



Naomi

Coffee Table



# What's the situation?

## The Problem

Coffee tables are very useful for putting things on top but what about storage underneath? A coffee table is usually in the middle of a room so having storage very close to you is better than walking halfway round the house trying to find what you want.

## Design Task

I have chosen to use Design Task 11. The task says the following: A major high street retailer wishes to market a multi purpose, modern style, small coffee table aimed at the first time buyer. The product could include some storage space. Design and make a coffee table for this target market.

Conclusion: I have learnt that even modern tables need storage so that their usefulness can be maximized.

These pictures were taken in my brother's flat.



### Good Points

It is a reasonable size for a lounge in a flat and looks modern for a new time buyer.

### Bad Points

It doesn't have any storage space underneath so although the lounge looks tidy the rest of the flat isn't!



# Brief/Target Market

## Brief

I would like to design a useful yet stylish coffee table with added storage underneath. It needs to be small enough for a room but big enough for storing small objects. Design Task 11 states that it must be multi purpose. Most peoples idea of a coffee table is a piece of wood with four legs, however this does not have to be.

- The target market is first time buyers who need a small, stylish coffee table but with added storage for added usefulness.
- It will be for the younger generations, possibly on a budget, that prefer more stylish furniture.
- It would be for students at university for example, living in their own house who need a coffee table for their smallish lounge.

Conclusion: I have learnt that having an aim to go for will help me shape my project.

# Research Planning

## How will I collect my information?

To collect information I will:

- ✓ Take my own photos of coffee tables and analyse the good and bad points.
- ✓ Use the internet to see what coffee tables are on the market and are selling at the moment.

## What will I ask them?

I will need to ask the following questions:

- ✓ What is the most popular size for a coffee table?
- ✓ What is the most popular shape for a coffee table?
- ✓ What is the most popular wood/style for a coffee table?
- ✓ Do people prefer to buy coffee tables that are made from a sustainable source?

## Who will I ask the opinion of?

I asked my mum, who likes coffee tables a lot, the above questions. She said, " If I was buying a coffee table , I would look for one that would fit and suit my lounge, so I would choose one about 400 to 500mm<sup>2</sup>. Also for a rectangular one with rounded corners, a medium colour grain just not pine and it helps your conscience if it's made from a sustainable source but it has to be made to last.

## How will the information help me?

The information and tips that I have got will help me use the information to combine what people buy and have bought to create an original design that could go on the market and be sold.

**Conclusion:** I have learnt that asking questions and planning what I am going to do next will help me keep on top of my project.

Conclusion: I have learnt that people tend to buy a straight forward four leg coffee table so I intend to change their opinions.

# Existing Designs



## Bad Points

This table doesn't have any other storage apart from a flat surface.



## Bad Points

This table doesn't have any storage and is a bit big to call a coffee table.



## Good Points

This table isn't too big and looks nice inside a lounge.





## Good Points

This table has a good surface area so you can put more than one thing on top.

All the pictures on this page were taken from inside my house.

Conclusion: I have learnt that existing coffee tables that have storage aren't sought after because when I typed in coffee table there was only a few with added storage.

# Existing Designs

 Good points  
 Bad points



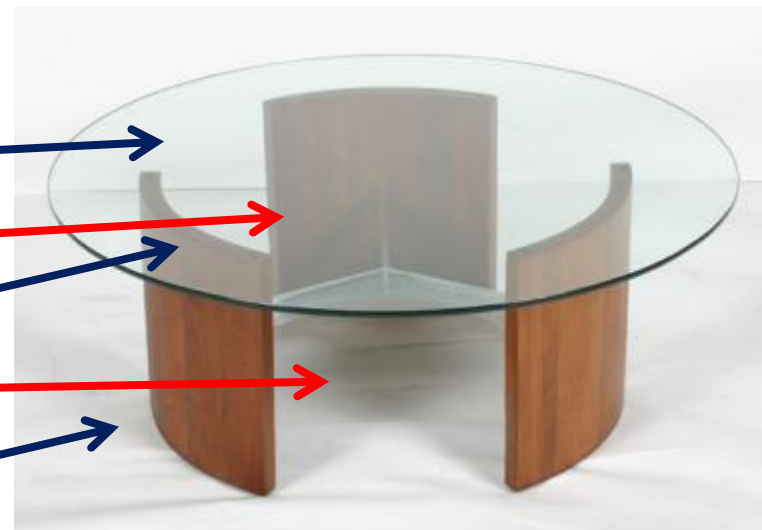
This table does have some storage.

The storage is not multi purpose.

The table is a nice size and has a nice finish.

The table is very chunky and the storage take up a lot of room.

[http://www.newroomsuk.co.uk/\\_shop/products/thumbnails/300x300-\\_\\_shop\\_products\\_kudos%20coffee%20table.jpg](http://www.newroomsuk.co.uk/_shop/products/thumbnails/300x300-__shop_products_kudos%20coffee%20table.jpg)



This table has a good surface area.

The table might be scratched by a ring.

This table will not scratch easily

The table doesn't have any storage.

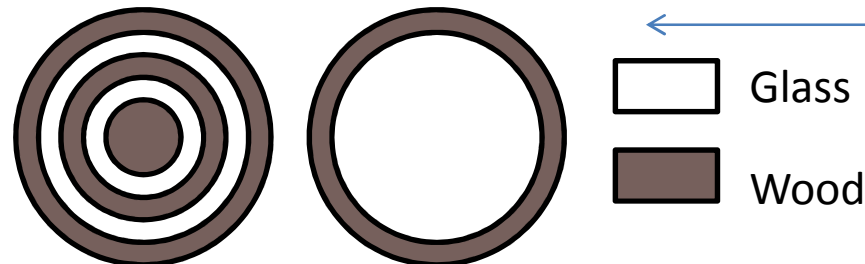
This table is a reasonable size.

[www.antiquehelper.com/auctionimages/44448t.jpg](http://www.antiquehelper.com/auctionimages/44448t.jpg)

# Specification

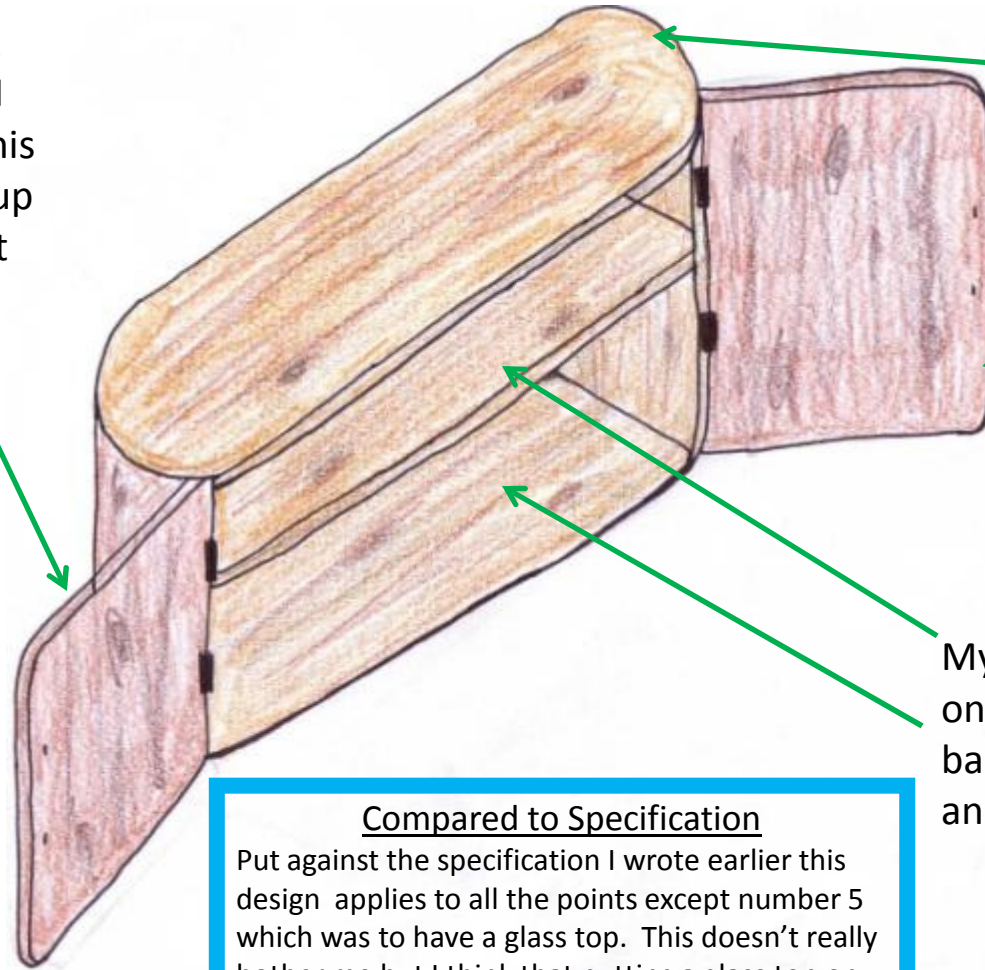
My design of a coffee table must be:

