

Candidate forename		Candidate surname	
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Centre number						Candidate number				
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**OXFORD CAMBRIDGE AND RSA EXAMINATIONS  
GCSE**

**A554**

**DESIGN AND TECHNOLOGY  
Product Design**

**Designing Influences**

**FRIDAY 13 JANUARY 2012: Afternoon**

**DURATION: 1 hour 30 minutes**

**SUITABLE FOR VISUALLY IMPAIRED CANDIDATES**

**Candidates answer on the Question Paper.**

**OCR SUPPLIED MATERIALS:**

**None**

**OTHER MATERIALS REQUIRED:**

**None**

**READ INSTRUCTIONS OVERLEAF**

## **INSTRUCTIONS TO CANDIDATES**

- **Write your name, centre number and candidate number in the boxes on the first page. 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).**

## **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 will be assessed in questions marked with an asterisk (\*).

## SECTION A

You are advised to spend 45 minutes on this section.

1 Fig. 1 shows a child using a pogo stick.

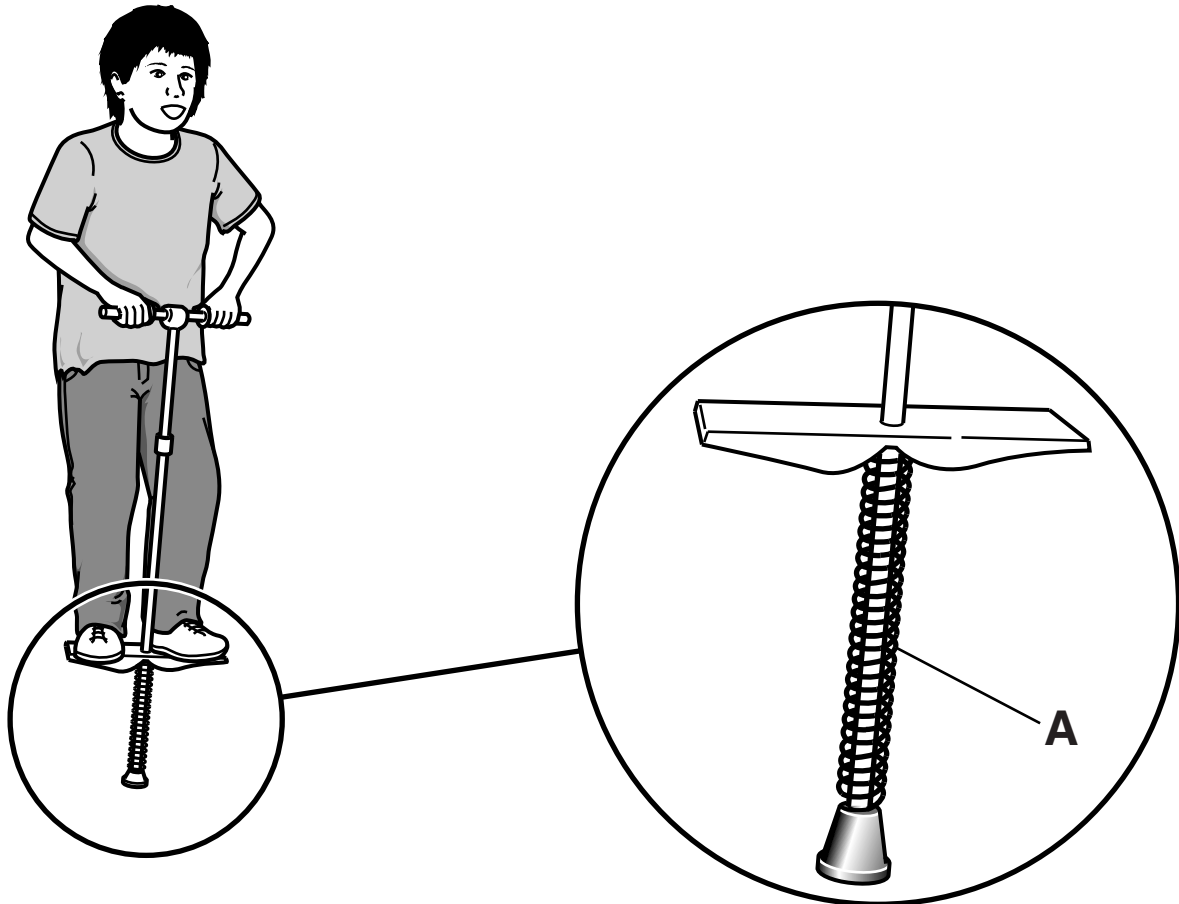


Fig. 1

(a) Give THREE design features of a pogo stick.

