



Monday 22 June 2015 – Morning

GCSE DESIGN AND TECHNOLOGY Product Design

A554/01 Designing Influences

Candidates answer on the Question Paper.

OCR supplied materials:

None

Other materials required:

None

Duration: 1 hour 30 minutes



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.
- Use black ink. HB pencil may be used for graphs and diagrams only.
- Answer **all** the questions in Section A **and** B.
- 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. Additional paper may be used if necessary but you must clearly show your candidate number, centre number and question number(s).
- Do **not** write in the bar codes.

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 the 'Era or Movement'.
- Your quality of written communication will be assessed in questions marked with an asterisk (*).
- This document consists of **16** pages. Any blank pages are indicated.

2

Answer **all** the questions.**SECTION A**

You are advised to spend 45 minutes on this section.

- 1 Fig. 1 shows a child's soft toy.

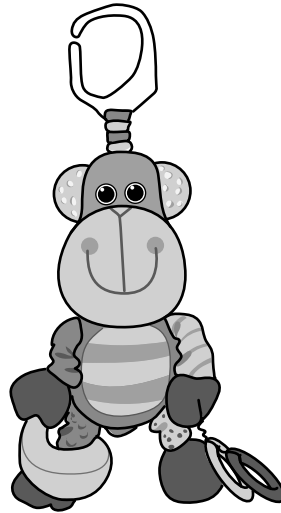


Fig. 1

- (a) Give **three** design requirements of a child's soft toy.

- 1
- 2
- 3 [3]

- (b) Describe **two** ways in which anthropometric measurements could be used when designing toys for children.

- 1

- 2

 [4]

3

- (c) Explain the role of the British Standards Institution (BSI) in ensuring that toys are safe for use.

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..... [3]

4

- 2 Fig. 2 shows a digital sports watch that uses a smart material.

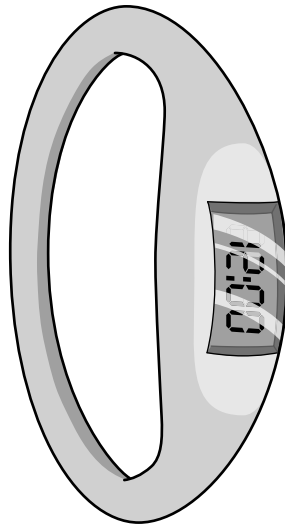


Fig. 2

- (a) Give **two** reasons why digital sports watches are popular. You must justify each answer.

1

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2

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[4]

- (b) (i) The strap of the digital sports watch shown in Fig. 2 contains a phosphorescent pigment. State the effect this will have on the product.

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..... [1]

- (ii) Identify **one** other smart material and give an example of its use.

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..... [2]

5

- (c) The digital watch shown in Fig. 2 has non-replaceable parts.

Discuss the issues of products with parts that cannot be replaced.

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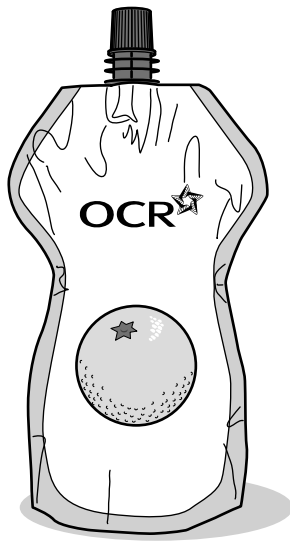
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..... [3]

6

- 3 Fig. 3 shows the packaging of a modern soft drink and the packaging of a soft drink from the 1950s.



modern soft drink packaging



soft drink packaging from the 1950s

Fig. 3

- (a) The design of soft drinks packaging has changed over time.

Give **three** design features of modern soft drinks packaging that benefit the consumer.

1

2

3 [3]

- (b) Explain **two** ways in which design features of the modern packaging benefit soft drinks manufacturers.

1

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..... [4]

(c) Explain why packaging is important in the marketing of new products.

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..... [3]

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The table below shows the iconic products for this examination.

Era or Movement	Iconic Product
1940s to present	Polypropylene Stacking Chair
1960s to present	Pictograms – 1972 Olympics
1970s to present	Intel 4004 4-bit central processing unit
1900s to present	SPAM
1990s to present	Gisele Bag

(b) Select **one** iconic product from the table above.

Iconic product chosen

Give **two** reasons why the product you have chosen has been so influential.

You must justify each answer.

1

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2

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[4]

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 tick [✓] **one** design need you are going to consider.

Design Need	✓
A piece of furniture in the style of Robin Day for a children's nursery	
A sign in the style of Otl Aicher for a school design and technology department	
An automatic control system for a greenhouse	
A nutritionally balanced hot school meal using SPAM	
A school bag for 14 to 16 year olds in the style of Luella Bartley	

(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
-
- 2
-
- 3
-
- 4
-

[4]

11

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

[6]

12

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

Give details of materials and construction.

(d) Evaluate your final proposal against the four design specification points you identified in part **(a)** of this question.

[4]

END OF QUESTION PAPER

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