1. Made out of hard wood because it comes from a sustainable source and is very durable.
2. Come in lots of colours and grains.
3. No smaller than 300mm x 300mm and no bigger than 500 x 500mm because I consider the sizes in-between the most common.
4. Have some sort of storage as this is in the design specification and it is a good idea to make the coffee table more appealing.
5. It will have a glass top so that it can be easily cleaned and it can give the coffee table a contrast to just all wood. Below is an example of what it could look like.
6. Durable, sustainable and protected against the everyday harmful stains, e.g. Coffee, food and liquid.
7. Around 400mm tall as this is the most comfortable height to lean to put a cup down on a surface.
8. It mustn't cost more than £50 to make and it mustn't cost more than £150 to sell.



# My First Idea

To make it look tidy and nicer, I put doors on this table to cover up whatever is put inside.



To make the table look more interesting I thought about using light wood for the main body and dark wood for the doors and back.

My first idea had one shelf but the base doubles up as another shelf.

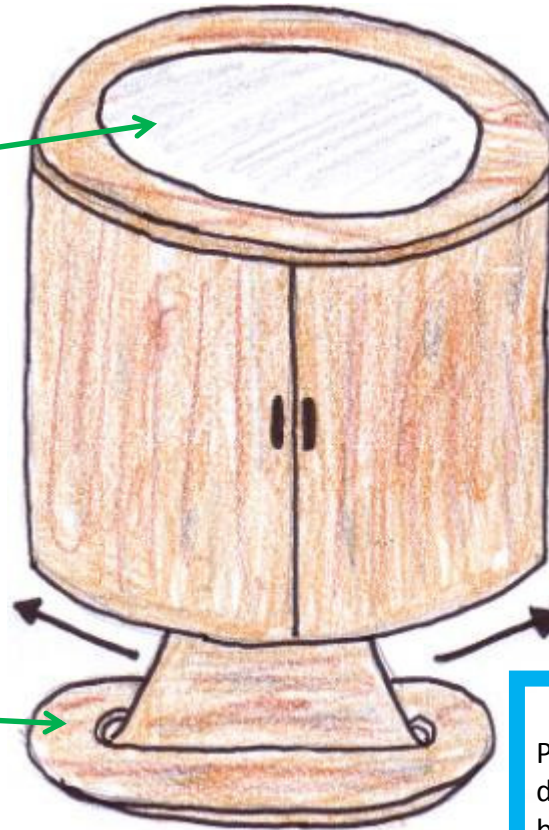
## Compared to Specification

Put against the specification I wrote earlier this design applies to all the points except number 5 which was to have a glass top. This doesn't really bother me but I think that putting a glass top on this design wouldn't really suit.

# My Second Idea

To make it look more stylish I thought it would have a glass top but only in the middle.

Instead of the normal four legs, I thought it could have one big support underneath.



For my second attempt I chose to go for a circular table but with a difference.

Instead of having opening doors I wanted to have sliding doors that curved around the table.

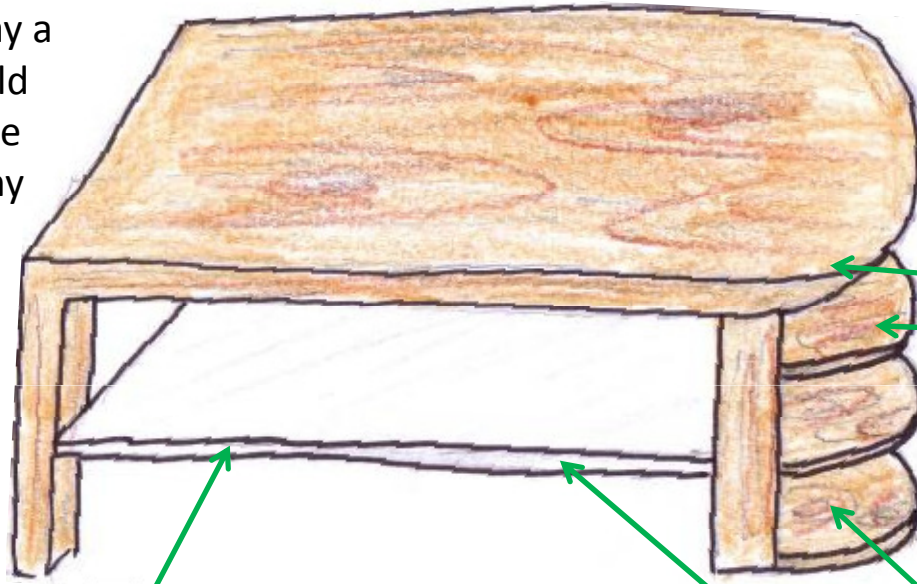
## Compared to Specification

Put against the specification I wrote earlier this design applies to all the points. I like this design but it would be very hard to make and I don't think that it is very stylish to go into a lounge.

# My Third Idea

THIS IS THE  
DESIGN I WILL  
USE!!! ←

For my third idea I decided to ask my friend Megan to say a few ideas she would like to see in a table to buy. This was my design after all the ideas were put together



For the main body and little shelves I think I would use a light coloured wood.

For the main shelf I think I would use glass to have a contrast to the wood.

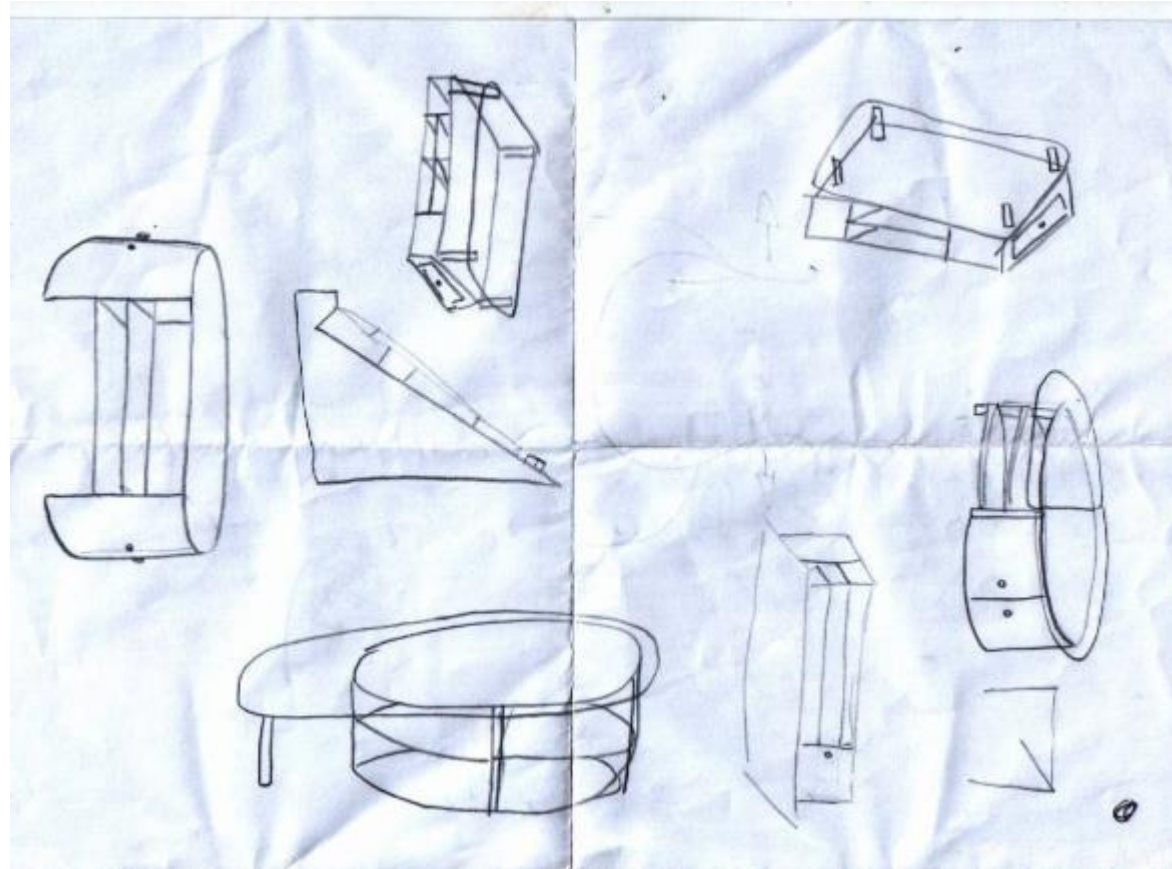
## Compared to Specification

Put against the specification I wrote earlier this design applies to all the points except number 5 which was a glass top but if I wanted at a later stage I could add a glass top to match the glass shelf.

