

Centre Number	Candidate Number	Name
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CAMBRIDGE INTERNATIONAL EXAMINATIONS  
International General Certificate of Secondary Education

**DESIGN AND TECHNOLOGY**

**0445/03**

Paper 3 Realisation

May/June 2003

**1 hour**

Candidates answer on the Question Paper.  
No additional materials are required.

**To be taken together with Paper 1 in one session of 2 hours 45 minutes.**

**READ THESE INSTRUCTIONS FIRST**

Write your Centre number, candidate number and name in the spaces at the top of the page.  
Write in dark blue or black pen in the spaces provided on the Question Paper.  
You may use a soft pencil for any diagrams, graphs or rough working.  
Do not use staples, paper clips, highlighters, glue or correction fluid.

Answer any **two** questions.

The number of marks is given in brackets [ ] at the end of each question or part question.

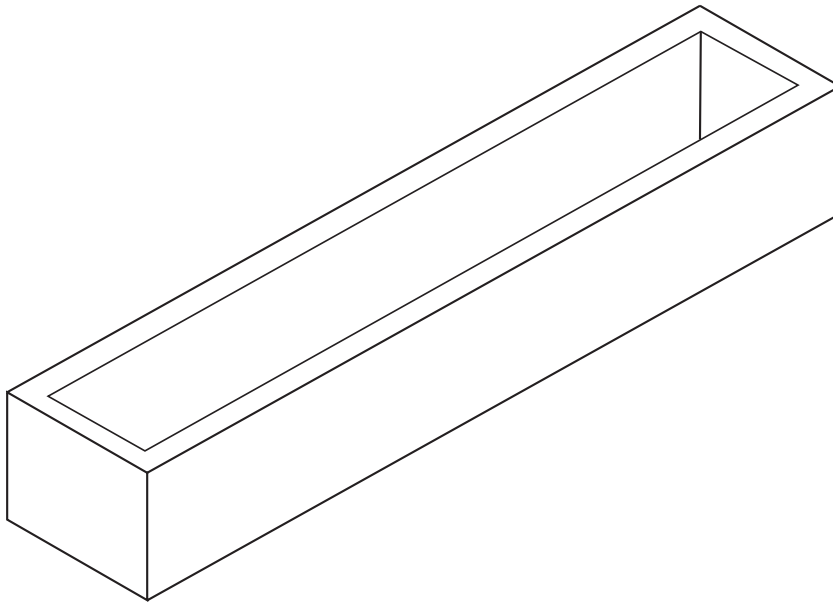
If you have been given a label, look at the details. If any details are incorrect or missing, please fill in your correct details in the space given at the top of this page.

Stick your personal label here, if provided.

For Examiner's Use	
<b>1</b>	
<b>2</b>	
<b>3</b>	
<b>4</b>	
<b>TOTAL</b>	

This document consists of **14** printed pages and **2** blank pages.

1 (a) A window box designed to hold potted plants is shown.



(i) Name a specific wood you would use to make the box.

.....

Give **one** reason for your choice.

.....

..... [2]

(ii) Make sketches to show how you would join the corners of the box together.

Name the joint or joining method you have used.

[8]

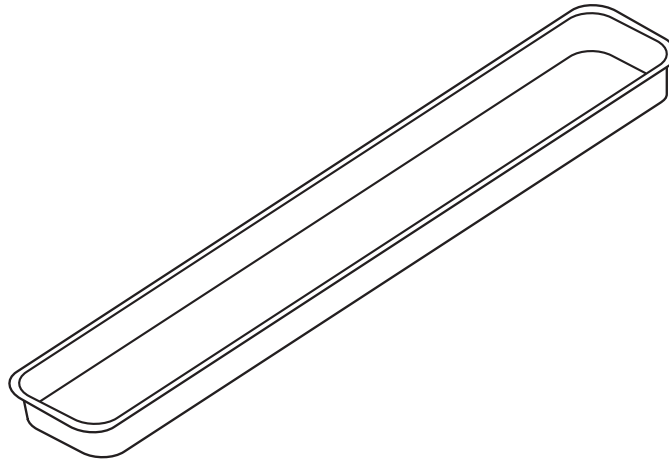
(iii) Name the material and the method of fixing you would use for the bottom of the box.

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

(iv) Describe how you would protect the finished box from the weather.

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

(b) Once placed in the window box the plants will need watering. To avoid continually soaking the box a tray insert will be needed.



**Tray insert**

(i) State a suitable material for the tray.

.....  
Give **one** reason for your choice.  
.....  
..... [2]

(ii) Give a method you could use to produce the tray.

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

(iii) Using notes and sketches explain how you could produce the tray.