Feature 1 \_\_\_\_\_

Feature 2 \_\_\_\_\_

Feature 3 \_\_\_\_\_ [3]

**(b) (i) Identify the component labelled A in Fig. 1 opposite.**

\_\_\_\_\_ [1]

**(ii) State ONE force acting on component A when the pogo stick is in use.**

\_\_\_\_\_ [1]

**(iii) Describe a design modification to the pogo stick that would make it safer to use.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [2]

**(c) A marketing strategy for a new pogo stick is required.**

**Explain the key features of a marketing strategy.**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_ [3]

**[Total: 10]**

2 Fig. 2 shows a pair of sunglasses.

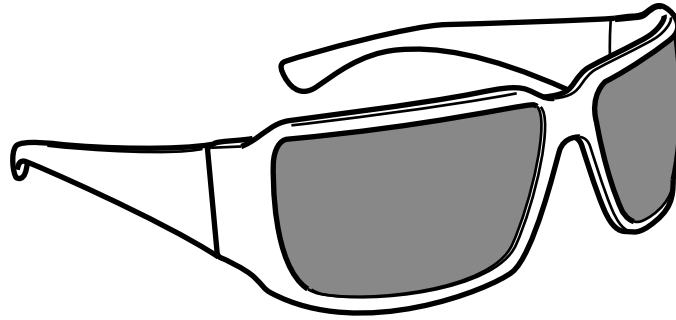


Fig. 2

(a) Give **THREE** anthropometric measurements considered when designing sunglasses.

1 \_\_\_\_\_

2 \_\_\_\_\_

3 \_\_\_\_\_ [3]

(b) Give **TWO** reasons, why sunglasses have become popular in recent years.

Reason 1 \_\_\_\_\_

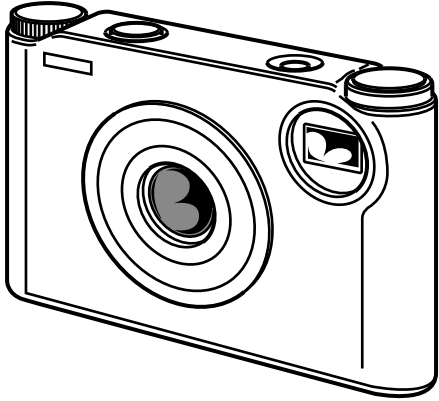
\_\_\_\_\_  
\_\_\_\_\_ [2]

Reason 2 \_\_\_\_\_

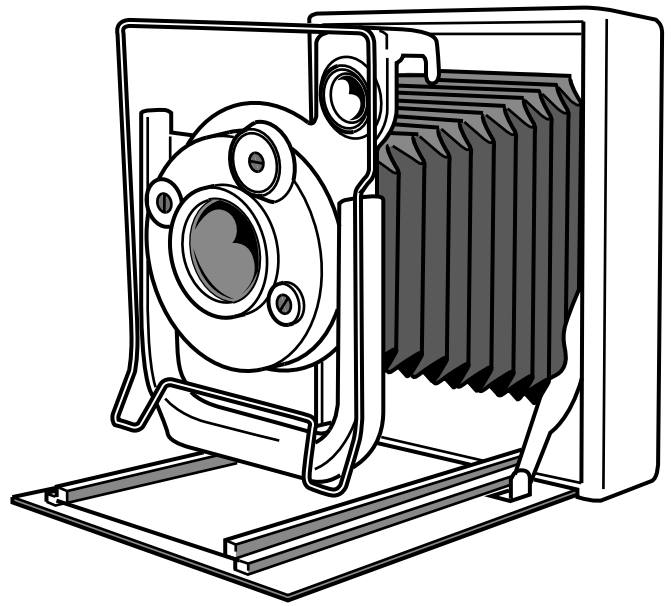
\_\_\_\_\_  
\_\_\_\_\_ [2]



