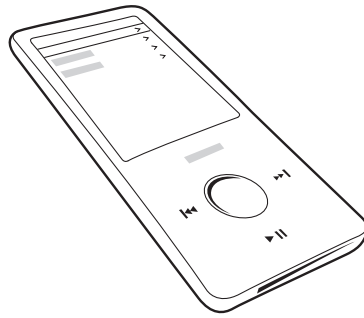


Fig. 2

(a) Shown below are five features of an MP3 player. Join the 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 .....

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Reason 2 .....

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Reason 3 .....

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[3]

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

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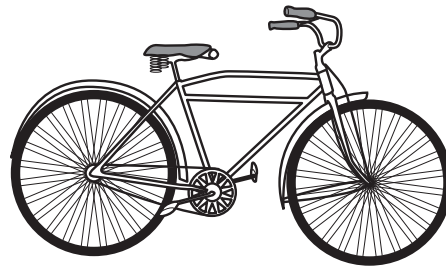
..... [3]

[Total: 10]

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



modern bicycle

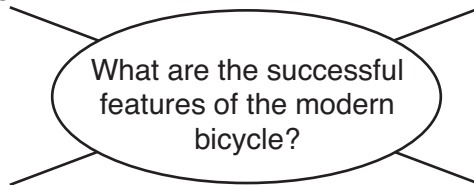


bicycle from the 1920s

**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:* Heavy steel frames on old bicycles have been replaced with 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 design features are very different.

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

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..... [3]

[Total: 10]

**SECTION B**

You are advised to spend 45 minutes on this section.

**This question draws upon the research you carried out as part of your examination preparation.**

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

Please indicate using a [✓] the era or movement you have studied.

<b>Era or Movement</b>	<b>Trend setter</b>	<b>Iconic product</b>	<b>✓</b>
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.

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**(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 carried out 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 [✓] **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)** Identify **four** important design specification points for your chosen design need. These must specify key design requirements other than those detailed in the design need above.

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

**(b)** Use sketches and notes to produce a range of initial ideas that meet your specification.

**[5]**

- (c) Use sketches and notes to develop **one** of your initial 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]

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