

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 2012

# Design and Technology: Short Course

# 45751

Unit 1 Written Paper

Wednesday 16 May 2012 1.30 pm to 2.30 pm

**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 3 (b) (ii).



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# 45751

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

Question 1 is about materials and components.

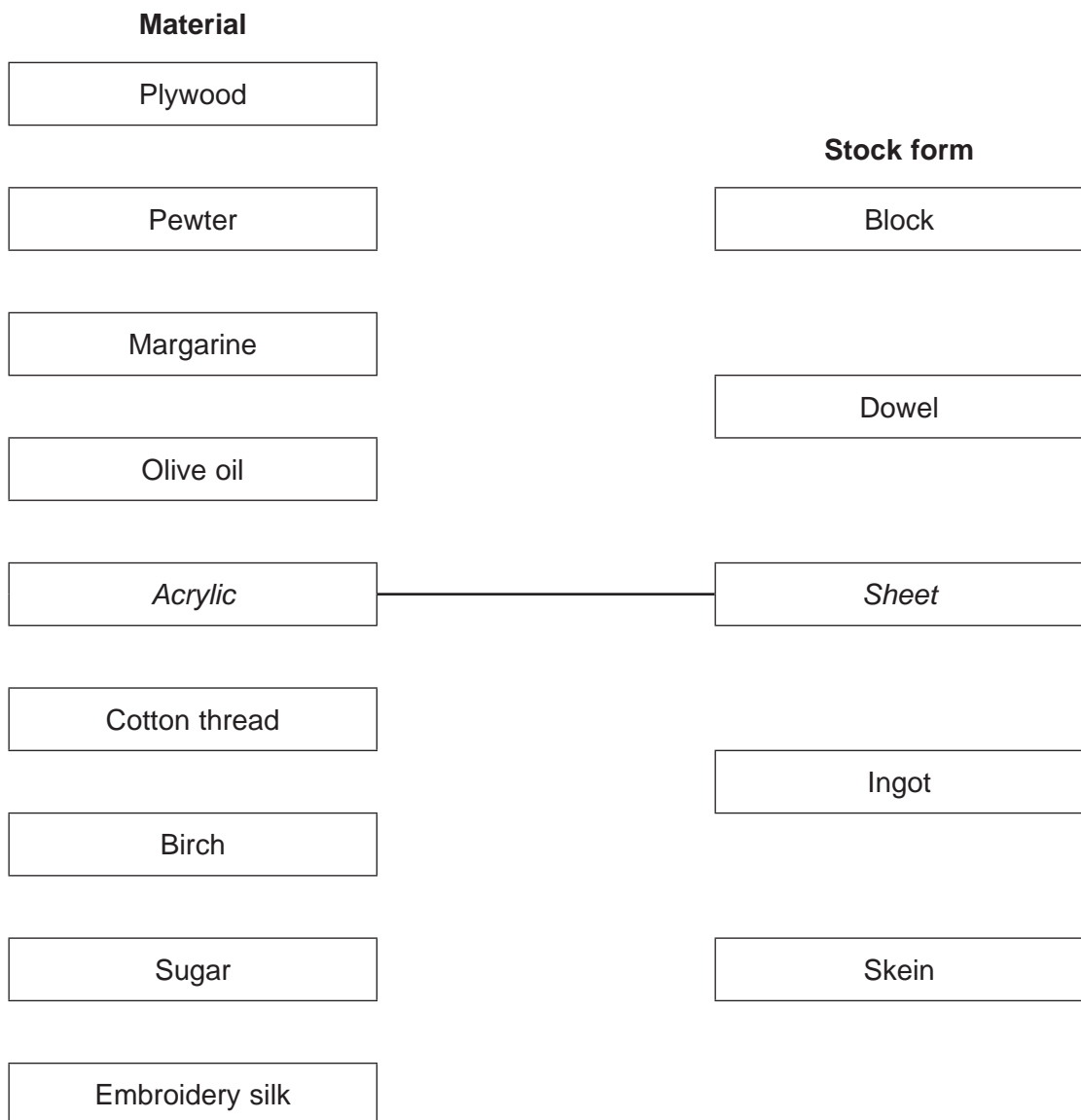
You are advised to spend about 10 minutes on this question.

**1 (a)** Materials are available in many different stock forms.

On the chart below, use lines to connect **four** materials to a stock form they are available in.

Do **not** use any material more than once.

An example has been completed for you.



(4 marks)

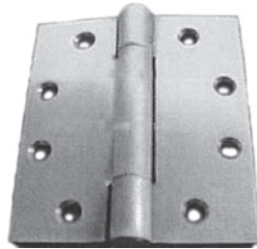


1 (b) Three standard components are shown below.