**3 Fig. 3 shows a modern digital camera and a camera from the 1920s.**



**Modern digital camera**



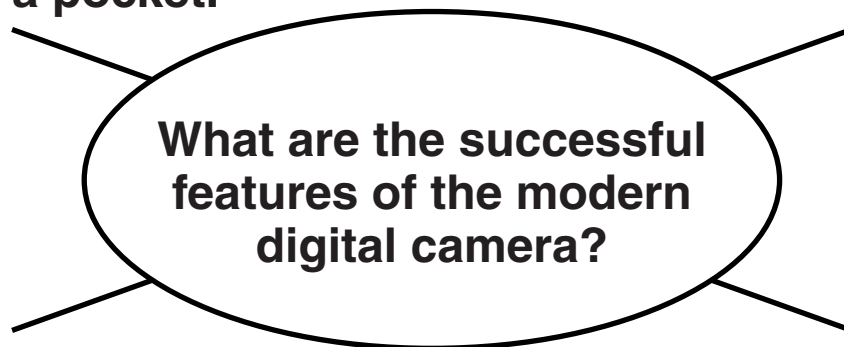
**Camera from the 1920s**

**Fig. 3**



- (a) Complete the diagram below by adding a further THREE successful features of the modern digital camera.**

**The modern digital camera is very slim and fits in a pocket.**



**[3]**

**(b) Explain why TWO of the features you have identified have made the modern digital camera successful.**

**An example has been done for you.**

**Point 1: The modern digital camera is very slim and fits in a pocket.**

**Explanation: The development of miniature electronic components has enabled manufacturers to produce pocket-sized cameras.**

**Point 2 \_\_\_\_\_**

**Explanation**

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[2]

**Point 3 \_\_\_\_\_**

**Explanation**

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[2]

**(c) Explain the effects the introduction of computerised devices has had on designers and makers.**

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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 tick [✓] the era or movement you have studied.

<b>ERA OR MOVEMENT</b>	<b>TREND SETTER</b>	<b>ICONIC PRODUCT</b>	<b>✓</b>
<b>1980s</b>	<b>The Memphis Group</b>	<b>Carlton Room divider</b>	
<b>1970s</b>	<b>Abba</b>	<b>Lycra stage costumes</b>	
<b>Twentieth century</b>	<b>Confectionary packaging</b>	<b>Kit Kat</b>	
<b>1970–1990</b>	<b>Lasers</b>	<b>Bar code reader</b>	
<b>1950s and 60s</b>	<b>Ice cream</b>	<b>Knickerbocker glory</b>	



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[6]

(b) **Iconic product chosen** \_\_\_\_\_

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

**Reason 1** \_\_\_\_\_

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[2]

**Reason 2** \_\_\_\_\_

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[2]

**[Total: 10]**

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**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.**

<b>DESIGN NEED</b>	<b>✓</b>
<b>A coffee table in the Memphis Group style.</b>	
<b>Swimwear for the British Olympic swimming team.</b>	
<b>Packaging for a new range of chocolate covered mints. Each mint is 30 mm in diameter and 5 mm thick. The packaging must contain 10 mints.</b>	
<b>A device for identifying the levelness of a surface that incorporates a laser.</b>	
<b>An Olympic Games themed ice cream dessert.</b>	



**(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 opposite.**

**1** \_\_\_\_\_

\_\_\_\_\_

**2** \_\_\_\_\_

\_\_\_\_\_

**3** \_\_\_\_\_

\_\_\_\_\_

**4** \_\_\_\_\_

\_\_\_\_\_ **[4]**

**(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.**

**[5]**

**(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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