

Monday 26 June 2017 – Morning

GCSE DESIGN AND TECHNOLOGY Product Design

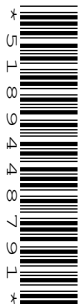
A554/01 Designing Influences

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. If additional space is required, you should use the lined page(s) at the end of this booklet. The question number(s) must be clearly shown.
- Do **not** write in the barcodes.

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.

Answer **all** the questions.

SECTION A

You are advised to spend 45 minutes on this section.

- 1 Fig. 1 shows a vegetable peeler.

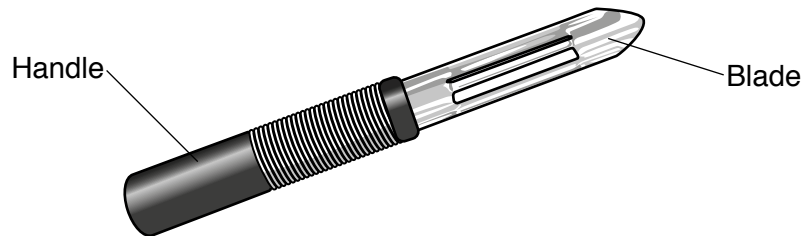


Fig. 1

- (a) Give **three** design requirements of a vegetable peeler.

1

2

3 [3]

- (b) The handle of the vegetable peeler is made of wood and string.

Explain why string is added to the wooden handle.

.....

.....

..... [2]

- (c) Kitchen utensils like the vegetable peeler are often marketed with a product label.

Give **two** examples of how labelling is used to protect the consumer.

1

.....

2

..... [2]

- (d) Explain how the British Standards Institute helps designers create products that are safe and fit for purpose.

.....

.....

.....

.....

.....

..... [3]

2 Fig. 2 shows the parts of an educational toy clock.

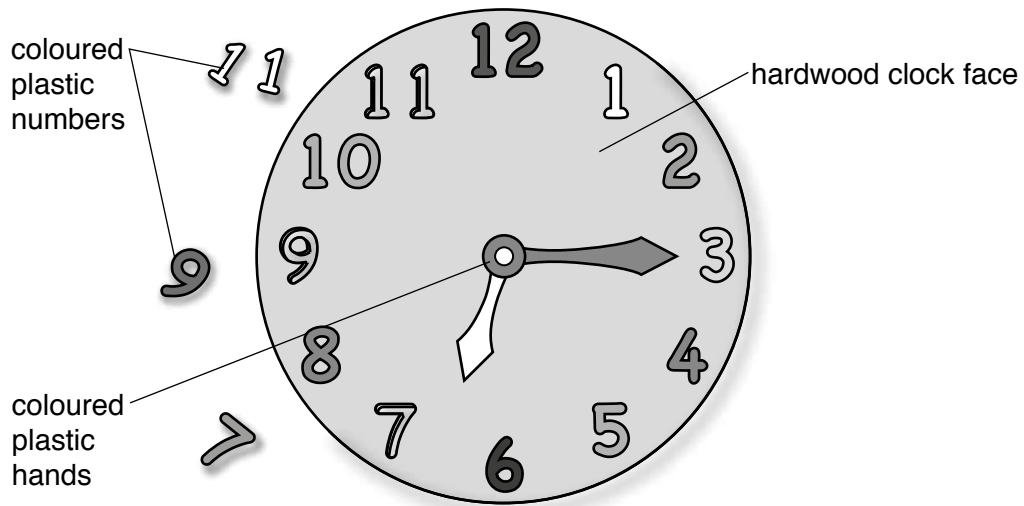


Fig. 2

(a) Aesthetics can influence the appeal of a product.

Give **three** aesthetic requirements for the toy clock to ensure it appeals to young children.

- 1
- 2
- 3 [3]

(b) The six colours on a simple colour wheel are:

Blue Green Orange Red Purple Yellow

Using the colours listed above:

(i) Give **one** colour that would contrast with red.

..... [1]

(ii) Give **one** colour that would be complementary to red.

..... [1]

- (c) Explain how the educational toy clock could be modified to allow the numbers to be removed and replaced more easily.

.....

.....

.....

..... [2]

- (d) Explain why consumers want new products to be made from biodegradable materials rather than non-biodegradable materials.

.....

.....

.....

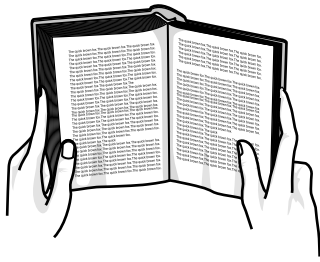
.....

.....

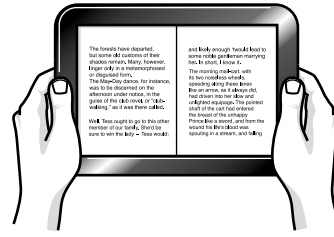
.....

..... [3]

3 Fig. 3 shows two ways of reading a book.



Reading a paper copy of a book.



Reading an eBook on a tablet.

Fig. 3

(a) The way that many people read books has changed over the past ten years.

Give **three** benefits for the user of reading a book on a tablet.

- 1
- 2
- 3

[3]

(b) Mobile devices such as a tablet usually use a rechargeable battery as an energy source.

Give **two** reasons why the size and weight of the battery have to be considered when designing mobile digital devices.

- 1
- 2

[2]

- (c) Most digital devices are available in different colours.

Give **two** reasons why manufacturers make products in a range of colours.

1

.....

2

.....

[2]

- (d) The development of digital technology can be seen to impact on many aspects of modern life.

Explain how digital technologies have changed the way products are marketed and advertised. Use **one** specific example of a digital technology in your answer.

.....

.....

.....

.....

.....

.....

..... [3]

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

- | Era or movement | Trend setter |
|------------------|--------------------------------|
| 1920s to present | Folding tubular steel products |
| 1960s to present | Programmable components |
| 1920s to present | Trouser suit |
| 1950s to present | Laminated packaging materials |
| 1800s to present | Mediterranean diet |

- [6]

(b) The table below shows the iconic products for this examination.

Era or movement	Iconic product
1920s to present	Maclaren B-01 buggy
1960s to present	PIC microcontroller
1920s to present	Ossie Clark trouser suits
1950s to present	Tetra Pak
1800s to present	Pizza

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

.....

.....

.....

2

.....

.....

.....

[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
- evaluate your final proposal.

Five different design needs are given below.

Indicate using a tick (✓) **one** design need you are going to consider.

Design need	✓
A camping picnic table which is compact and easily transported.	
An automatic cat feeding device for when owners are away on holiday.	
A trouser suit for a young child to be worn at a 60s themed party.	
An easy carry disposable drinks device used at a summer event.	
A healthy Mediterranean menu for a school lunch time.	

- (a)** Identify **four** important design specification points for the design need you have chosen to consider.

These must specify key design requirements other than those detailed in the design need above.

1

.....

2

.....

3

.....

4

.....

[4]

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

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

Give details of materials and construction.

..... [4]

© OCR 2017

[illegible]

Oxford Cambridge and RSA

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 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.