

Centre Number						Candidate Number				
Surname										
Other Names										
Candidate Signature										

For Examiner's Use	
Examiner's Initials	
Question	Mark
1	
2	
3	
4	
TOTAL	



General Certificate of Secondary Education
June 2013

Design and Technology: Short Course

45751

Unit 1 Written Paper

Wednesday 15 May 2013 9.00 am to 10.00 am

For this paper you must have:

- a black pen, a pencil, a ruler, an eraser, a pencil sharpener.

Time allowed

- 1 hour

Instructions

- Use black ink or black ball-point pen. Use pencil only for drawing.
- Fill in the boxes at the top of this page.
- Answer **all** questions.
- You must answer the questions in the spaces provided. Do not write outside the box around each page or on blank pages.
- Do all rough work in this book. Cross through any work you do not want to be marked.

Information

- The marks for questions are shown in brackets.
- The maximum mark for this paper is 60.
- You are reminded of the need for good English and clear presentation in your answers. Quality of Written Communication will be assessed in Question 1(c).



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Answer **all** questions in the spaces provided.

Question 1 is about materials and processes.

You are advised to spend about 15 minutes on this question.

1 (a) Materials are processed when being manufactured into products.

On the chart below use lines to connect **four** materials to the name of a suitable manufacturing process. You should use each process **once** only.

An example has been completed for you.

Material		Manufacturing process
Rough sawn timber		
Wool yarn		
Wheat flour		
MDF sheet		
<i>Acrylic tube</i>	—	<i>Extruding</i>
Cheese		Weaving
Copper sheet		Sieving
Sheet steel		Galvanising
Interfacing		Planing
Felt		
Butter		
Leather		

(4 marks)



1 (b) Shown below are three different sources for materials.

Material sources
Trees and plants
Animals
Minerals

1 (b) (i) From the list above, name a non-renewable source.

.....
(1 mark)

1 (b) (ii) Give an example of a specific non-renewable material, and explain why this material may eventually run out.

Example

Explanation

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.....

.....

(3 marks)

Question 1 continues on the next page

Turn over ▶



1 (c)

Bioplastics are made from plants.

For example, disposable forks can be manufactured from a bioplastic made from potato starch.

Explain why products such as disposable forks made from bioplastics could be better for the environment.

Quality of written communication will be assessed in your answer.

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(6 marks)

14



Turn over for the next question

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ANSWER IN THE SPACES PROVIDED**

Turn over ▶



0 5

Question 2 is about design development.

You are advised to spend about 20 minutes on this question.

- 2 Visitors to tourist attractions often buy souvenir gifts from the gift shop.
The design of the gifts reflects the kind of attraction visited.

A designer wishes to develop products suitable for sale in an aquarium gift shop.
A sea life themed picture is shown below.



2 (a) In the space below, use images from the picture (shown on page 6) to develop a design that reflects the sea life theme.

You should select **one** of the following products for your design.

Fabric badge

Key fob

Biscuit

Marks will be awarded for meeting the requirements below.

- Producing an idea which is appropriate for an aquarium souvenir.
- Creative use of the images in the picture.
- Adding notes to your design to explain the details of your design.
- The design must be possible to make using equipment and processes with which you are familiar.

You will be asked to describe in more detail how you would make this product in part (b) of this question.

Circle the product you have chosen:

Fabric badge

Key fob

Biscuit

(6 marks)

Turn over ►



2 (b) Produce a step by step plan to explain how you could make your idea in part (a) using resources available at your school.

Include in your answer the information detailed below which would allow someone else to make your design.

- Dimensions, size or weight (2 marks)
- Materials or ingredients (2 marks)
- Processes for making, assembly and finishing (6 marks)
- Names of tools and equipment to be used (3 marks)

Tools and equipment used



2 (c) Explain how you could evaluate the success of your aquarium gift design.

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(3 marks)

22

Turn over for the next question

Turn over ▶



Question 3 is about the labelling of products.

You are advised to spend about 10 minutes on this question.

3 The picture below shows a drinks carton.



© Thinkstock

3 (a) Explain why the following information is needed on drinks carton packaging.