Zip



Hinge



Puff pastry sheets



1 (b) (i) Choose **one** standard component from those shown above and name a product into which you could incorporate this.

Chosen standard component .....

Product .....

(1 mark)

1 (b) (ii) Name a different standard component you could incorporate into the product you named above in part (b) (i).

.....  
(1 mark)

1 (c) Describe the advantages and disadvantages of using standard components.

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(6 marks)



**There are no questions printed on this page**

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ANSWER IN THE SPACES PROVIDED**

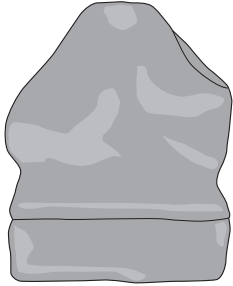


Question 2 is about the process of designing.

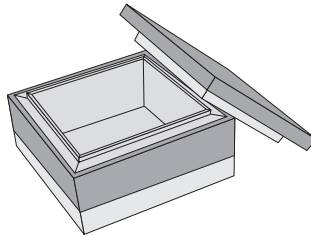
You are advised to spend about 25 minutes on this question.

2 Shown below are three products that you could make at school.

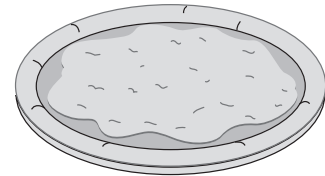
**Winter hat**



**Trinket box**



**Meat free pizza**



Choose a product from above and name a target market (customer) for which this product could be designed.

In part (b) you will be asked to develop an idea for this product.

Chosen product .....

Target market .....

2 (a) For **each characteristic** in the table below, give **one** specification point and explain why this is important to your chosen target market.

Characteristic	Specification point	Why this is important to your chosen target market
Function	..... .....	..... .....
Aesthetics	..... .....	..... .....

(4 marks)

Turn over ►



**2 (b)** In the box below, develop an idea for the product you chose on page 5.

Marks will be awarded for meeting the following requirements.

- Developing the design idea to make it suitable for the target market you named on page 5.
- Adding notes to your design to explain the changes you have made and how the idea matches your specification points in part (a).
- Your 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 (c).

(6 marks)



**2 (c)** Produce a step by step plan to explain how your idea in part (b) would be made in a 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 *(2 marks)*
- Quality control checks to ensure consistency and accuracy *(2 marks)*

Tools and equipment used



Question 3 is about packaging.

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

**3 (a)** One function of packaging is to make products tamper proof. Give **three** other functions of packaging.

1 .....

2 .....

3 .....

(3 marks)

**3 (b)** Study the three different packaging solutions for milk below.

**Glass bottle**



© Thinkstock

**Plastic bottle**



© Thinkstock

**Tetrapak carton**



© Thinkstock

**3 (b) (i)** Explain why these packaging solutions are suitable for storing milk. In your answer you should use some of the functions you have given in part (a).

.....  
.....  
.....  
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(3 marks)





**3 (b) (ii)** Evaluate the impact of the milk packaging solutions (shown on page 8) on the environment.

Quality of Written Communication will be assessed in your answer.

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(6 marks)

**3 (c)** The following symbols are often found on packaging. Explain what they mean.

Symbol	What it means
	<p>.....</p> <p>.....</p>
	<p>.....</p> <p>.....</p>

(2 marks)

Turn over ▶



Question 4 is about constructional processes.

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

4 Products are often assembled from parts which need joining together.

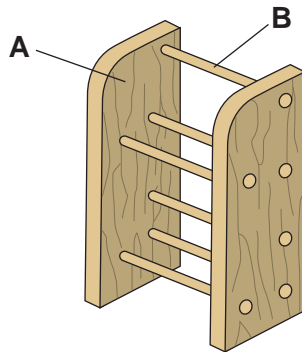
**Tote bag**

Part **A** – Cotton bag body  
Part **B** – Cotton bag handles



**DVD rack**

Part **A** – Beech rack sides  
Part **B** – Beech rack shelves



**Breaded chicken**

Part **A** – Chicken fillet  
Part **B** – Breadcrumbs coating



4 (a) Choose **one** product from those shown above and use notes and/or sketches to explain how parts **A** and **B** would be joined together.

Chosen product .....

(5 marks)



**4 (b) (i)** Explain why it is important to carry out a risk assessment before making begins.

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*(2 marks)*

**4 (b) (ii)** Carry out a risk assessment for the making process(es) you described in part (a).

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*(3 marks)*

<b>10</b>

**END OF QUESTIONS**



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