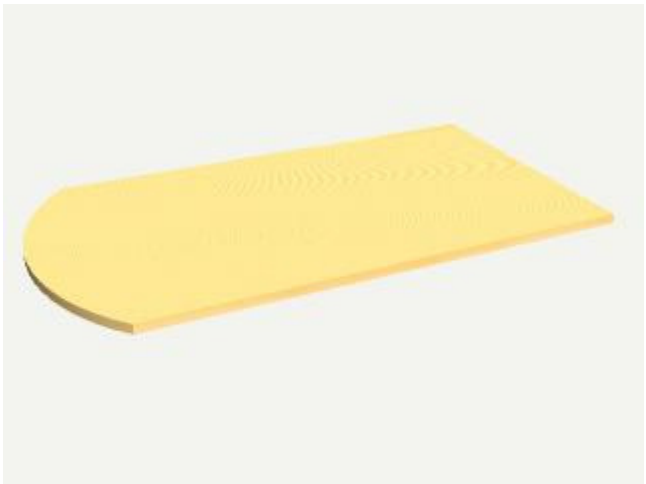
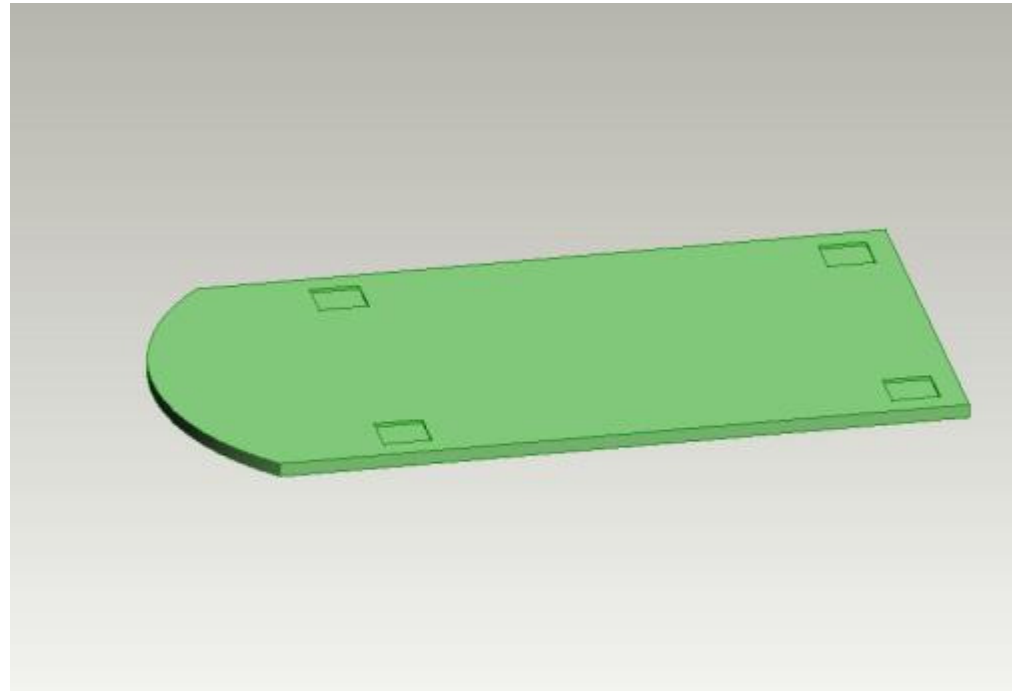
I thought about having one big shelf underneath and some smaller ones to hold little nic nac's to make it bland in with it's surroundings.

# In-between Ideas

These were some other ideas, which I took into consideration when designing my coffee table.



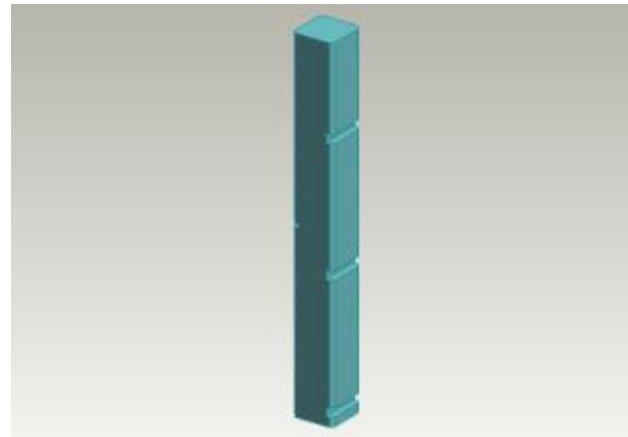
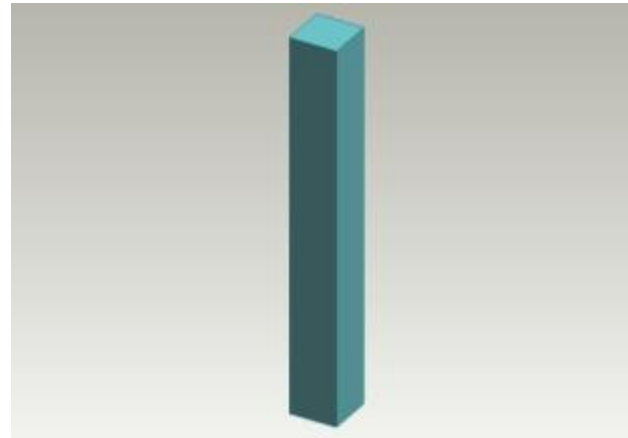
# Development of the Design



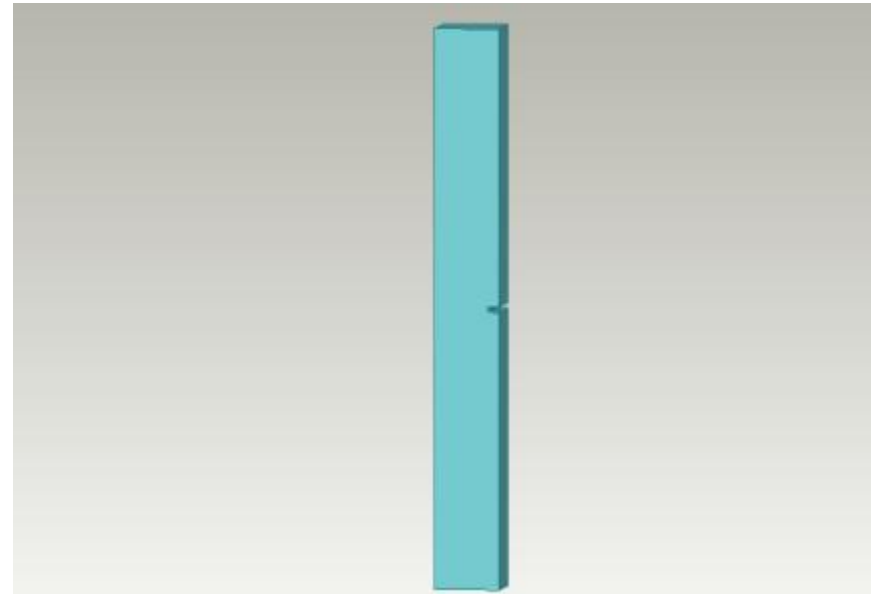
This is my first design of the top of the coffee table. It has a flat top and 4 leg holes 5mm deep to give the end structure more strength.