[8]

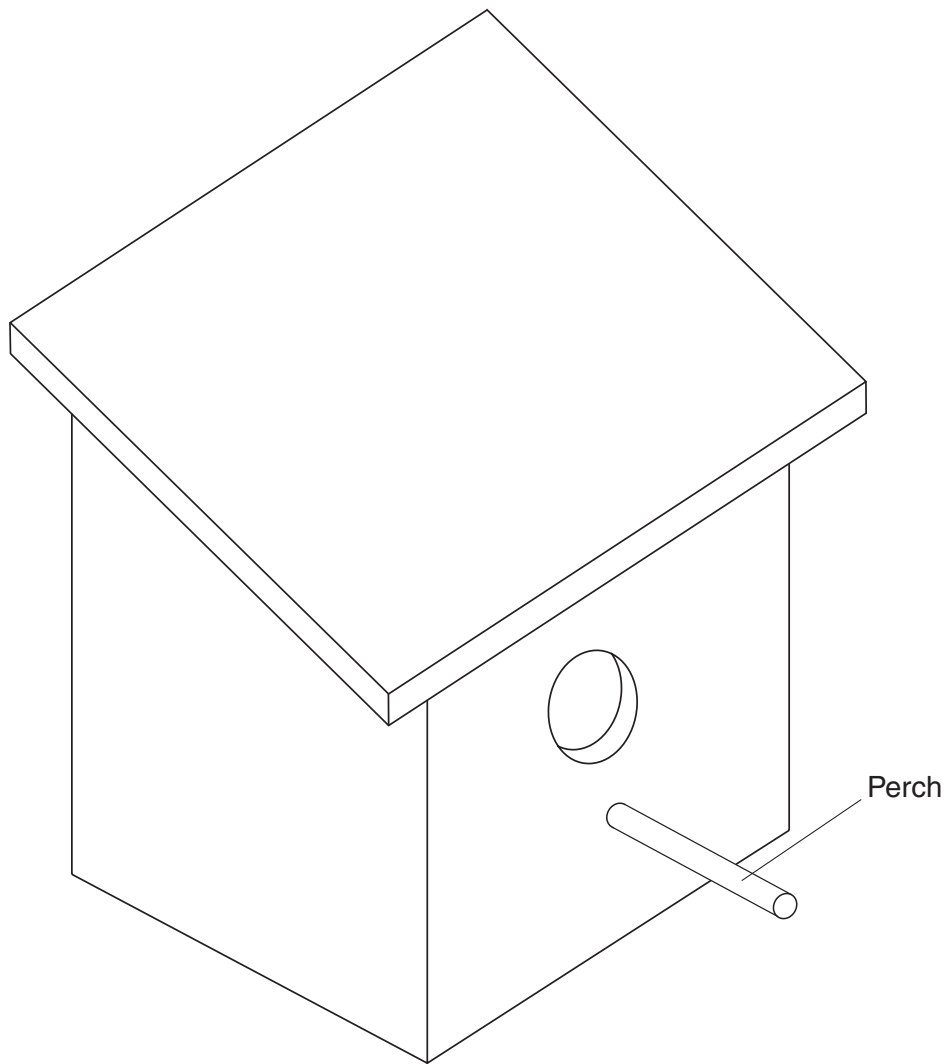
(iv) Name **two** tools you could use to produce the tray.

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

(v) Describe how the manufacture of the tray will make it rigid.

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

2 A nesting box for **small** birds is shown. The box is to be made from wood.



(a) Give **two** important features which must be taken into account when making the box.

1. .... [2]

2. .... [2]

(b) Describe using notes and sketches:

(i) how the sides and base would be fixed together;

[7]

(ii) how the perch would be fixed to the box;

[4]

(iii) how access could be gained to the inside of the box and prepare it for use the following year.

[4]

(c) Suggest a preservative that would be suitable to protect the box from the weather.

Give **one** reason for your choice.

.....

..... [2]

(d) List **nine** tools which could be used to make the box.

**Three** of which must be marking out tools.

- 1. ....
- 2. ....
- 3. ....

[3]

**Three** of which must be cutting tools.

- 1. ....
- 2. ....
- 3. ....

[3]