Labelling information	Why this information is needed
Bar code
Ingredients list

(4 marks)



3 (b) Name **two** other pieces of information required on drinks carton packaging.

1.....

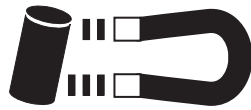
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2.....

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(2 marks)

3 (c) The following symbols are often found on packaging.



Explain why these symbols are included on packaging.

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(3 marks)

9

Turn over ▶



Question 4 is about cutting processes.

You are advised to spend about 15 minutes on this question.

4 Materials need to be cut to size to make products.

Shown below are pictures of specific hand tools that are used to cut materials.

Tool A

Tool B

Tool C



©Thinkstock

4 (a) Give the specific name for **one** of the tools shown above.

.....
(1 mark)

4 (b) Describe how you would use **one** of the tools shown above safely and accurately to cut materials.

Chosen tool

(3 marks)



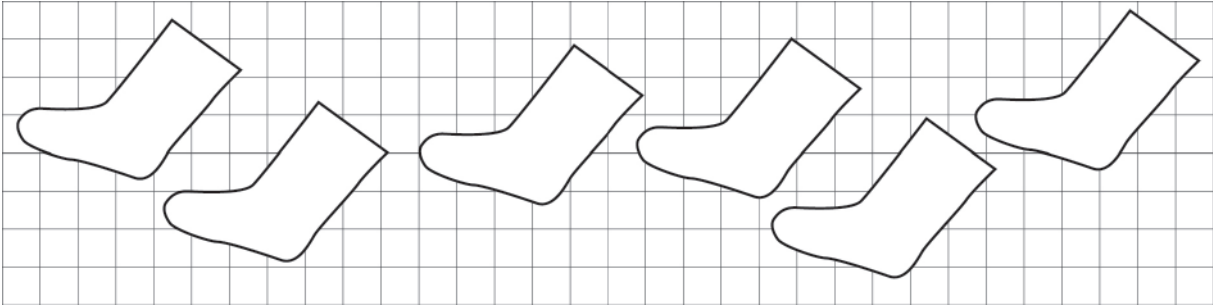
4 (c) Give the specific names for **two** tools, other than those shown on page 12 that you could use to cut materials.

1

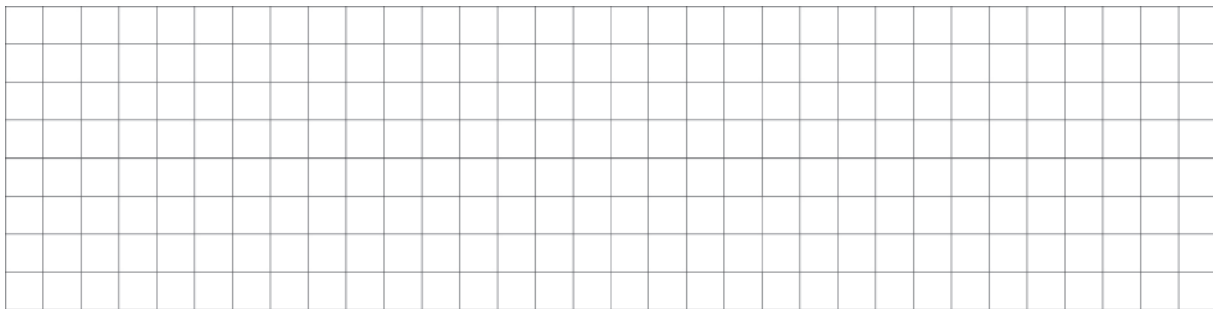
2

(2 marks)

4 (d) A student needs to cut out **six** identical shapes in MDF sheet and has marked out the shapes, ready to cut, as shown below.



4 (d) (i) In the space provided, draw a better layout for the **six** shapes.



(3 marks)

4 (d) (ii) Explain why the layout you have drawn is an improvement on the example provided.

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(3 marks)

Turn over ▶



4(e) Explain how you would make sure that every shape cut is identical.

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(3 marks)

15

END OF QUESTIONS



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