# Development of the Legs

This is my basic design of the four table legs. It is 70mm<sup>2</sup> and 600mm high. I asked my teacher about developing the design and he added that the table leg looks a bit boxy and boring. So to make the legs more interesting I decided to see if chamfering the edges would make it look better.

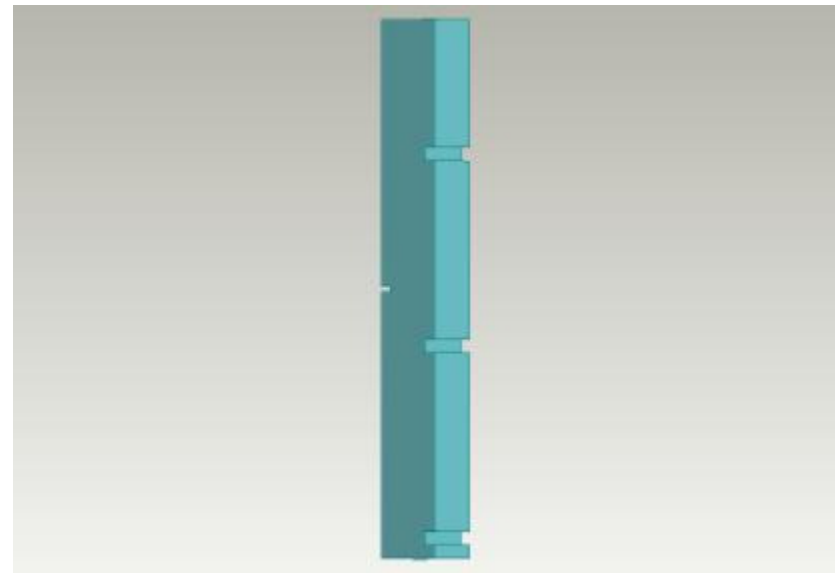
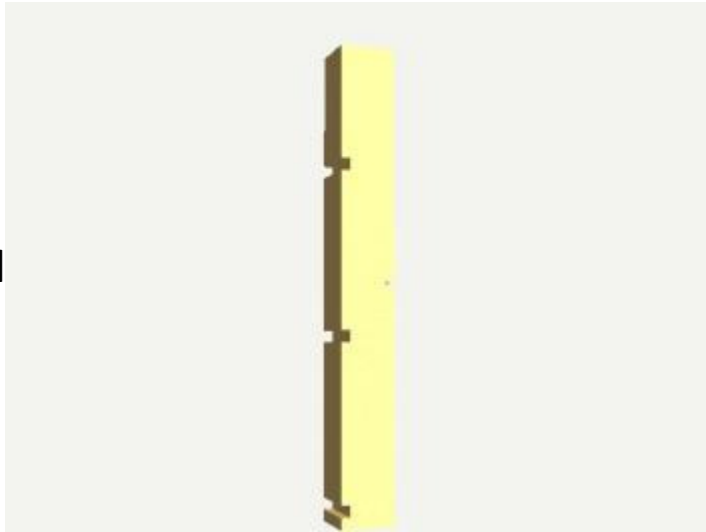


# The First design for One Leg



This is my first design for two of the four legs. It has a slit 300mm up, or half way. The slit is to support the glass shelf, it is 12mm deep and 6mm wide.

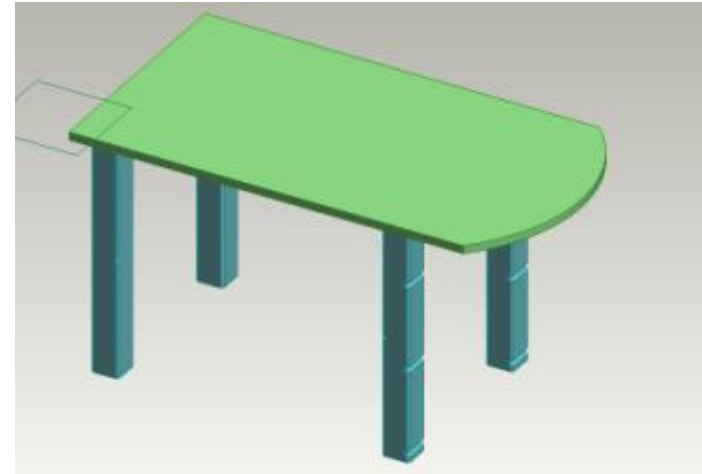
# The First design for the Second Leg



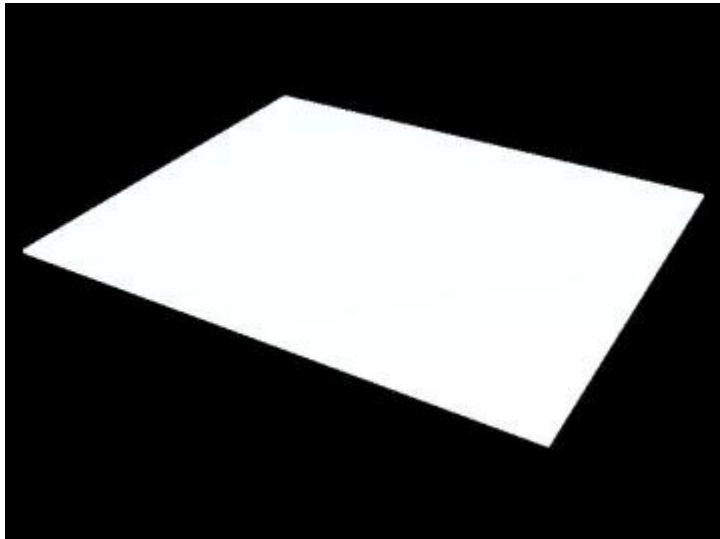
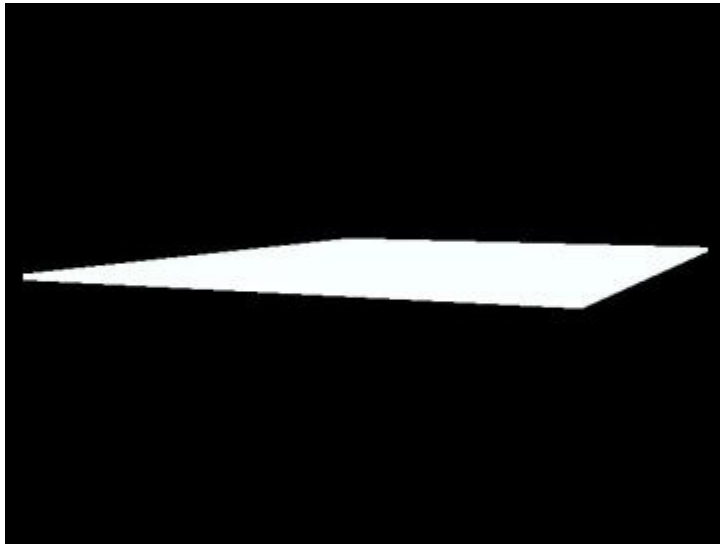
This is my first design for the other two legs. These will have the same slit as the others 300mm up but it will hold the outer 3 shelves as well.

# Development of the Table

This is my first CAD design for the simple structure of the table without any shelves.

