

INSTRUCTIONS

for writing your Task in Engineering

- This is a template (**guide**) for writing up the task.
- It is **not** to be just copied directly as it is.
- The **pictures** are for helping you understand and are **not** to be used.
- You have to get your own pictures **online** or with a **camera**.
- None of the writing in *italics* will be in the final version.
- Open a new **WORD** document and start typing.

Page	What to do	What to change
Title page	Fill in the info.	Name & Picture
Contents page	Exactly as it is	No page numbers for now
Introduction	Research online	Use your own words
Aims	Write at least 3 (5 is good)	Nothing
Research	Go online	All
Planning	Put in all info you find	N/A
Integration	Put in the numbers	Nothing
Making	Complete the chart	Nothing
Evaluation	Write your own	All
Conclusion	Be imaginative	All

Title Page to include (in no particular order)...

LCA ENGINEERING TASK

Module Two

Decorative Metalwork

April 2012

Your name

A picture or clipart



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Introduction

Decorative Metalwork in Ireland dates back to pre-historic times. The evidence of this can be found in the National Museum. Among the exhibits to be seen there are, the Ardagh Chalice, the Torc and many more works in Metal.

It is appropriate therefore that the LCA course includes Decorative Metalwork as a Module activity. The different methods we have learned about are:

- hot bending
- cold bending
- twisting
- scrolling
- welding
- finishing

My favourite kind of metal-art is

(Picture of e.g.)
The Ardagh Chalice

Aims page (between 3 and 5 aims)

Aims

1. I aim to design a product using Black Mild Steel as the material.
2. I aim to use the decorative techniques I have learned.
3. I aim to produce something that will look well and have a use.
4. Etc,...

(Picture of)

A Candlestick looks well and holds a candle

Research

When I started thinking about the task I had no idea what I was going to make.
I had a look through some magazines and noticed.....

I went online and found...

Etc, etc,.....

(Picture here)

This is an example of a simple but attractive piece of Decorative Metalwork

Research contd...

Researching the possible designs



This one had glass candleholders that made the design interesting
(Plans, photos, photocopies, sketches, ideas)

Planning
(Photos if any)

Planning
(Photocopies if any)

Planning
(Sketches)

Integration

Maths Formula 1. For working out the circumference of a circle.

$$\text{Circ.} = 2\pi R$$

Where: $\pi = 3.14$ (No. of times the diameter goes around the circle)
 R = The radius of the circle.
 $2R$ = The Diameter.

So another way of saying this is $\pi \times D$

Maths Formula 2. For finding the length of material needed for the legs.

$$L_t = L_1 + L_2 + L_3$$

Where: L_t = The total length of material needed.
 $L_1, L_2, L_3, \text{ etc.}$ = The individual lengths.

Maths Formula 3. For finding the Guard length

$$L_g = \pi \times D \times N$$

Where: L_g = Total length of material for the candle guard.
 D = Candle diameter.
 N = Number of rounds required.

Making (fill in the boxes)

Making

Operations Chart

<u>Part No.</u>	<u>Name</u>	<u>Material</u>	<u>Tools/ Process</u>	<u>Finish</u>	<u>Safety</u>
1	Legs	Black Mild Steel			
2	Stem	Black Mild Steel			
3	Plate	Bright Mild Steel			
4	Guard	Black Mild Steel			
5	Scroll	Black Mild Steel			
6	Pin	Steel			

Making contd. (insert your own pictures)

Machines I used:



One of the machines I used was a cut-off saw



The MIG welder is used to join the parts

Making contd...

Problems I had to overcome:

- 1.
 - 2.
 - 3.
 - 4.
- etc

Does it work?

Evaluation

I can't believe how well the seat has turned out. Etc,.....

Here it is in my back garden...



Last page!!!!

Conclusions

The first thing that I must say is how much I enjoyed making my...

I have learned a lot, including welding, forging, etc

Finally, I would like to thank the brilliant and patient James Macklin.