

Candidate Name	Centre Number	Candidate Number

WELSH JOINT EDUCATION COMMITTEE
General Certificate of Secondary Education



CYD-BWYLLGOR ADDYSG CYMRU
Tystysgrif Gyffredinol Addysg Uwchradd

271/02

**GCSE
DESIGN AND TECHNOLOGY**

SHORT COURSE

FOCUS AREA: GRAPHIC PRODUCTS

(Higher Tier - Grades D to A*)

P.M. TUESDAY, 5 June 2007

(1 Hour)

	Leave Blank
Question 1	
Question 2	
Question 3	
Question 4	
TOTAL MARK	

ADDITIONAL MATERIALS

You will need basic drawing equipment and coloured pencils for this examination.

INSTRUCTIONS TO CANDIDATES

Write your name, centre number and candidate number in the spaces at the top of this page.

Answer **all** questions.

Write your answers in the spaces provided in this booklet. Where the space is not sufficient for your answer, continue the answer at the back of the book, taking care to number the continuation correctly.

INFORMATION FOR CANDIDATES

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

No certificate will be awarded to a candidate detected in any unfair practice during the examination.

Answer all questions in the spaces provided.

1. (a) A designer needs to carry out research before designing a new toy for a three-year-old child.



Some research activities are shown in the table below. Complete the table by stating what important information can be found from these activities. *One example has been done for you.* 3 × [2]

Research Activity	Outcomes of research
Talk to a three-year-old child	<i>To establish the types of activities that are popular with three-year-olds.</i>
Look at anthropometric data
Read a book on child development
Look at a materials properties website

(b) Give **three** safety concerns that a parent may have when buying a toy. 3 × [1]

Concern 1:

.....

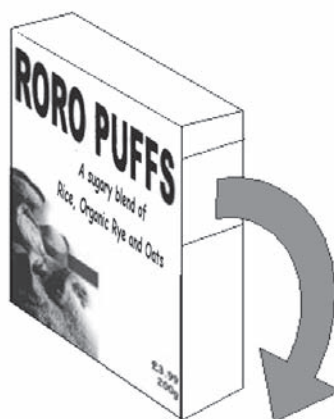
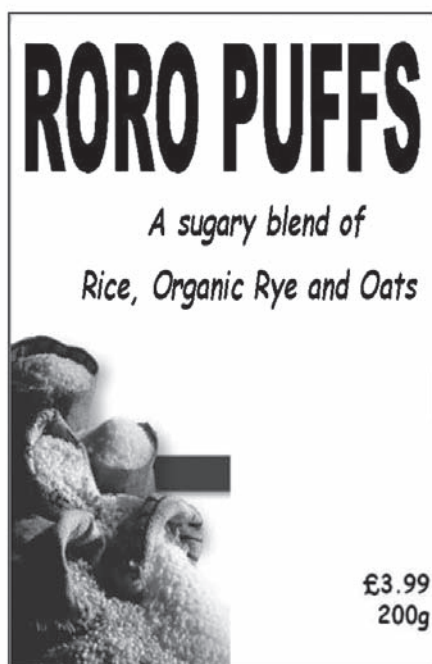
Concern 2:

.....

Concern 3:

.....

2. Sales of the breakfast cereal shown below are falling.



Ingredients: Rice, rye, oats, honey, sugar, salt.			
	Guideline daily amount	Each serving with milk	% guideline daily amount
Calories	2000kcal	170kcal	8%
Sugar	90g	27.8g	30%
Salt	6g	0.8g	14%
Saturated fat	20g	2.4g	12%
Fat	70g	4.0g	6%

- (a) Study the pictures shown and give **two** reasons why you think sales of this cereal have fallen. 2 × [2]




Reason 1:

.....

Reason 2:

.....

(b) The pictures below show three kettles.

			
Kettle	A	B	C
Cost	£4.99	£19.99	£37.99
Materials	White Plastic	Stainless Steel	Thermochromic Plastic
Where made	China	Europe	UK
Water capacity	1.5 Litres	1 Litre	2.3 Litres

- (i) Even though it is expensive, some people would decide to buy kettle C. Give **one** reason for this. [2]

.....
.....

- (ii) Give **two** reasons why kettle A can be sold at this price. $2 \times [2]$

Reason 1:

.....

Reason 2:

.....

- (iii) Kettle C uses a thermochromic plastic. Give **two** benefits of using this material. $2 \times [2]$

Benefit 1:

.....

Benefit 2:

.....

3. (a) One part of the design process is called *development*. One development activity might be to consider a range of possible colours for a product. List **three** other activities that are part of development. 3 × [1]

Activity 1:

Activity 2:

Activity 3:

- (b) Name a specific ICT/CAD package and explain how it could be used to help with the development of a new product.

Name of package [1]

Use in development [2]

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

- (c) For a product of your choice, describe **two** benefits of using CAM (computer aided manufacturing) to make the product. 2 × [1]

Product

Benefit 1:

Benefit 2:

- (d) Describe **two** environmental issues that should be taken into account when *designing* products. 2 × [2]

Issue 1:

.....

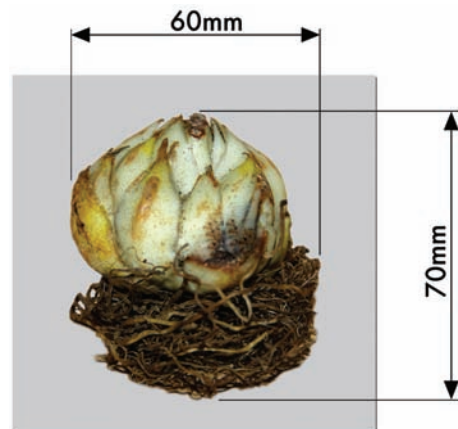
Issue 2:

.....

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4. A garden centre sells flower bulbs in the spring. A photograph of a bulb is shown alongside with its overall sizes. Packaging for the bulbs is needed.

The name of the garden centre is 'GROW'



- (a) A logo is needed for the package.

In the rectangle below, **design** a logo using the name 'GROW' or an image to represent the name. The logo must fill the rectangle.

Marks will be awarded for:

- designing a logo that uses the name or an image to represent the name;
- using all the space available;
- quality of drawing;
- quality of use of colour.

[3]
[1]
[2]
[2]



(b) The package needs to hold two bulbs.

- (i) **Design** a package that:
- holds two bulbs;
 - is made from folded card that is protected from moisture;
 - has the logo of the garden centre printed on it;
 - is decorated to make it look appealing;
 - has space on the package to include planting instructions.

Marks will be awarded for:

- holding two bulbs; [1]
- showing the space for the logo; [1]
- showing the decoration to be printed on the package; [2]
- showing the space for the planting instructions; [1]
- showing how the folded card package can be made. [3]

(ii) **State** the specification of the card to be used to make the package. [1]

.....

(iii) **State** how the card can be protected from moisture. [1]

.....

- (c) Make an accurate drawing of the net of your design for the package.
You must add the **three** (3) most important dimensions to your drawing.

[7]