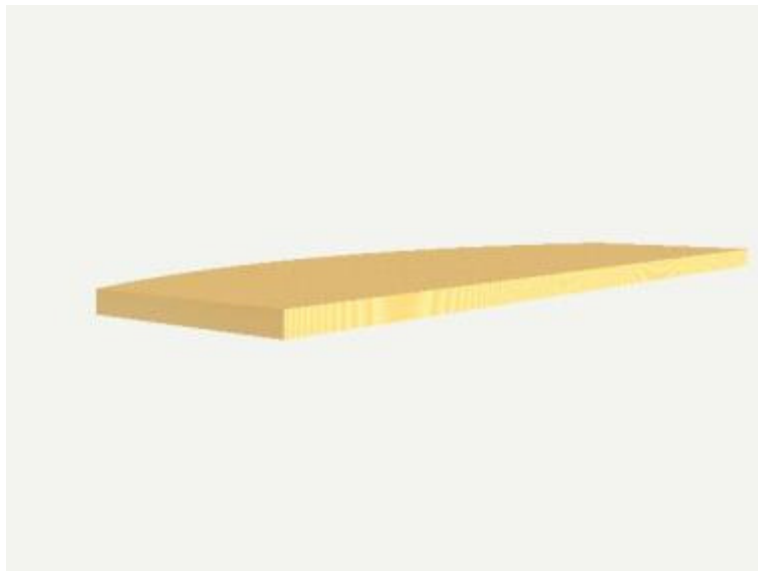
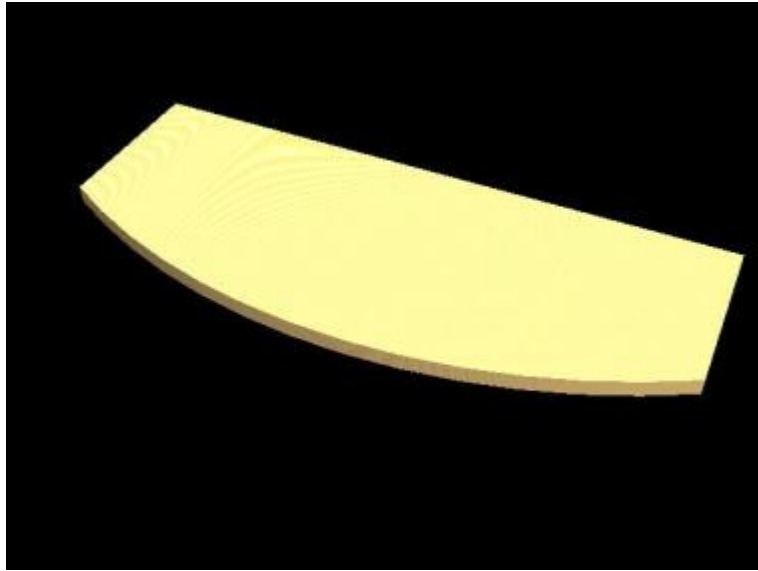


# The Glass Shelf



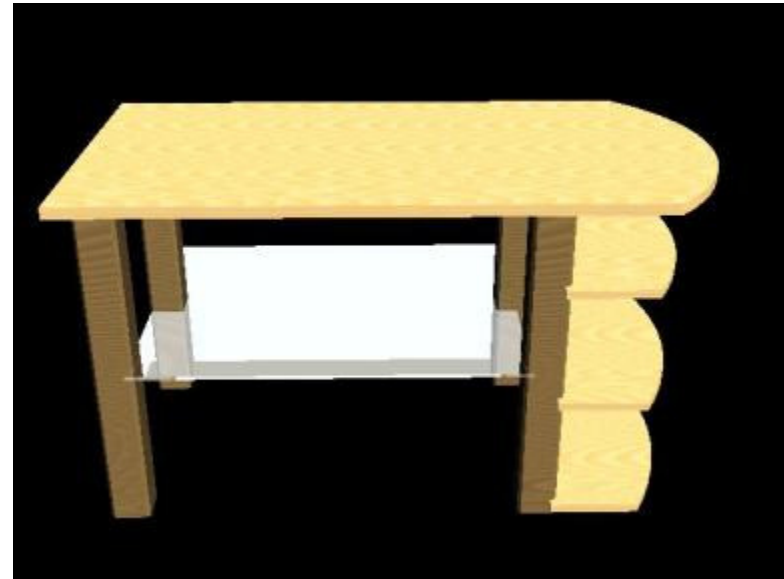
This is the plain and simple glass shelf that will fit into slots in the four legs.

# The Wooden Shelf

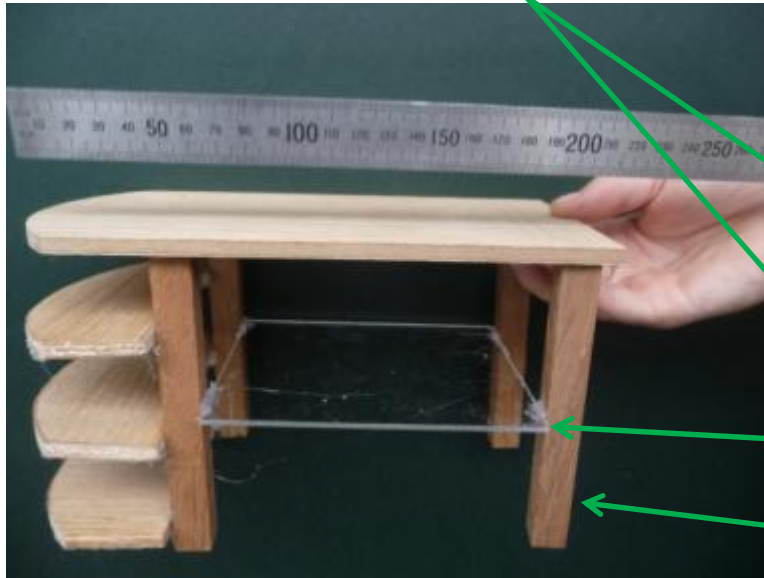
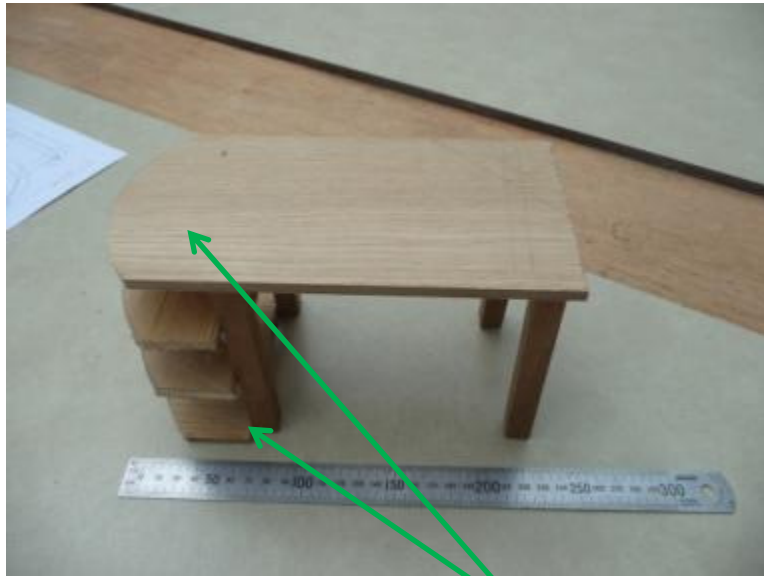


This is the wooden shelves that will be joined to only two of the legs.

# The Assembly



# Model making



This is my first model for my table. Since making this model I have looked at design and asked people's opinions. These are the changes which will help me develop my idea further.

- Get rid of the bottom shelf and make the legs 200mm shorter and the top 100mm shorter.
- Put a polished stainless steel rod through the top and two shelves to give support.
- Put a rim either around the bottom/top of the legs or around the glass shelf to keep the legs straight.
- Design a new look for the legs to make them less boxy.

# People's Opinions

**Megan** - It should have a completely circular end because the sudden curve doesn't look very nice. It should also be shorter so it fits into a living room and suits the height of a settee. It should also have a glass or inlaid wood so that it isn't just a block of wood. Get rid of bottom shelves because it could be easily broken or trodden on. Have a split down the middle of the small shelves and also a backing to stop things falling off. It should look prettier because it looks too average. Have circular drawers or a magazine holder. It needs to look less like a flat-pack piece of furniture. It should be made out of middle-ish dark wood so that it suits the rest of the furniture.

**Claire** – Make the corners less angular so they are in keeping with the rounded top. Use a darker wood for the shelves and top to create a more sophisticated look.

**Shannon** – Good mixture of curves and straight lines, and a good idea to have shelves at the side. Perhaps make the glass shelf smaller so you can't catch anything on the corners like your legs or clothing.

**Lauren** – Round the corners of the table top because it is easy to hit your legs on the corner so if they are rounded it won't hurt as much so it's safety conscious.

**Sophie** - Have it symmetrical both sides.

**Client** - It's a bit big as it is meant to be a coffee table. It could do with having a glass top inlay but smoked glass would do better than plain.

# Things to Consider

## Environmental:

- I will use recycled wood therefore saving cutting down another tree. If I were to make 5000 of these tables I would use wood from a sustainable source so for every tree that was used it meant 3 would be planted in it's place.

## Cultural:

- There aren't really any issues associated with culture.

## Moral:

- I will not put anything against any religions on the coffee table, e.g. symbols, words or pictures.