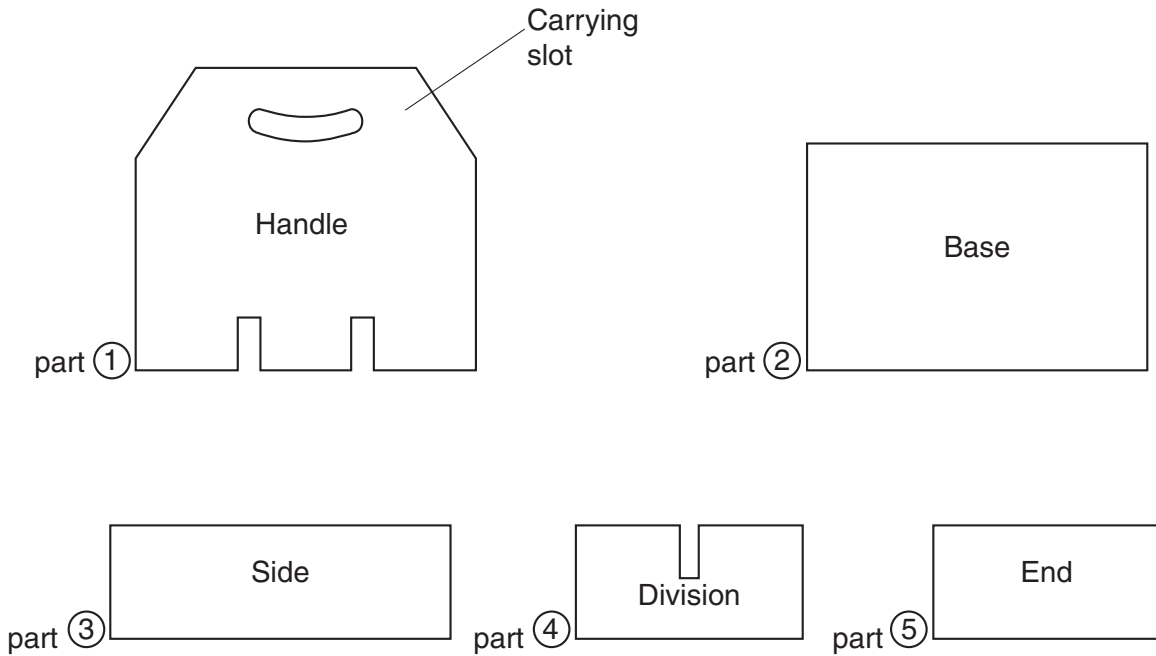
**Three** of which must be finishing tools or aids.

- 1. ....
- 2. ....
- 3. ....

[3]

3 Shown below are the contents of a flat pack kit made from manufactured board. The kit, when assembled forms a carrying rack to hold six bottles of acrylic paint of the type found in a school art room.

(a) There are **eight** separate parts in the kit. Identify how many of each part are required, and write your answer on that part.



[3]

(b) (i) State a suitable manufactured board for the carrier.

..... [1]

(ii) The carrying rack would ideally be made from different thicknesses of material.

Suggest **two** suitable thicknesses. Identify which parts they need to be, and give the reason why you think they are appropriate.

.....  
.....  
..... [4]



(c) (i) Using notes and sketches, design an instruction sequence showing the purchaser how to assemble the kit in four stages. Use the boxes provided.


[8]

(ii) Make a list of **four** tools/aids needed to complete the assembly.

.....

.....

.....

..... [4]

(d) (i) Explain why the slot for carrying the rack is shaped as shown.

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

(ii) Show how you would mark out the carrying slot using the centre line given.



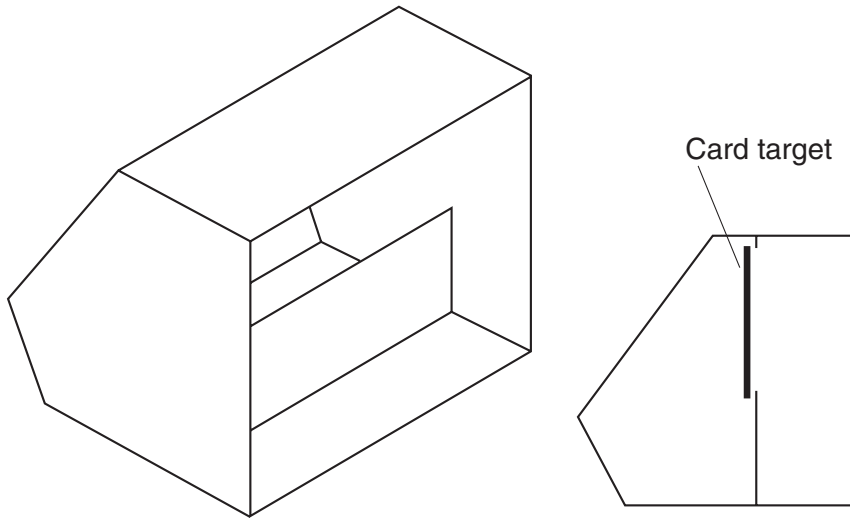
[3]

(iii) Describe, using notes and sketches, how you could cut the slot and finish to a smooth edge.

.....  
.....  
.....  
.....

[5]

4 A pellet collector for an air rifle target is shown. The product is made of sheet metal.



(a) Give **two** reasons why sheet metal would be a suitable material for the pellet collector.

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

(b) Using notes and sketches describe how the main body of the product could be formed from one piece of sheet metal.

[8]

(c) Sketch and name **two** tools that could be used to mark out the shape of the material required.

1.

[3]

2.

[3]

(d) Use notes and sketches to show the following stages in producing and forming the finished article to:

(i) cut the sheet metal to shape;

[5]

**(ii)** make the edges of the metal safe;

[3]

**(iii)** bend the metal into the shape required;

[3]

**Turn over for part (iv)**

(iv) join the sides to each other to finish the product without using heat.

[3]