## Inclusivity:

- My coffee table is fine for disabled people to use, for instance a wheel chair user can easily reach the top and shelves. For the blind I will include a rim around the top side so that if they pull a coffee cup to close to the edge, 1. It won't fall off and 2. they will know where the edge is.

## Sustainability:

- I will use Stainless steel for the pole through the shelves because there will be less chance of rusting. I will put a finish on all the wood so that it looks professional and the wood will be protected and can be easily cleaned/dusted.

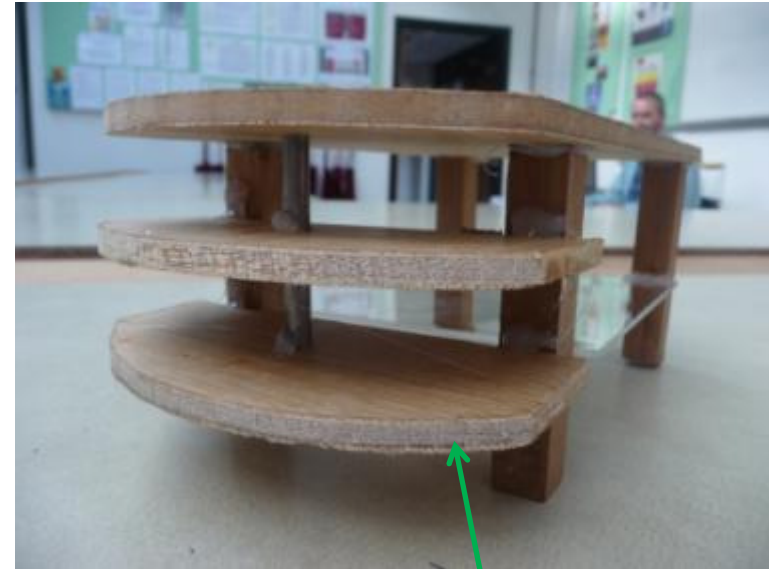
# Development of the model



This is the first few changes I made to the table:

- I made it shorter (height) by 200mm and shorter (length) by 100mm but obviously to scale.
- I got rid of the bottom wooden shelf.
- I had to make the glass shelf smaller to fit in with the new measurements and the legs became closer to fit the new measurements as well.

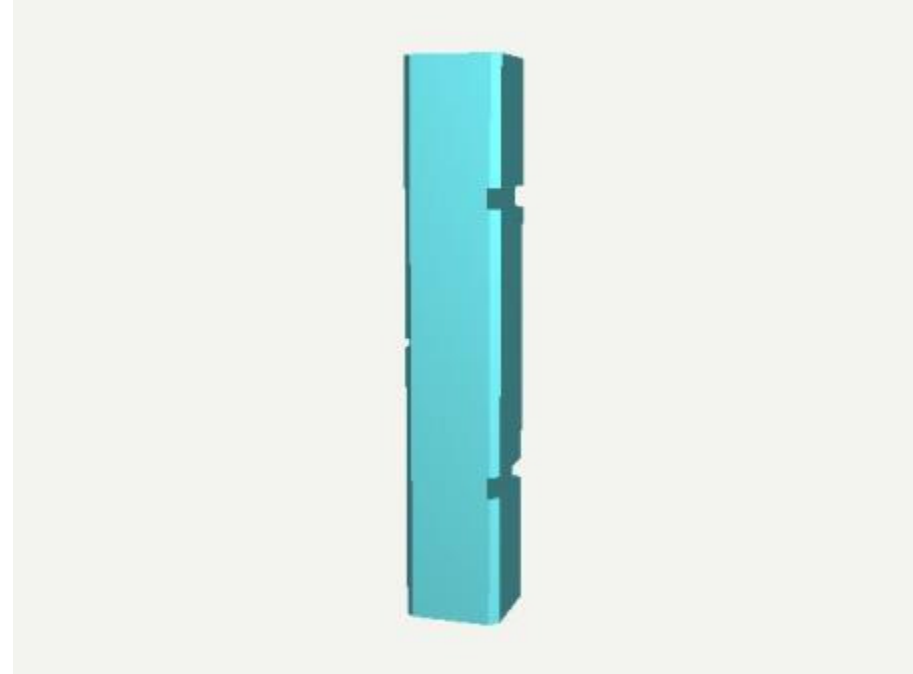
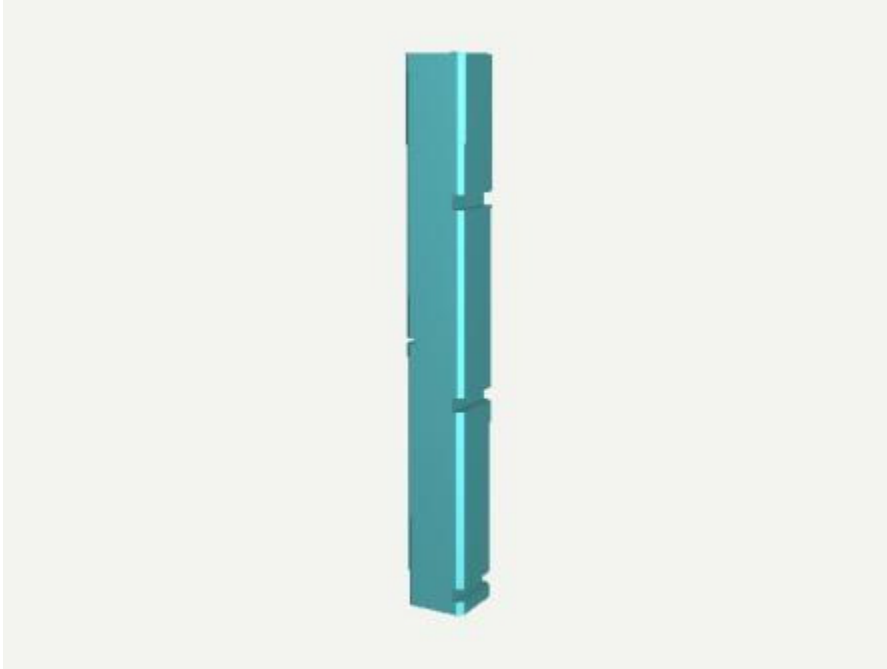
# Development of the model/design



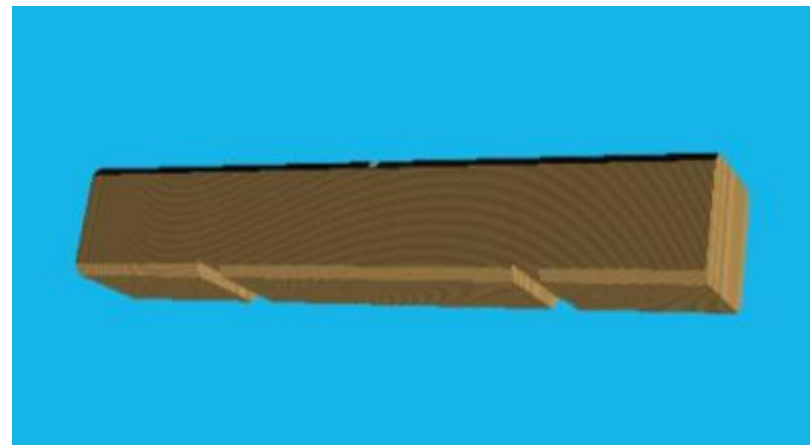
This is my almost finished model:

- I added metal bar through the wooden shelves to add support because when I picked it up, the shelf fell off so I had to use support.
- I decided to use a polished stainless steel pole because it would add contrast to the wood.
- I need to design a new look for the legs.
- I also need to put a rim around the legs.

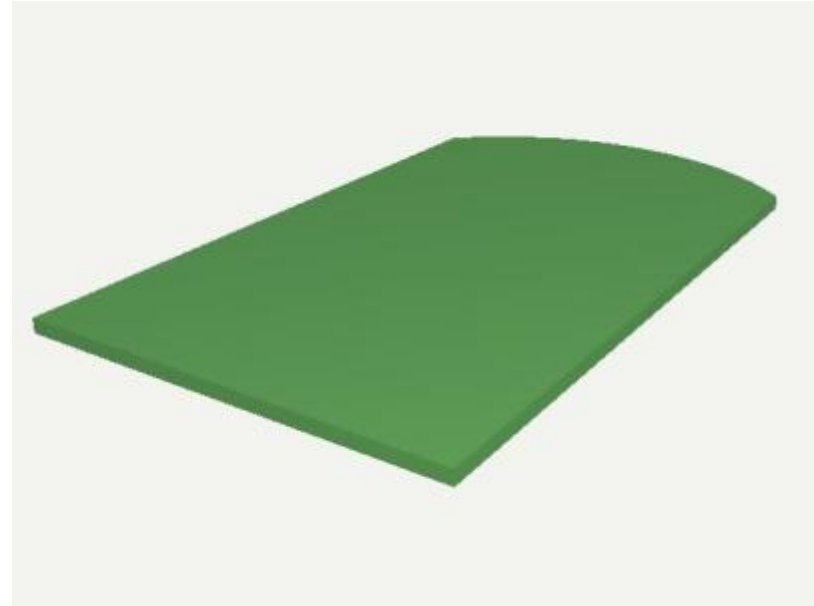
# The New ProDesktop Drawing



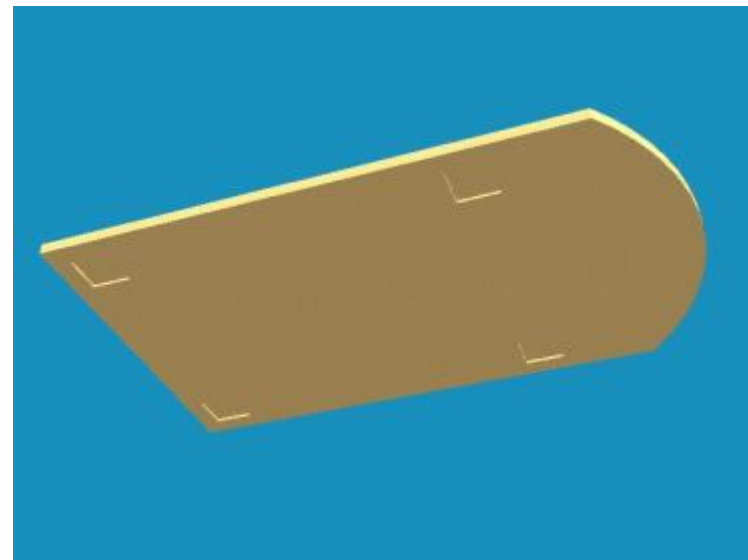
Previously I decided to shorten the leg and reduce the amount of wooden shelves on the outer side of the leg. I have also decided to add a chamfer to the edges.



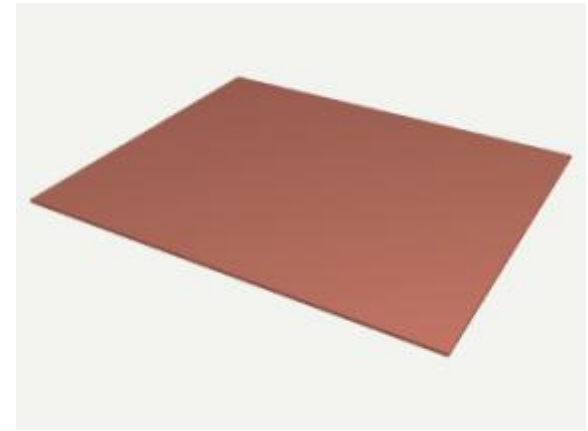
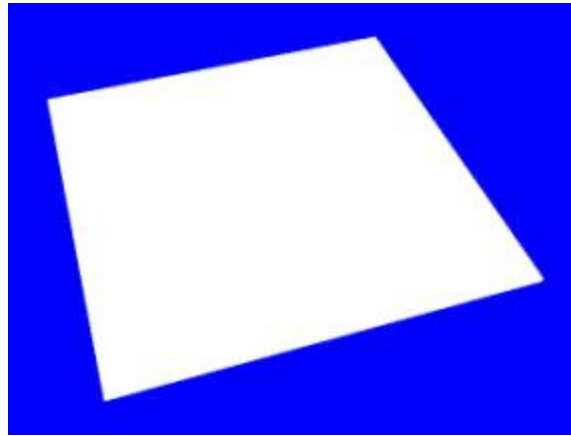
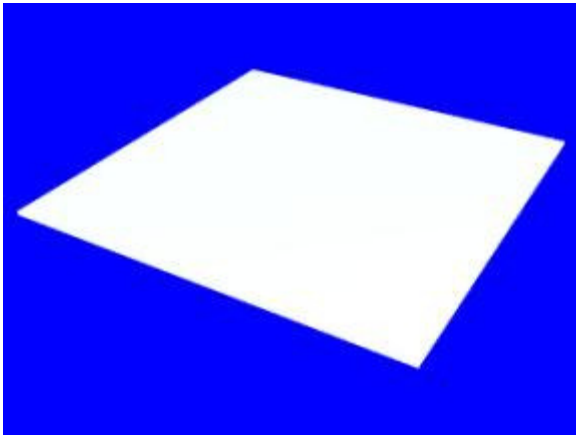
# The New ProDesktop Drawing



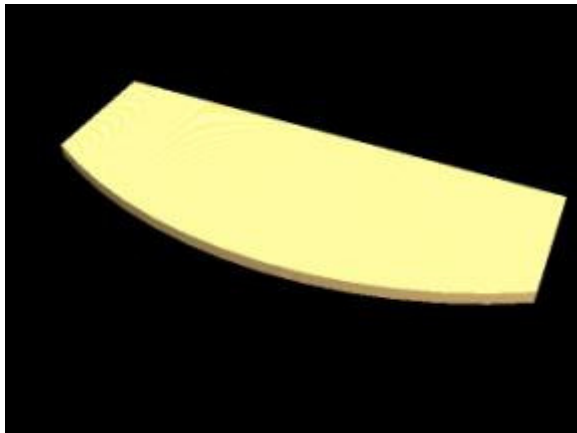
Previously I decided to shorten to top by 100mm so I have moved the indents for the legs and shorten the length on the top.



# Glass and Wooden Shelves

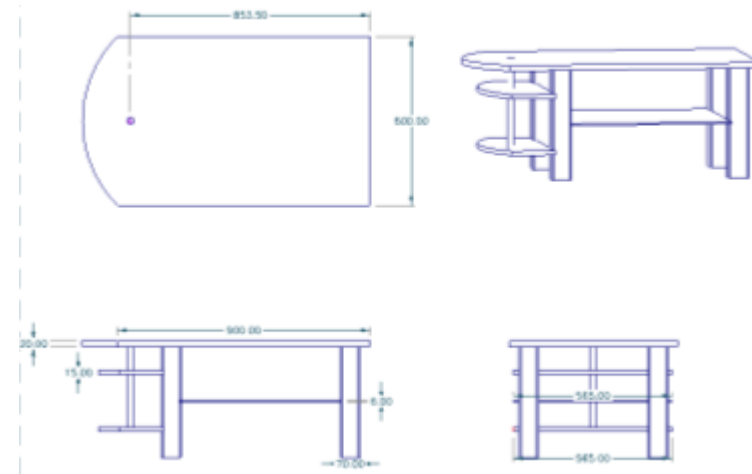
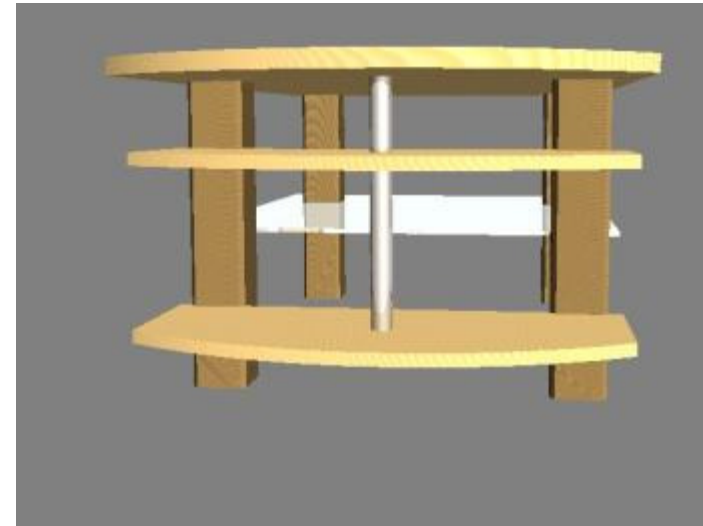


The glass shelf has been made smaller according to the other adjustments that I made and the wooden shelves haven't been changed at all.



# My Final Design

My final design will be:



# Parts List

A	B	C	D	E	F	G	H
PART NUMBER	PART NAME	NUMBER OF	CROSS SECTION	LENGTH IN METRES	MATERIAL	COST/METRE	TOTAL COST
1	Glass Shelf	1	565mm x 6mm	0.58	Glass		£35.00
2	Top side	1	600mm x 21mm	1.024	Iroko	£53.00	£31.92
3	Legs	4	70mm x 70mm	0.4	Mahogany		£0.00
4	Wooden Shleves	2	233mm x 15mm	0.57	Iroko	£53.00	£5.62
5	Pole	1	10mm in diameter	0.31	Brass		£0.00
6	Screw Thread	1	10mm in diameter	0.4	Stainless Steel		£ -
						<b>Total</b>	<b>£72.54</b>

I got these prices from Fitchett and Wollacott at <http://www.fitchetts.co.uk/PDFs/FW-Price-List10.pdf>

# Plan of Making Schedule

To start I will have to get a piece of iroko for the top and shelves and cut to size.



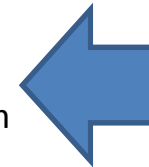
Then I will have to make up the legs because finding a piece of mahogany big enough isn't easy. I will glue up pieces of mahogany to create one final leg.



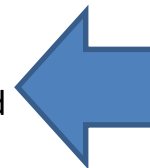
I will have to make supports to go in-between using mortise and tenon joints the legs to keep them from leaning inwards or outwards.



I will need to drill holes through the shelves to make room for the pole to help keep them in line.



When the legs are glued up, I will cut slits on two of them for the shelves.



The next step will be to glue the shelves in place and slide the tubing through and then glue the top on.



The last step will be to slip in the glass shelf into the slits and varnish the whole thing.

# Cleaning Up The Top

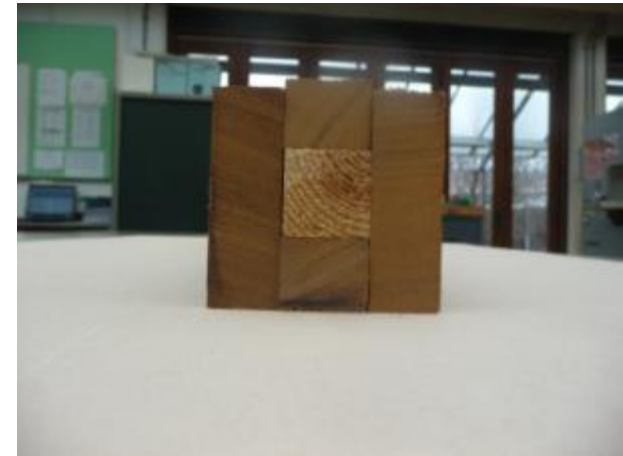
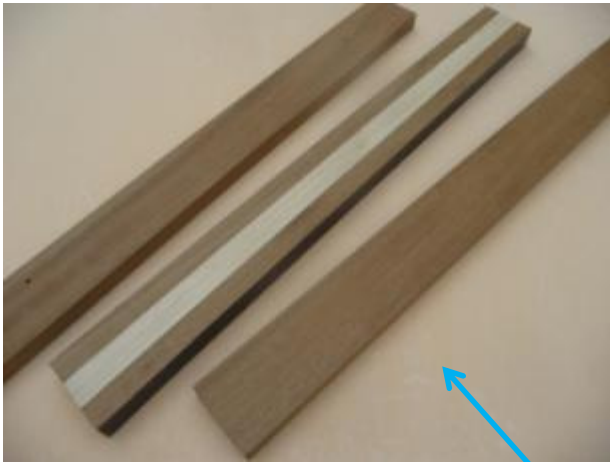


To clean up the table top I first had to hand plane it to get it nice and smooth and to get the top layer of varnish off.

Then to make it level and even smoother I used a belt sander, which also removed any marks or stains that were in the wood.



# Making the Legs



To make the legs of my table I had to glue 5 pieces of wood together to get the right size.

It started out as 4 pieces of hardwood for the outside which is what people would see when they looked at the table and 1 piece of soft wood in the middle. I then put glue on all the faces and clamped them together tightly.

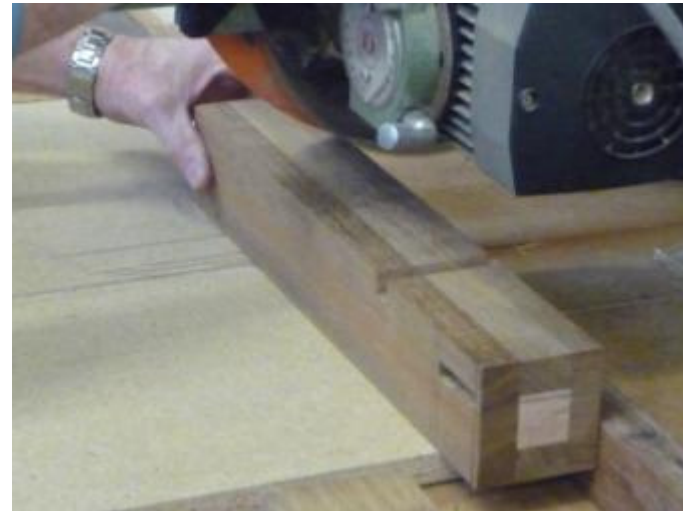


# Cutting the slits for the Legs

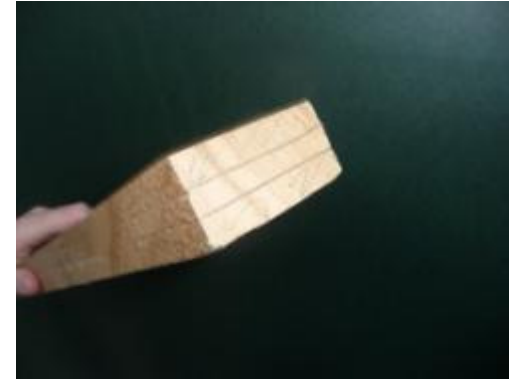


To ensure that the two wooden shelves stay in place and are supported, I needed to cut out two slits the right width for the shelves on the front of two of the legs. To do this the circular saw was used to cut out tiny slits at a time to eventually leave me with exactly the right sized slit with an even depth the whole way.

Then to finish the legs off, I used the router to round the edges of the legs and to give them a nice finish.



# Keeping the Legs straight



To keep the legs straight and stop them from leaning inwards or outwards I had to use supports in-between them. To start with I had to cut the mortises using a machine. Then I cut two in each leg. The next stage was to cut the tenons so they would fit tightly yet be able to be pulled out again. Then because the two tenons would meet in the legs I had to sand each one off at  $45^\circ$  so they would sit together nicely. Then the final stage was to see if they all fitted, which luckily they did, then I glued it all together and clamped the frame and that was the bottom frame of my table done. To make sure everything was square I used a tri-square to check all the corners and joints were straight.



# The Pole

The pole was meant to be stainless steel but this was changed to brass and instead of one long pole it is now cut into 2 pieces to fit in-between the shelves and a screw thread will be lowered into the poles and tightened at the bottom.



To make the support pole, I needed some help from the technician because it was a very delicate process. First I had to saw two pieces of brass tube to the right size to fit between the shelves. These were then polished. Then to attach the screw thread to the brass button that will sit inlaid to the table top we had to create a spigot on the screw thread that would fit into a hole in the brass button to keep it straight and in the centre. To do this the lathe was used then the two parts were silver soldered together and then polished for a nice finish.



# Gluing the Shelves and Top



To get the shelves to fit I had to use a little hand plane to reduce the thickness where the shelves slotted into the legs. Then when they fitted  $\frac{3}{4}$  of the way nicely I applied glue to the slots and the back of the shelves and then clamped them in.

The important thing to remember was that the shelves had to be even on both sides but also they had to line up to fit the screw thread straight.

# The Glass Shelf/ Varnishing



One major difference to the glass shelf is that instead of being pushed into slits the glass shelf fits on top of a frame glued to the legs of the table. The frame was put in by my teacher because I was running out of time. The glass will be clear safety glass and is held in place by mirror clips so it is restricted from moving. The final phase was varnishing the whole thing from top to bottom. The only thing I had to be careful of was being cautious around the brass pole.



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OFFENDING COMMAND: ~  
STACK: