

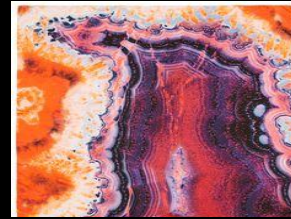
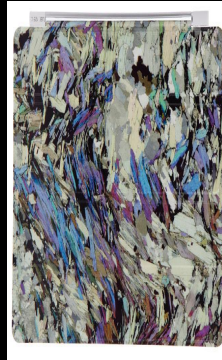


Richard Weston
Lighting project
By Hannah Watkins
Year 12

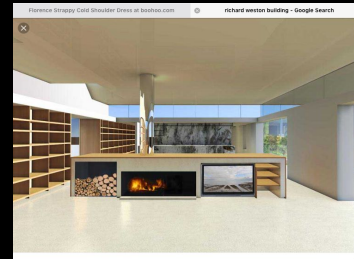


Richard Weston

Richard Weston was born in 1953 and is now a Professor. Richard Weston is an architect, landscape architect, author and is also the Chair of Architecture at Cardiff University. He is the Director of Richard Weston Studio Ltd and Earth Images Ltd. Richard Weston Studio creates high-resolution digital images and 3D models for innovative applications in architecture, urban spaces and gardens.



His interest in structural dramatic expression in a house he built for himself as part of FutureWorld in Milton Keynes. Richard Weston has not only designed houses but has designed and made scarfs and other clothing with his unique photos. His scarfs cost £50+ each.



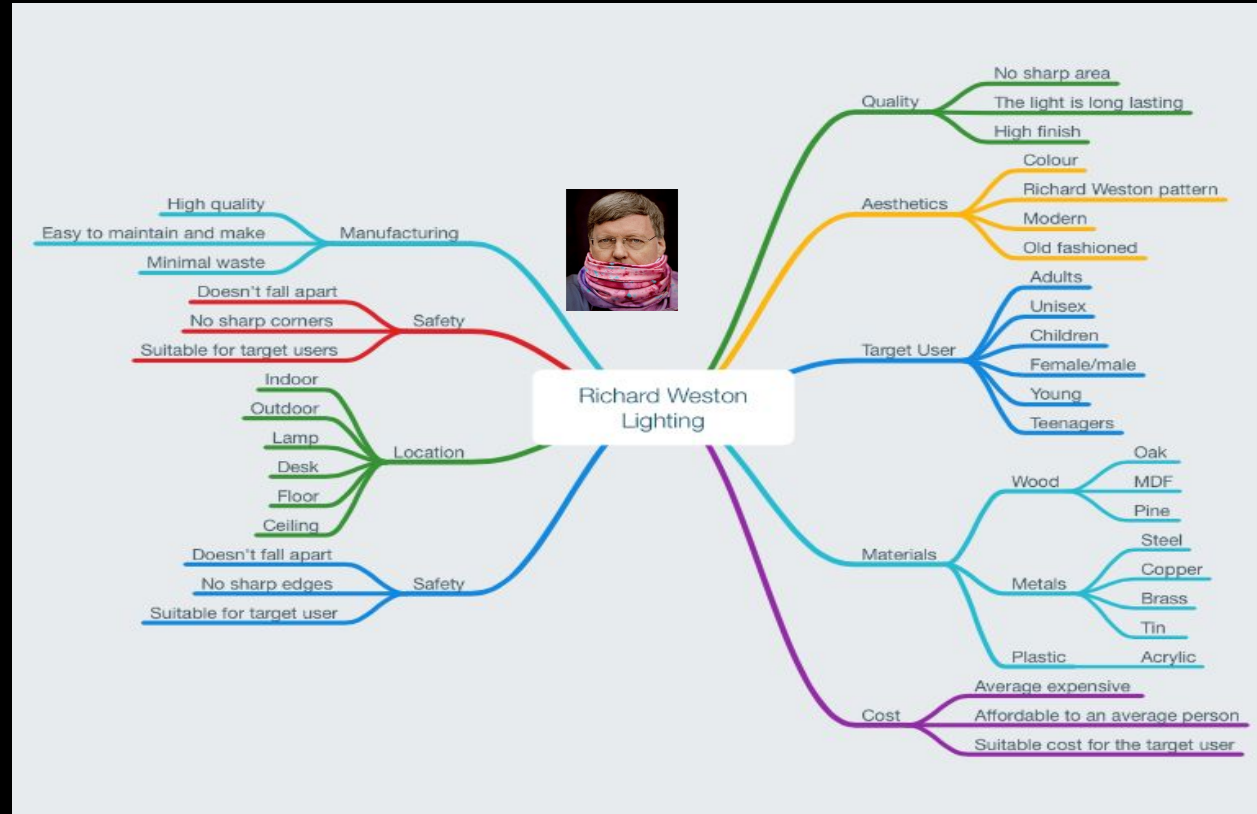
Brief and Specifications

Initial Brief- To design and create a light inspired by Richard Weston using his photos, colours and shapes.

Initial Specification

- It must be inspired by Richard Weston.
- It must be suitable for my target user.
- It must be the right size for a bedside table.
- It must light up a room.
- It must incorporate Richard Weston's photos.
- It must be safe to turn on and off.
- It must be easy to use.
- It must be made from a high standard.
- The product must be strong and fit the use in its target location.

Developed Brief- To design and create a light inspired by the work of Richard Weston. Using his work I will create a light using not only his photos but the colours and shapes of his buildings. His photos and work must be incorporated within my designs.



In order to help me with my designing for my lighting project, I have used secondary research to discover different styles of lighting. I have looked at both traditional and original lights. These photos will inspire me with my project. I have chosen the following photos because of the materials used, their shape and their style.

Lighting

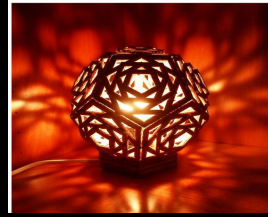
I really like all these lights. I will be looking at these lights when I am designing my light.



I love this light because its unique. I love that it gives a stain glass effect. I could use the idea with Richard Weston's photos.



<http://photocreations.ca>



I love that this light reflects on the wall. I could do this with Richard Weston's patterns



This light is unique. I love that it is original. I love that they have layered the wood.



I really like these lights because of their simplicity.

I really like these lights, they are simple but effective. I love how some are geometric and others aren't. They draw the eye to enjoy the light as a piece of art .



I love that the light reflects in the background. It looks pretty and effective.



Laser Cut Lights

These images are taken of Google Images and Pinterest. I have chosen these because I find all the patterns in the lights interesting. I will be using this moldboard as a inspiration page for when I'm designing my light

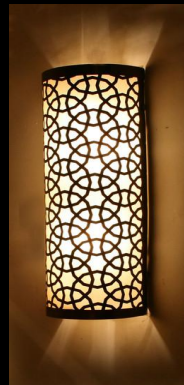


The following lights exhibit very simple patterns but they are so effective.

I love how you can see the light bulb. I could incorporate the idea of the visible light bulb in my design.



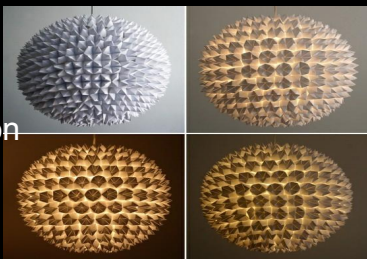
I love the pattern and shape of this light. I like how the light reflects out of the top and bottom of the light. It is eye catching.



I like the pattern in this light. I like how you can only see the light at the bottom.



These lights are all different colours. I love that patterns on the wood.



I really like that you can see the light from all angles. I love that the pattern is on all sides of this light.



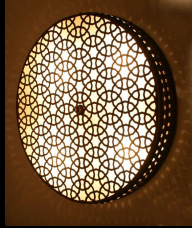
I love that this is different. I could do this using Richard Weston's patterns.



Location



This is where I am thinking of putting my light. I want my light to be placed on a desk.



Dining room light

These are practical lights because they are out of the way. These lights are located on the ceiling in most rooms such as the dining room in a house. These lights come in different sizes and styles. The lights are pretty and easy to use.

Desk Light

Desk lights are located on desk tops and table areas. Desk Lights are easy to store and can be put out of the way. Desk Lights are easy to work and come in many different styles.



Wall Light

Wall lights can be located anywhere in the house e.g. in a lounge. These lights are good because they can enhance the light to specific areas within that room.

Bedroom Lights

These are generally small soft lights creating an element of cosiness. Also they would be used when reading in bed.

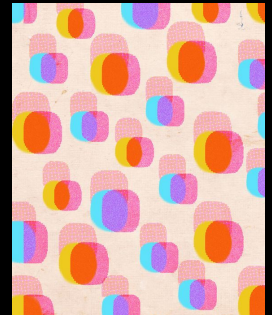
Outside Light

These lights are used outside of the house. They are normally located at both the front and the back. They light areas of darkness creating an element of safety for the homeowner when dark. They are situated out of the way, high up.



Target User

My target user is a woman in her late 20s. She lives on her own with her Cavachon puppy called Lucy in a flat near Cardiff Bay. She works in a hospital as a Nurse. She loves saving money for her yearly visit to Italy. She enjoys spending time with her family and friends and going out for a glass of wine once a week with work friends. She also likes taking photos of people and of nature. She doesn't like to spend a lot of money however, she loves to go shopping once a month. She shops at H&M and New Look. Her favourite thing to do is to watch films all day with a box of chocolates. Her favourite time of the year is Autumn and Autumn colours are her favourite. She loves when the nights get darker and can light the candles. Her flat is decorated with bright and original patterns from different artists and photographers. She also loves the use of wood within her furnishings.



Manufacturing

This light would be made on the laser cutter. This pattern would have to be lasers as they are complicating. The wood would be also cut on the laser cutter at it would be difficult to do this style with a saw.

Location

This light can be placed anywhere that is small. This light can be placed in a bedroom or even a lounge to light up the room. However this light is small so it would need to be placed somewhere small.

Function

This light is used to light a room inside the house. It is used for directorate on as well as giving light in a room.

Product Analysis



Target User

This light would be targeted at older people. For example this light would be aimed at adults. It would be targeted at people who are into wood and unique patterns.

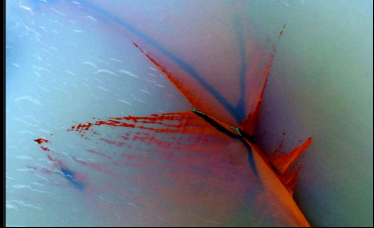
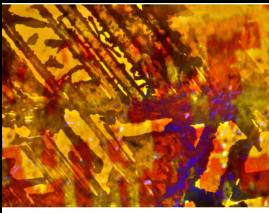
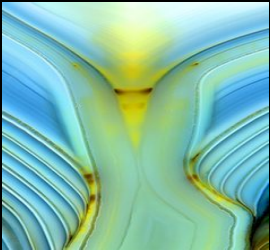
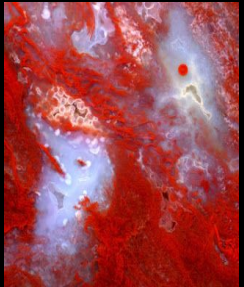
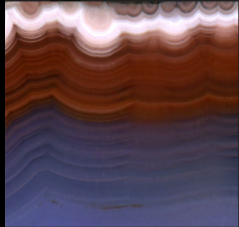
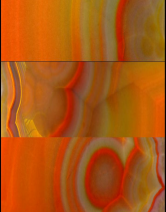
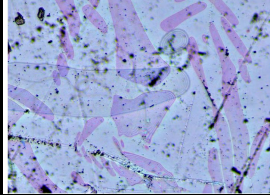
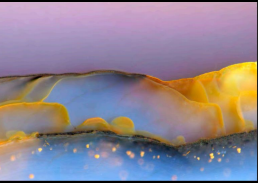
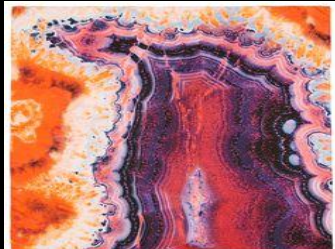
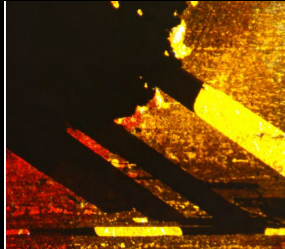
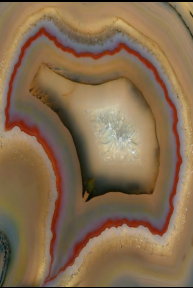
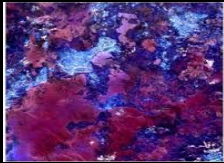
Cost

The light would not cost loads. It would cost around £40-£60. This would be suitable for people who don't want to spend a lot for a light.

Materials

This light is made by mostly wood. The stand is made of wood and the frame of the light is made of wood. Inside the light these a layer of plastic around the light.

Richard Weston Patterns



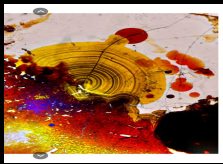
Hierarchy of Criteria	Initial	Detailed	Testing in design	Test in manufacturing	Testing in Evaluation
Functions	My design must be able to light up a room. It must be able to be switched on and off.	My design must be inspired by Richard Weston. It must be able to light up a room and must be easy to switch on and off when in use.	To test my design out I will be making 3D models of my design. This will help me to figure out sizes and the look of my light.	To test my manufacturing I will be creating little models. By creating little models of different ways I can build my light I will find out which one is best and which one will suit my light more.	To test the evaluation I will be placing my light in a location to test the brightness in the room when the light is switched on.
Aesthetics	The light must be suitable for my target user. It must look aesthetically pleasing to the eye.	The light must be aesthetically pleasing to the target user's eye. It must look and be inspired by the work of Richard Weston.	To test the look of my design I will draw my design out many times. I will also check my design out with my teacher and friends to see what they think about my design.	When testing my light i will be making sure that everything works. I will be drawing out my design many times when testing the look of my light. I will be testing the colour, materials and joints throughout the process of me making my light.	In order to test my aesthetics I will be taking photos during the process. To ensure I am on the right path I will be asking the target audience what they think. Also I will be asking my teachers there opinion.
Sustainability	My light must be sustainable and recycled materials.	My Richard Weston light must be sustainable and must be made using recycled materials from school.	To test the sustainability of my design I will be testing out different materials to see which one works the best for my light.	To test the sustainability of my manufacturing I will be looking at the different manufacturing process.	To test my light for it being sustainable in evaluation I will look at the materials I've used.

Target User	My light must look and fit the needs of my Target User	My light must look and fit the needs of my Target User which will be a 20 year old women . The light must be inspired by Richard Weston.	To test my design suits my target user I will be asking several people of the age group what they think about my design and how I can improve it.	To test my light fits the needs of my target user I will be making a model of my design and I will be checking what my target audience think about it.	To test my light in evaluation I will ask people who are at the same age of my target user to see what they think about my light.
Ergonomic	My light must be easy to use and clean.	My light must be easy to switch on and off and must be easy to clean when in need.	To test the ergonomic of my design I will be testing out different ways I could make my light.	To test the ergonomic of my manufacturing I will make sure that my light is well put together as well as being easy.	To test the ergonomic in evaluation I will use my light on a desk to see if it works well.
Size	My light must be able to fit into the location.	My light must be able to fit well into my location which will be for a desk/ bedside table	To ensure my light design is the correct size I will be creating a template. This will help me to know exactly the scale of my light.	I will ensure that my light is well put together and the sizing is correct by creating a template and model. This will help me to know what size and how it will fit well in my location.	To test my light for the size after I've made it I will place it into a desk to see the size.
Materials	My light must be made be a fine, high quality material that will last long.	My light must be made to last long by using high quality materials as well as being affordable for my target user.	To ensure my light is at a high standard I will be creating little models using materials I think will suit my target user needs as well as being long lasting.	To test out the materials for manufacturing I will be asking my teachers their opinions on the materials as well as asking for their advice.	

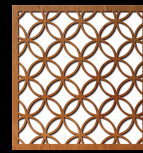
Safety	The light must be safe to use.	The light must be safe to use. To ensure my light is safe to use I will be carefully checking it throughout the process of making my light.	To test the safety of my light i will be creating mini models. I will be testing them throughout the making stage of my light.	To test the safety in manufacturing I will be doing quality checks throughout the process of me making my light.	To test my safety of my light in evaluation I will be looking at my light and see if it would be safe for use.
Location	My light must be suitable to be placed in the location.	My light must be suitable for my target user's location. It must be suitable for the place it will be kept.	I will be creating a model and I will be testing out the location and size. By doing this i know the sizing of my light and where's best it can be placed.	To test the manufacture for my location I will be creating a model full size to see the suitable size I should have my light.	In evaluation to test the location I will be placing my light on a desk.
Quality and finish	My light must be of a high quality and finish.	My light must be of a high standard and quality. It must be of a high quality finish.	To test the quality and finish I will show other people my design to see what they think about it .	To test the manufacturing for the quality and finish of my light I will be doing testers to see which one is suitable for my design.	In evaluation to test the quality and finish I would look at my light and show people and see what they think about it.
Manufacturing process	The light must go through the manufacturing process.	My light must be easier to make and can be able to go through the manufacturing process.	To test the design of the manufacturing process I will be experimenting with different models and processes.	To test the manufacturing for the manufacturing process I will be creating a model.	

6 Ideas

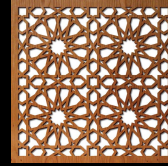
This light would be suitable in a room with high ceiling. However, it would not be suitable hanging from a low ceiling as it would hang too low.



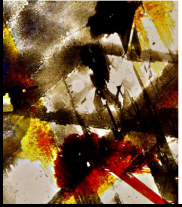
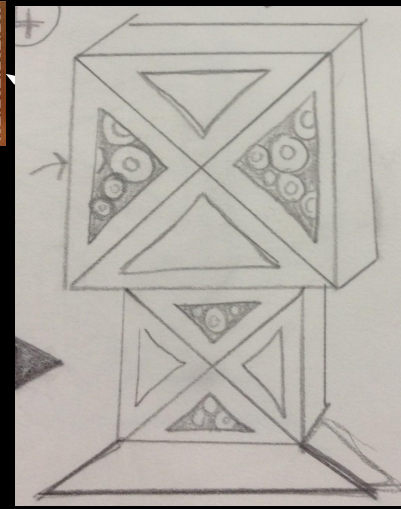
This light would be created using 2d Designs.



I would use the laser cutter to cut out my pattern as well as the spaces between them.



A wooden box made from oak. This will meet my specs as my target user loves wood.



My light must suit my specifications.

From all the different patterns of Richard's work to choose from, I have decided to use the red and yellow patterns.

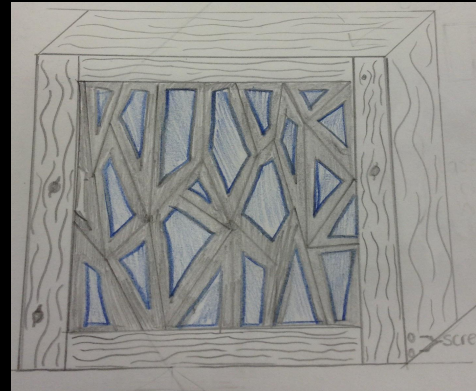


It must be easy to function and work.

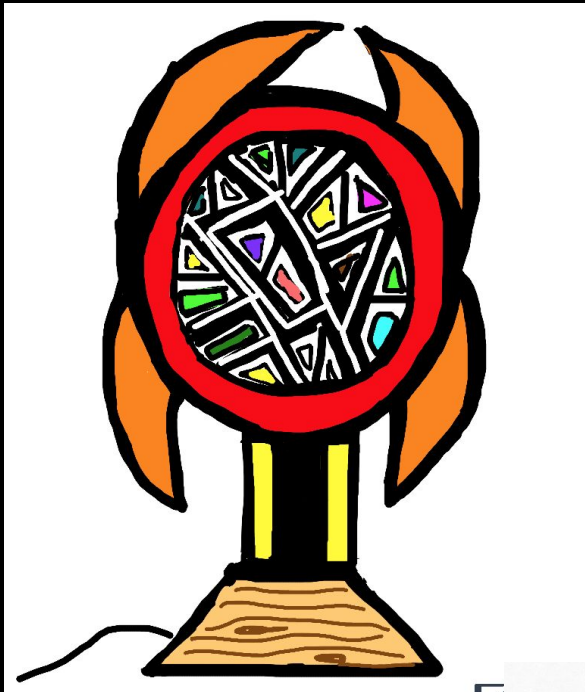


Made from wood bent into a circular shaped hanging light. By both sides of the wood would be an acrylic part that will have a print of Richard Weston's patterns. This would meet be aesthetics part of my specs.

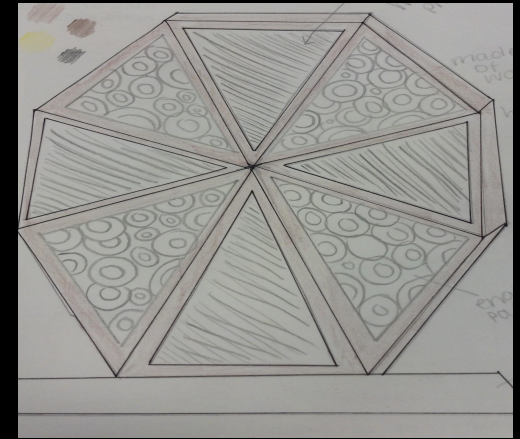
This light would be placed on something small because of it's size. However, this would not suit being placed in a large room because the would be ineffective.



This light would be made from solid wood. It would be suitable for a desk but the size may be a problem. Richard Weston's patterns will be placed around the square as well as having laser cut patterns around the square.



This light will be controlled by a switch that will be able to be switched on and off. The triangle will be made from acrylic and have a laser cut pattern inside. The Octagon will be made from wood and have Richard Weston's patterns around it.



Laser cut patterns lasers into 4 triangles of my light.

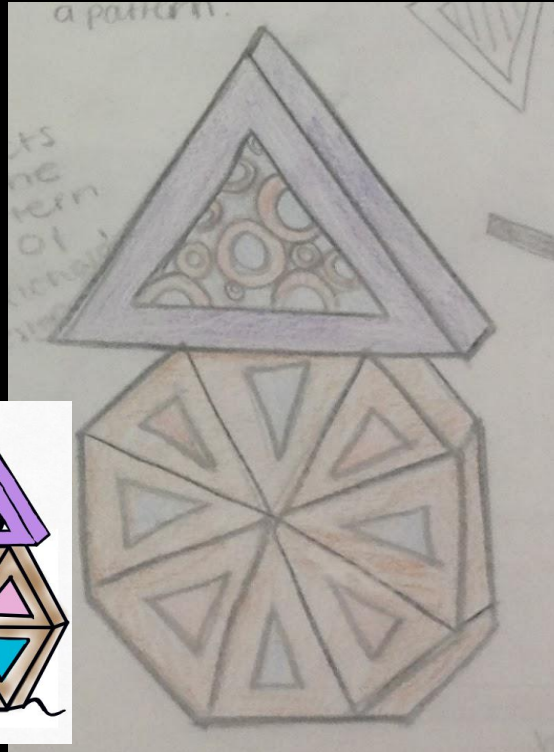
This will be hand cut and shaped by me.

This would be suitable as being a desk light or table light. As they sizing must be not too small.

This light will have 4 different patterns of his work.

This would suit my target user as its simple.

I will be creating a pattern on 2d Designs and i will be using the laser cutter to cut onto wood.

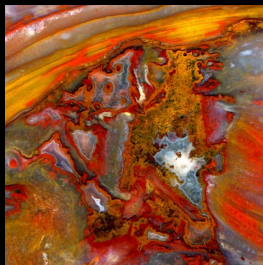


This will be made from all acrylic. It will be placed onto a wooden stand that will sit on a desk. Richard Weston's patterns will be placed inside the circle. There will be a light bulb inside that will be able to be switched on and off.

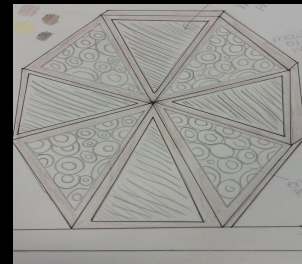
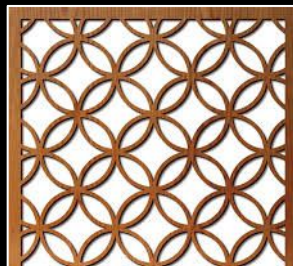
Model of my design



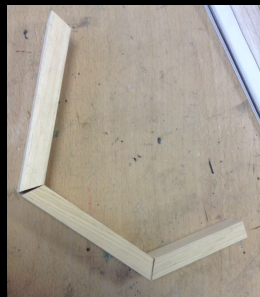
This is my model of my light. I have created this out of wood. I have used pencil to outline what I will be doing on my light. I will be using the laser cut to cut out a pattern onto my light. I will be putting Richard Weston's pattern onto the other sides of my light. My light will be made out of LEDs around the side and will be suitable for a desk.



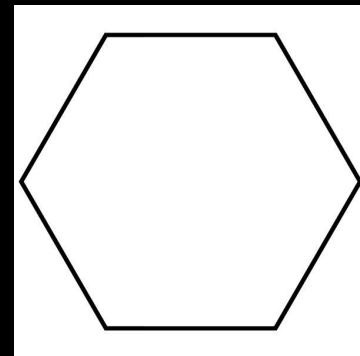
This is a design I would like to have on my light. I would like to create my own design but have the same idea of the circles and having some circles cut out and some engraved by the laser cutter.



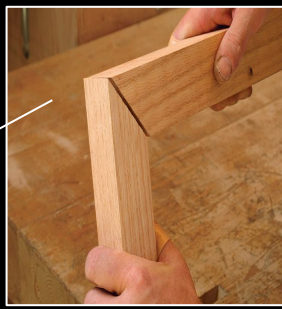
This is a model of what the sides of my hexagon will look like. I did this to check to see if the angles were correct before I cut my material out



I will be changing my shape from an Octagon to a Hexagon because it will be easier to create. I think it would be easier to calculate the angle of each side of a hexagon. I will be placing Richards patterns on the side of my light too.



Joints

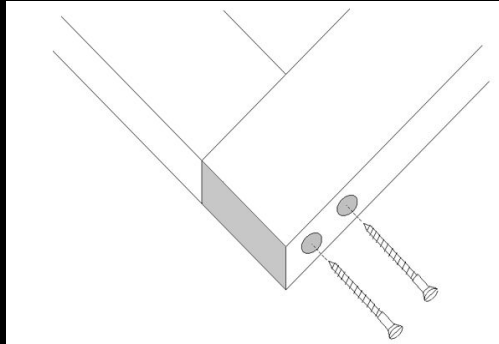


For the sides of my hexagon I could use screws to attach it all together. As I want my light to be clean and look smooth I don't think screwing my sides together would look nice and suit the light.

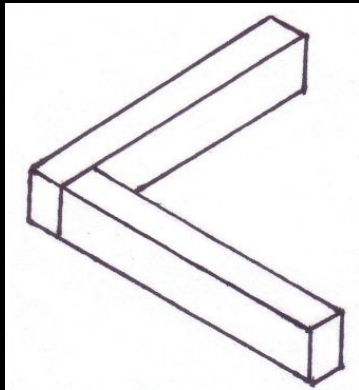
This joint will be the best for my light as it is clean and easy to do for my sides. The joint looks professional and clean



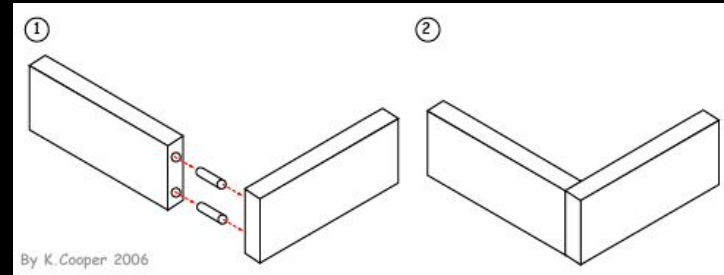
For my light I can use a Miter joint. I would use a Butt Joint but as my light is a hexagon it would be difficult for the angles of my sides as well as it would be hard to join together.



I could do this joint in the laser. I could draw my design on CAD then send it to the laser to be printed.



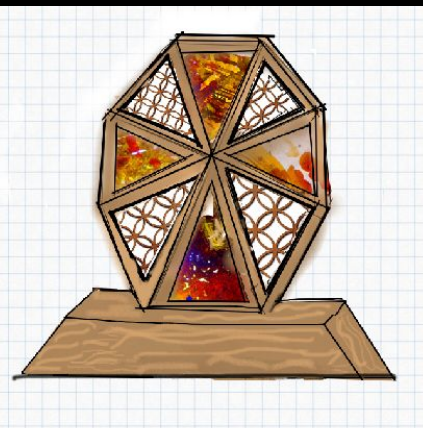
Some joint ideas I could use to attach the sides of my light together. I am thinking of doing the Miter joint as I can attach my sides of my hexagon with PVA glue and as my angles are different for a Butt joint it would be easier to attach and do.



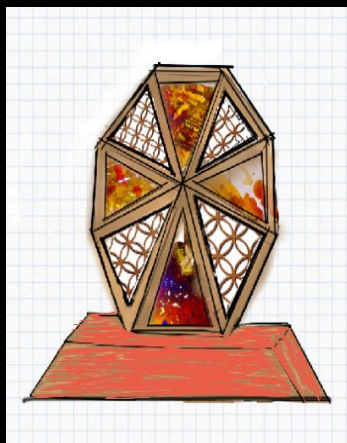
I could use dowels to attach the sides of my hexagon sides together. To do this I would have to mark out each side and drill holes for the dowels. However, as my angle is a hexagon angle it would be difficult to do

Development

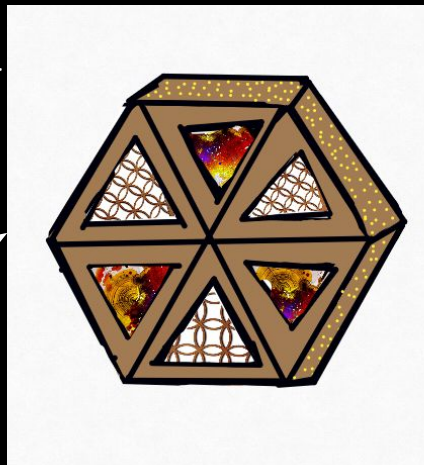
This is my original design. I have then developed my design further. This light will be cut on the laser cutter and have 4 different Richard Westron patterns around the laser cut patterns.



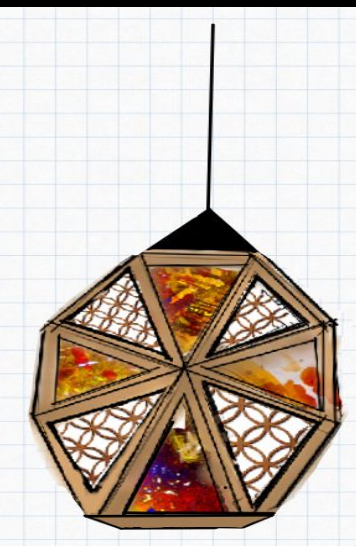
I've change the stand of my light from plain solid wood to red venner.



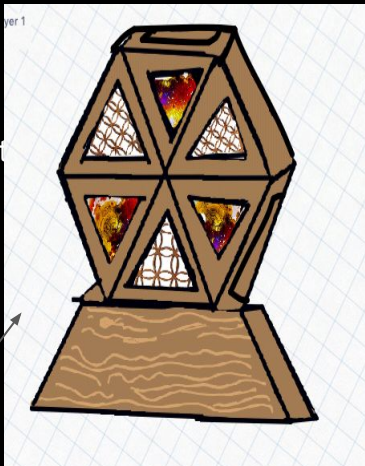
Ive changed the lighting for this light. Instead of having LED strip lights I have changed it to single LED which will be placed on the sides of the Hexagon.



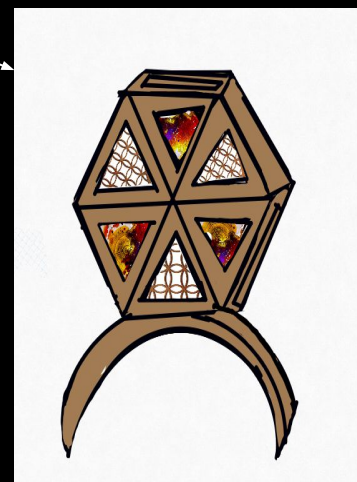
I have changed this from a desk light to a light that can hang from a ceiling. However, my target user would like a light that would be suitable for a desk.



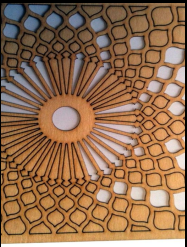
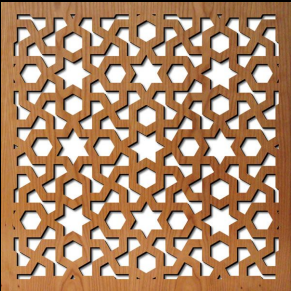
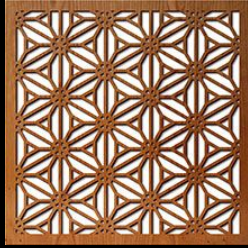
Changed from an Octogon to a Hexagon
I have then change the shape of my light to a Hexagon instead of an Octogon because I think it would be better to measure and the school already have a jig that will help me to cut the sides of my light.



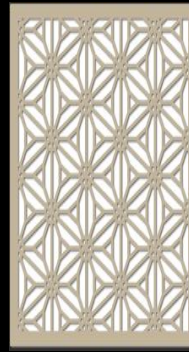
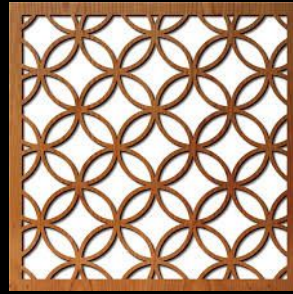
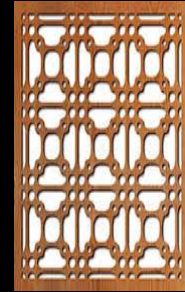
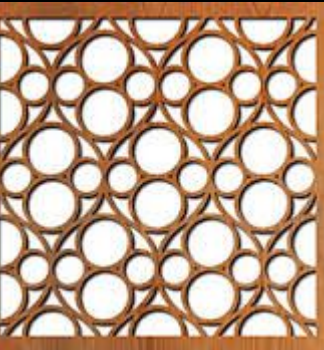
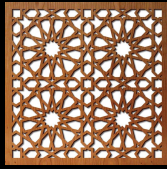
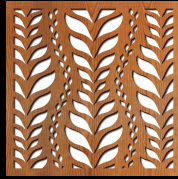
I have changed the base of my light. This will be changed into flexibly which will be bent into this position using a former. This would work well for my target user.



Laser Cut patterns



I've collected a lot of photos of laser cut patterns I could do for my light. I created my own pattern inspired by many of these patterns.



It is important to change the settings when using the laser cutter for the materials. You also need to change the lines to the different colours according to it being cut or engraved. Red is to cut and black is to engrave.



Component	Materials	Advantages	Disadvantage	Cost	Workability	Score	Conclusion
Front (hexagon)	Laser Ply	<ul style="list-style-type: none"> - Cheap to buy and use - Easy to use - Can be lasered 	Can snap easily		Laser Ply is suitable as it is a cheap material. It can be bought in big sizes	9 good material to use for the front of my hexagon	Laser Ply
	Acrylic	<ul style="list-style-type: none"> - available - Can be molded 	<ul style="list-style-type: none"> -can split -easy to snap 		Acrylic can be bought in big sizes.	5 can be difficult to use and would not work in my design.	Oak
	Pine	Available Looks appealing Inexpensive	Can be split if not careful		Pine is cheap but not hugely strong.	7 Pine can split easily and is not suitable for my light.	
	Oak	Available Inexpensive	Solid Can split if not careful		Oak is suitable as a base as it is strong and easy to shaped.	8 solid wood and can be used as a stand/base.	
Base	Mahogany	Looks good Can be shaped	Expensive		Mahogany is an expensive material that can be shaped into anything.	6 Can be used for looks but can be expensive.	
	Acrylic	Easy to mold when heated	-easy to snap		Acrylic is a cheap material that can be bought in large sizes.	4 Acrylic would not be suitable for a abse as it can snap easily.	

Light Sources

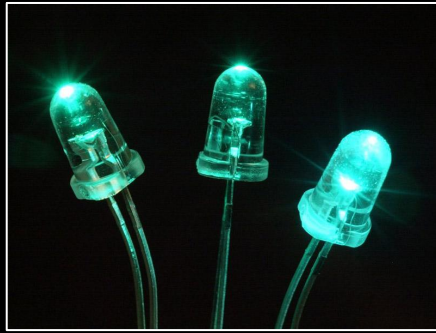
A bulb is use for practically most lights. They are easy to use.

Pro+

- + These bulbs are Inexpensive
- + Can be Bright
- + Easy to use and fit onto a light

Con-

- Can run out after a certain about of time
- Breakable as they are made out of glass and can be very dangerous when broken.



LED lights are used for many things such as toys and lights.
LED Lights (Normal)

Pro+

- + These LED lights are Inexpensive
- + Can be easy to use and easy to be fitted onto a light.
- + These LED lights are simple to fit and turn on and off

Con-

- Can be not very bright
- Have to be replaced when the LED lights are broken or run out.

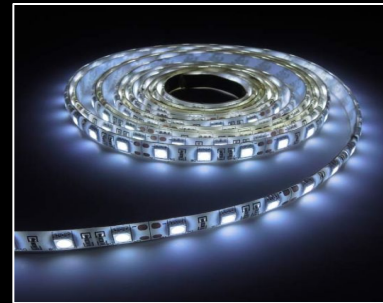
Strip LED light are used for many light up toys and lights.

Pros+

- + Can be used to light up a room
- + Easy to use
- + Used well for smallish lights

Cons-

- Only a limited length of lights
- Once broken cannot fix
- Have to replace the whole light when the lights run out.



Colour changing LED lights are used in many product such as lights and toy cars.
Colour changing LED lights

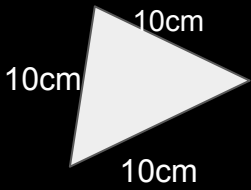
Pro+

- + Can change different colours
- + Inexpensive and can be found in many shops
- + Easy to use and fit
- + Can be bought with dull or bright lights

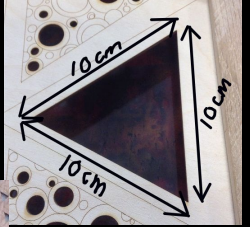
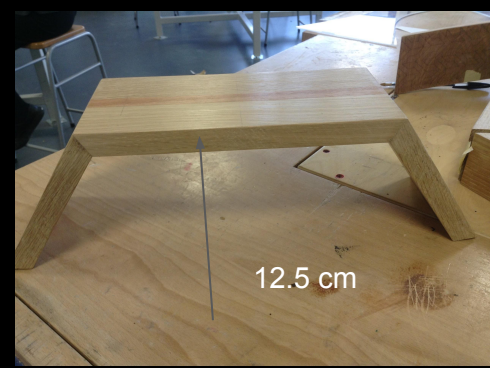
Con-

- Can break easily by the wires or the bulbs of the LED
- Need to be replaced when broken
- Can not light up a room

Measurements



For the base the sides are 14.7cm each and the top part is 24 cm

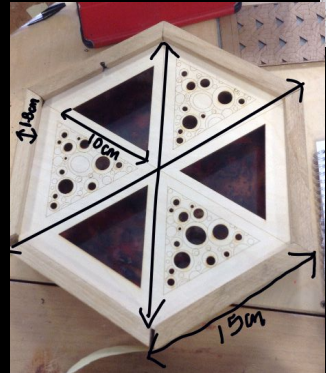
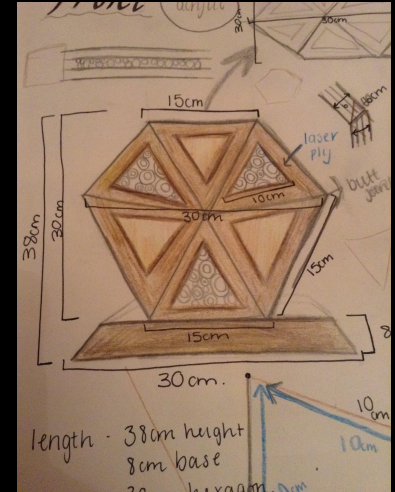
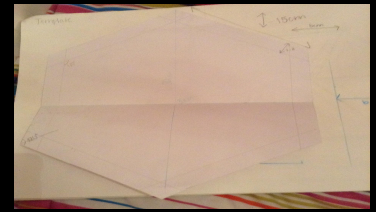


A template of my hexagon that will be fitted inside my hexagon frame.

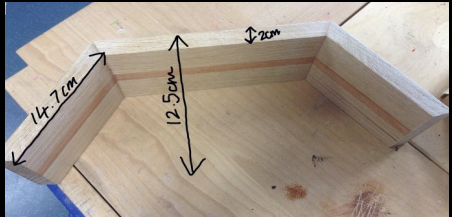
Straight up the hexagon is 27.5 cm

The base is made from oak. To make this you would need to cut two 14.7 cm piece of wood on the same angle as the hexagon.

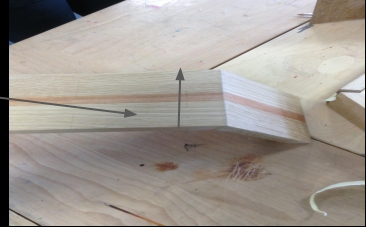
The height of the base is 12.5 cm



The size of the hexagon is 30 cm across with a 1.8 cm border of wood.

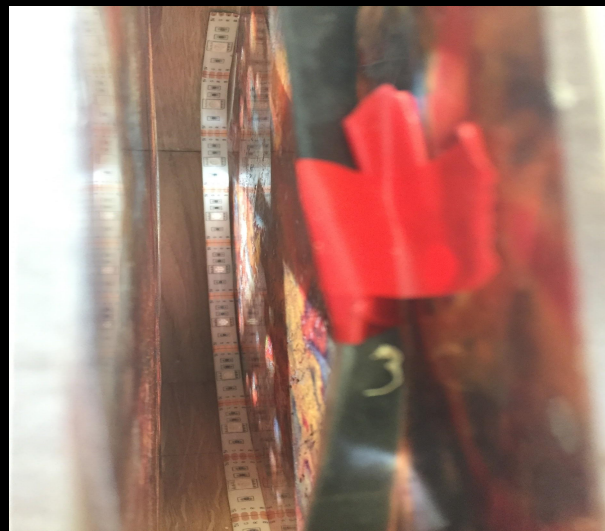
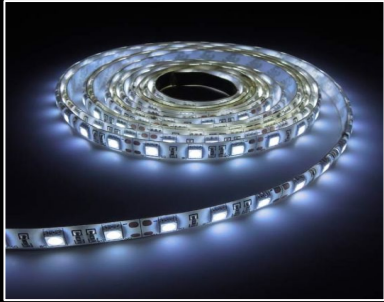


The width of my base is 10.8 cm this is so my hexagon shape light can fit on top



This drawing shows you exactly the shape for most of my light

The lighting I have chosen



A picture of the LED strip in my light. I have taped the start of the light securely on the side of my hexagon. This allows the controller to work when being used. I have stuck my strip light around the side of my hexagon.

I have chosen to use a LED strip light because I think it will work well with my design. By having a strip light this will reflect through the Richard Weston pattern be seen as the light will be around the side of my hexagon. I will be sticking my LED strip light on the sides on my hexagon using electrical tape and double sided sticky tape. This type of light will allow me to place lighting all on the edges of the Hexagon shape. The style of my light required me to take into consideration where I was putting the end of the light as my light is controlled with a controller to change the light colour and style.



Construction details

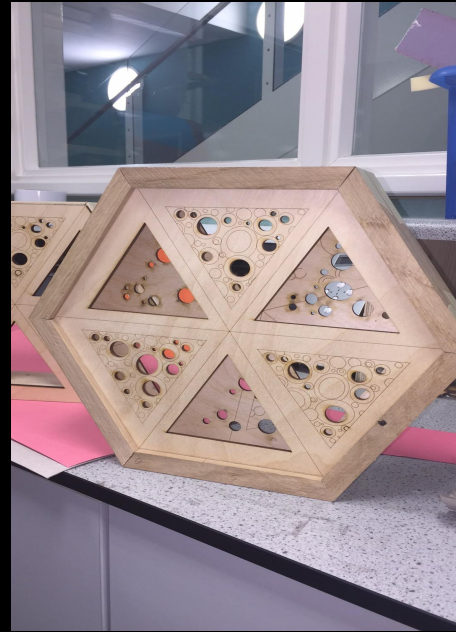


I have made slots into my slides of the wood for my front and back of my hexagon. This will be easy to slot in and out.

To attach both on my hexagon shapes I have router routed my wood so that both my sides can fit exactly into the slots. I will then cut these wood at 15cm on the bandsaw with my jig at the angle for my hexagon sides.



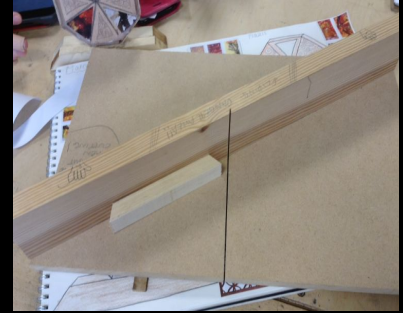
This picture shows how my sides on the hexagon will fit in. I will then cut out 6 pieces of wood for the framing of my hexagon.



I have cut the frame sides of my hexagon and taped them all together to ensure they all fit before putting my light in and fixing it all together.

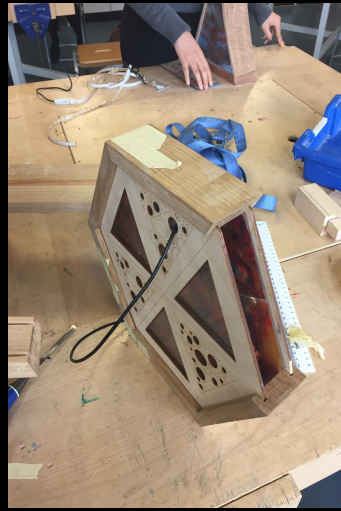
I have made a jig for my hexagon shape. This helps me to know exactly the right angle I should cut it. Also its easier to then cut my wood pieces as it already has the angle ready to cut your wood on.

For my pattern to be cut on the laser cutter i need to change the colour for it to either be cut or engraved. I had to change my pattern to black for engrave and red to cut my shapes.



I have made a model using scrap wood and the jig. I have done this to make sure the jig is correct before doing my real one.

In this picture. I am drilling a hole through my acrylic. I have done this so that the lead of my light can come through the hole and can be plugged in. I am using a hand drill for this and a G clamp to secure my wood to the table so that it doesn't move when drilling. I have placed a scrap piece of wood underneath the G clamp so that it doesn't make a mark when drilling.



I have taped around the sides to ensure they are all secure when drying. I have placed my lead to my light through one of the holes on my pattern. This will then be put into a plug. I will then screw a screw through my base and into the hexagon.



Picture of my sides getting cut on the bandsaw. I have used a jig for accuracy and clean cuts for my sides.

I have glued my frame sides on my hexagon with PVA glue. I have used glue because it will be absorbed by the pores. To ensure my pieces are all stuck I have taped them all together. I have placed my picture into the one side of my hexagon.



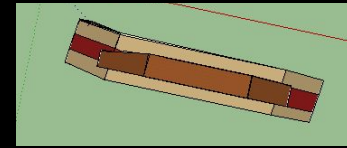
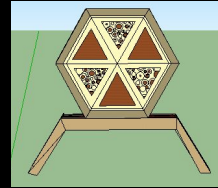
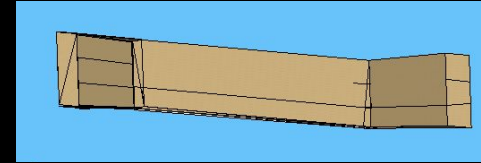
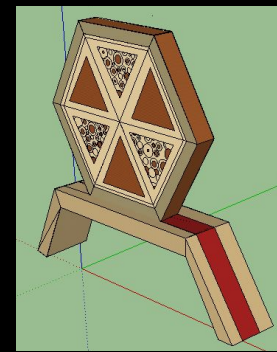
I have drilled a hole through one of the circles in my pattern. This will allow my light lead to come through and wrap around my hexagon.



I have waited to the last minute to place my last side piece onto my hexagon because i wanted to make sure my lighting was all perfect and taped before i glued my last side together to screw onto my base.

Google Sketchup

This is a side view of my hexagon shape without my base. I have drawn the sides as well so that I know what it would look like. I have filled my drawing with the materials I have used.



I have drawn the base with my hexagon onto to show the shape of my base. I will be using wide wood for my base with a strip of a different wood threw the middle of the wood base.

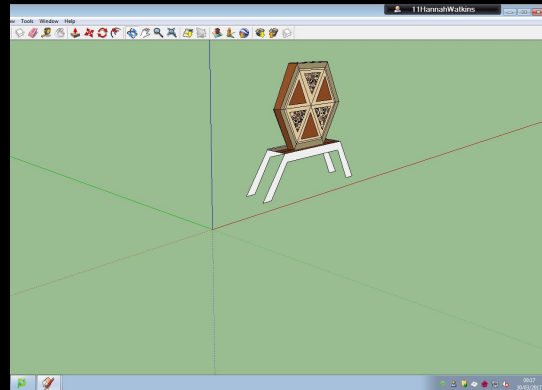
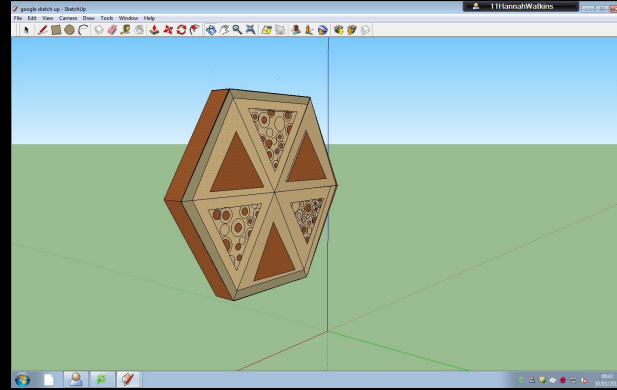
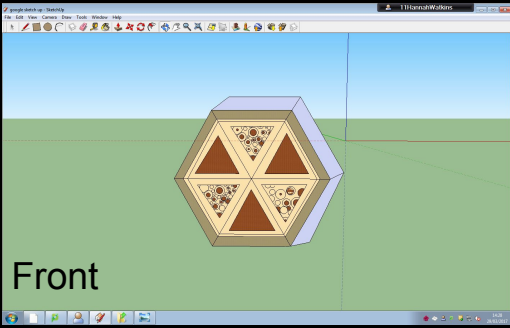
This is the final drawing on my light using google sketchup. This is what it looks like from the front, back,side,bottom and from a bird's eye view. This shows exactly what my light will look like.

Front

I have drawn my final design on Google SketchUp. This allowed me to correctly draw my light from all angles.

Side

This is a side view of my light. I have drawn all the details of my light. I have added in my picture in the triangles. By drawing my light from the side it will help me to know what it will look like before I start making it.

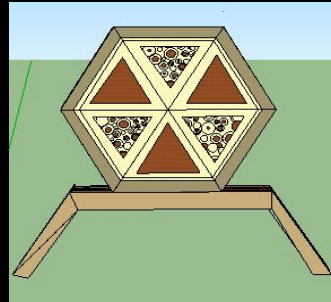
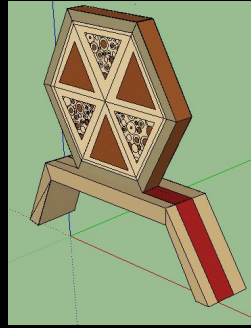


Final drawing of my light



Drawn on Concepts this is the final drawing of my light. I have drawn a background in the back of the drawing. This will help me to know what it looks like on a table. This light will be placed on a desk.

Drawn on Google sketchup. This will be what my light looks like. I will be putting a background in the back.

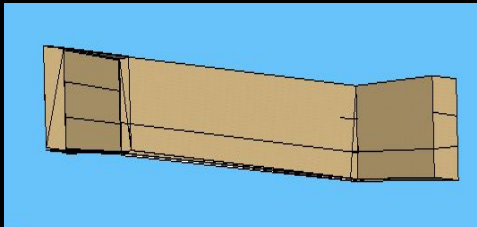
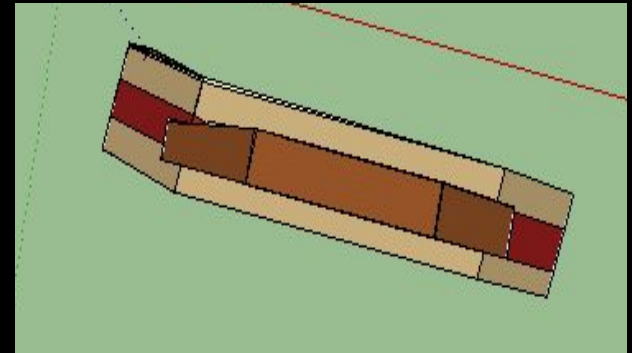
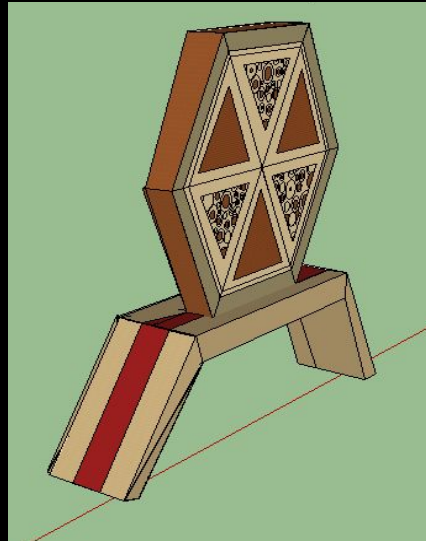
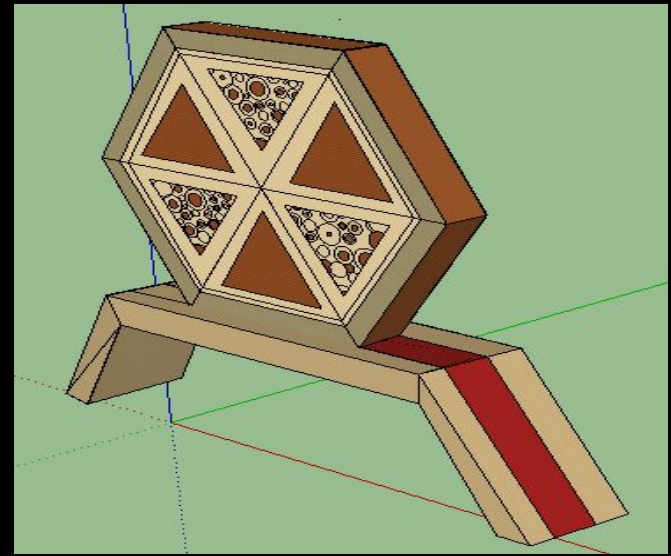
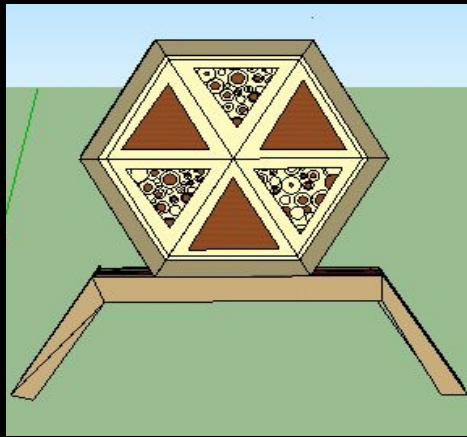


The front and back view of my light. This light will have to be plugged in and near a plug socket.

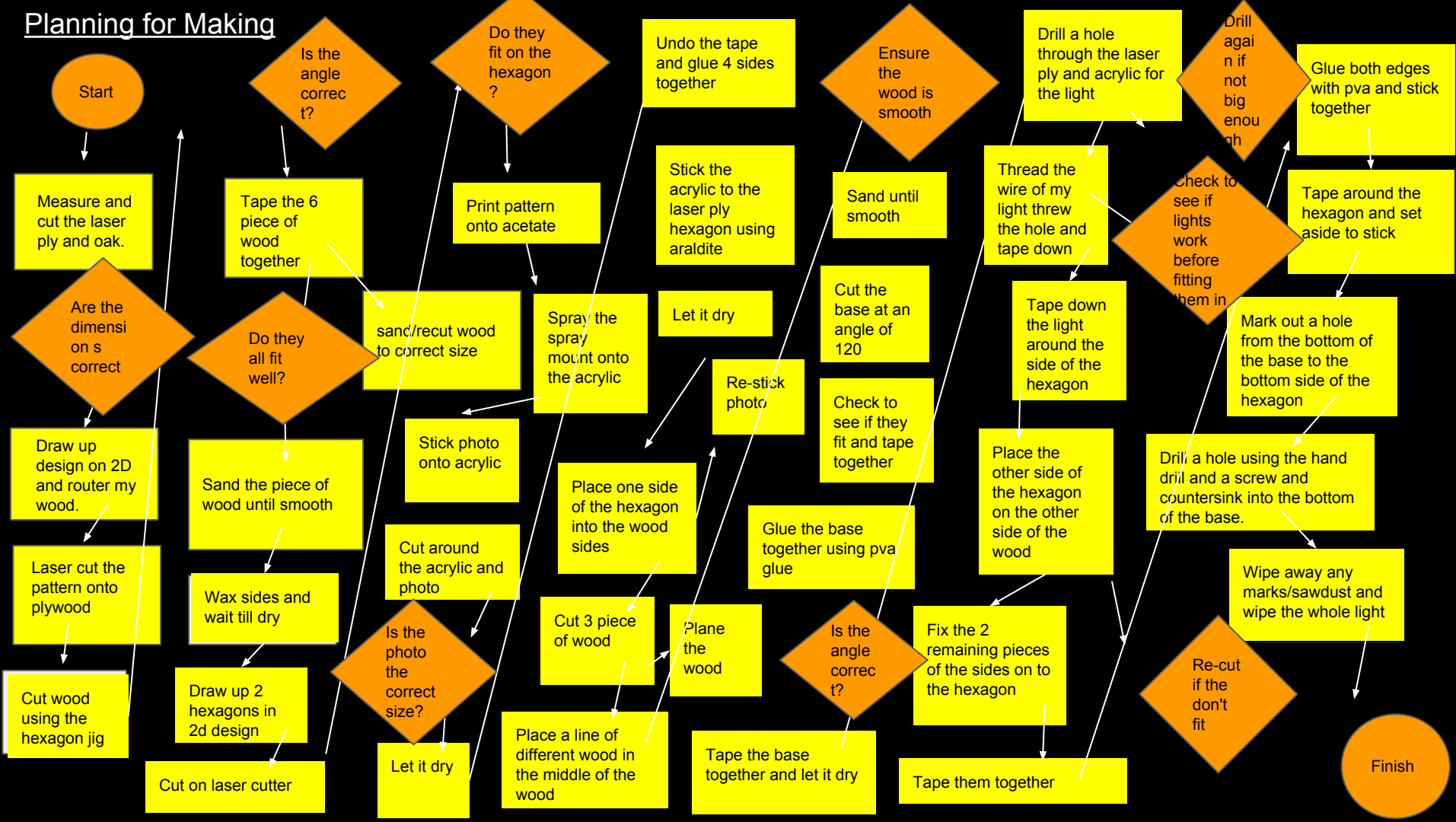


I have photoshopped a background in the back of my drawing. This will help me to know it will look like in the area.

Final Design

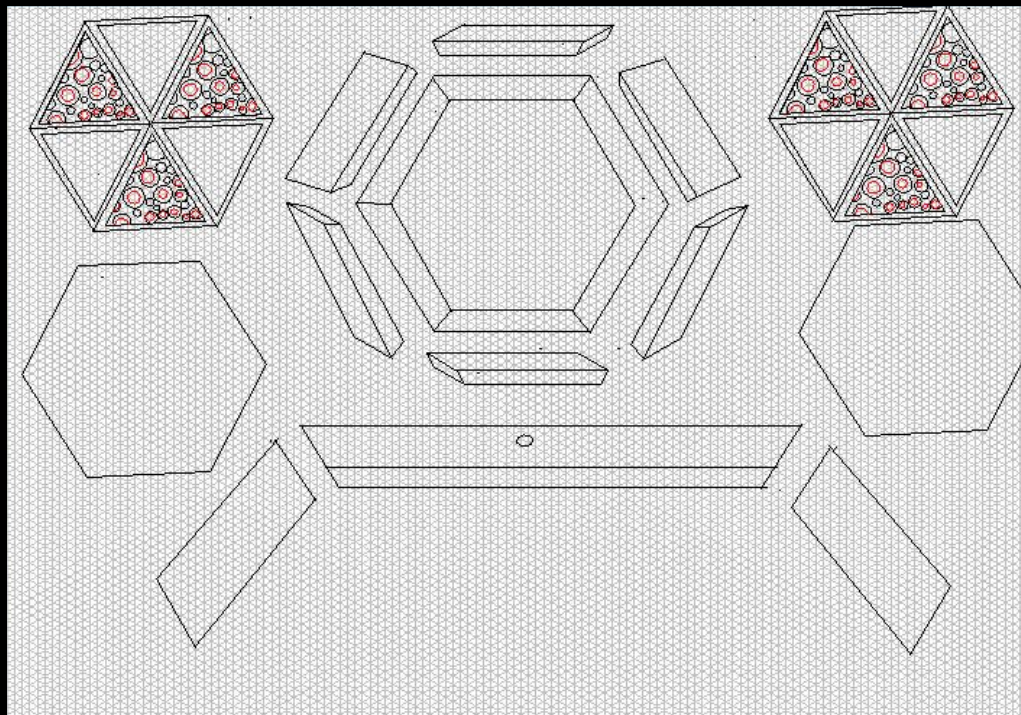
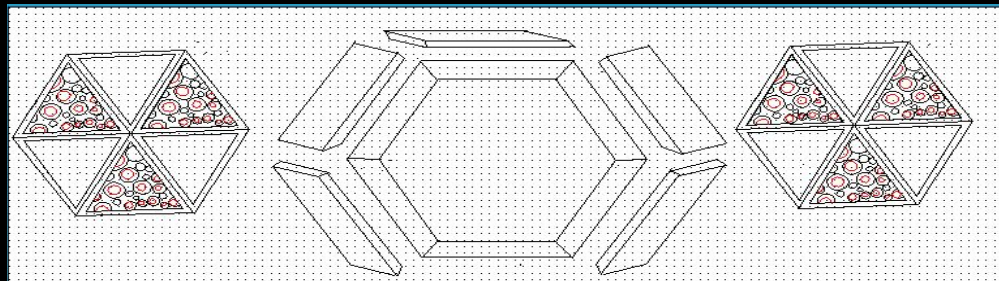
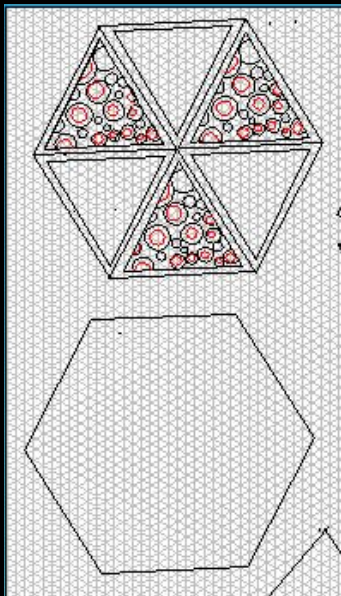


Planning for Making

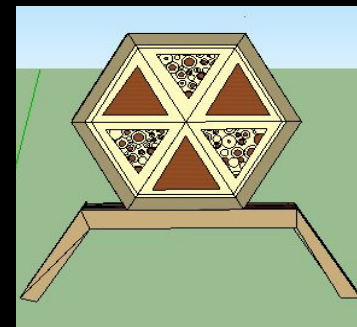


Exploded drawing

















The patterns in the hexagon will slot into the hexagon frame. There will be an acrylic hexagon with the pattern of Richard Weston glued using Spray Mount.





















This is my exploded drawing of my light. I have drawn this on 2D design. I have drawn this in detail. This will be helpful as it shows you how each material is put together. It shows you the joint and how each piece will fit in to create.











Gantt Chart

Task	Estimated time and actual time	Week 1	Week 2	Week 3	Week 4	Week 5	Week 6	Comments
Measure and cut the laser ply and oak.	Estimated							I will find some laser ply then I will check to see the measurements before cutting my Oak and Laser Ply
	Actual							
Draw up design on 2D and router cut my wood.	Estimated							This will be an easy task to do as i already know the measurement of my wood. I have used 2d design before so i know exactly how to use it.
	Actual							
Laser cut the pattern onto plywood	Estimated							I know how to use the laser cutter. This will be an easy task to do as i already know how to use the machine
	Actual							
Cut wood using the hexagon jig	Estimated							The jig is already made so it will be easy to cut my wood on the bandsaw.
	Actual							
Tape the 6 piece of wood together	Estimated							This should be an easy task.
	Actual							
Sand the piece of wood until smooth	Estimated							This will be an easy task. I will be sanding it until smooth.
	Actual							
Wax sides and wait till dry	Estimated							This will be an easy task.
	Actual							
Draw up 2 hexagons in 2d design	Estimated							This will be an easy task. This won't take long as there is a hexagon tool on 2D Design.
	Actual							

Cut on laser cutter	Estimated							This will be an easy task as i already know how to use the laser.
	Actual							
Print pattern onto acetate	Estimated							This will be a challenge as I have never used acetate before.
	Actual							
Spray the spray mount onto the acrylic	Estimated							This will be easy to do as I only need to glue my pattern onto my acrylic.
	Actual							
Stick photo onto acrylic	Estimated							This will be an easy task.
	Actual							
Cut around the acrylic and photo	Estimated							This will be an easy task.
	Actual							
Undo the tape and glue 4 sides together	Estimated							This will be an easy task as i only need to glue my slides together.
	Actual							
Stick the acrylic to the laser ply hexagon using araldite	Estimated							This will be a little challenge as i have never used the glue before.
	Actual							
Place one side of the hexagon into the wood sides	Estimated							This will be an easy task.
	Actual							
Cut 3 piece of wood	Estimated							This will be an easy task.
	Actual							

Place a line of different wood in the middle of the wood	Estimated						This will be a difficult task as i will have to find the middle and make sure it all looks equal.
	Actual						
Sand until smooth	Estimated						This will be an easy task.
	Actual						
Cut the base at an angle of 120	Estimated						This will be a difficult task as it needs to all be equal and fit well.
	Actual						
Check to see if they fit and tape together	Estimated						This will be an easy task.
	Actual						
Glue the base together using pva glue	Estimated						This will be an easy task. It must all look clean and have no glue dripping down the sides.
	Actual						
Tape the base together and let it dry	Estimated						This will be an easy task. Have to make sure that it is left to dry.
	Actual						
Drill a hole through the laser ply and acrylic for the light	Estimated						This will be difficult as acrylic can snap if a lot of pressure is applied.
	Actual						
Thread the wire of my light threw the hole and tape down	Estimated						This will be an easy task.
	Actual						

Tape down the light around the side of the hexagon	Estimated						This will be an easy task.
	Actual						
Place the other side of the hexagon on the other side of the wood	Estimated						This will be an easy task.
	Actual						
Fix the 2 remaining pieces of the sides on to the hexagon	Estimated						This will be difficult as each piece should all fit in well and not have gaps.
	Actual						
Tape them together	Estimated						This will be an easy task.
	Actual						
Glue both edges with pva and stick together	Estimated						Make sure all edges look clean and have no glue dripping down the sides.
	Actual						
Tape around the hexagon and set aside to stick	Estimated						Make sure all edges are glued and left aside to dry.
	Actual						
Mark out a hole from the bottom of the base to the bottom side of the hexagon	Estimated						This will be difficult as i need to not drill into the lighting strip in the hexagon.
	Actual						

Drill a hole using the hand drill and a screw and countersink into the bottom of the base	Estimated							This will be an difficult task to do as i have to make sure that it's straight before countersinking the hole.
	Actual							
Wipe away any marks/sawdust and wipe the whole light	Estimated							This will be an easy task.
	Actual							

Working drawing

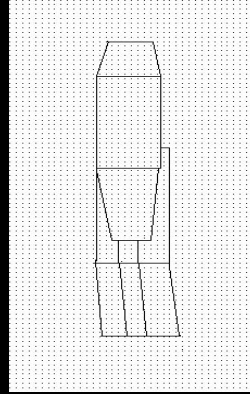
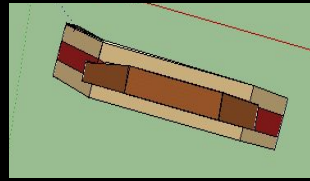
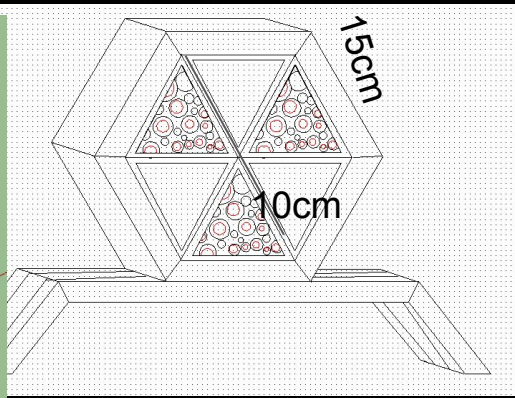
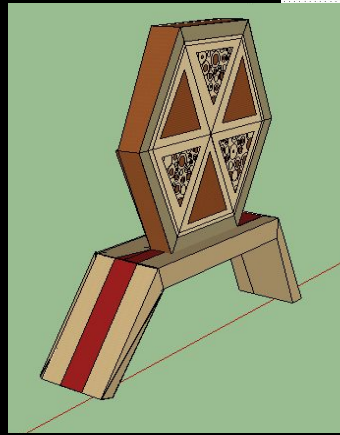
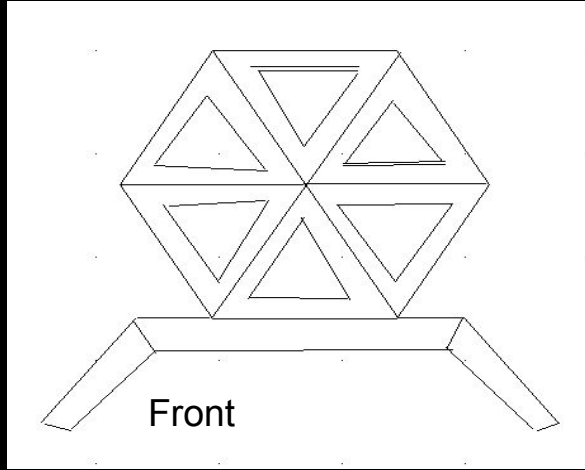
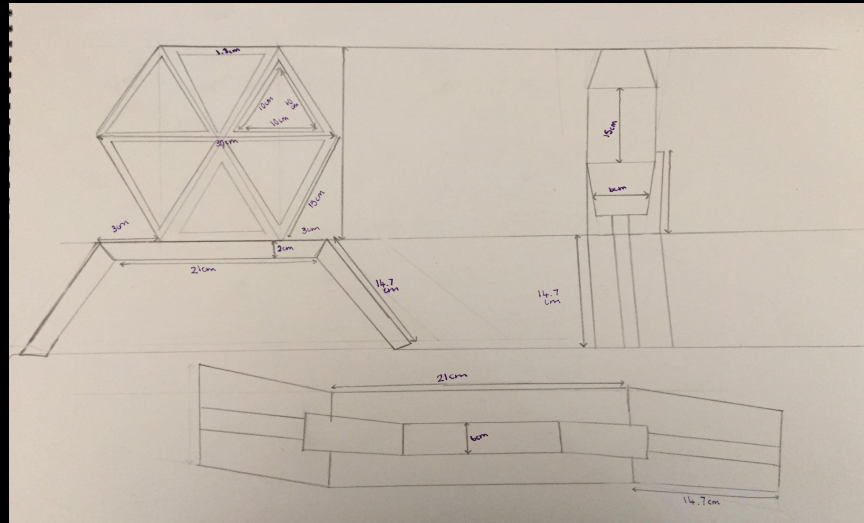


Table to show thickness of materials

Materials	Thickness
Plywood	1.8 Cm
Acrylic	3 mm
Oak	2 Cm
Oak base	2 Cm



This is my working drawing I've drawn on 2D design. This shows the different angles of my light. This table shows you the thickness of my materials.

Final Light

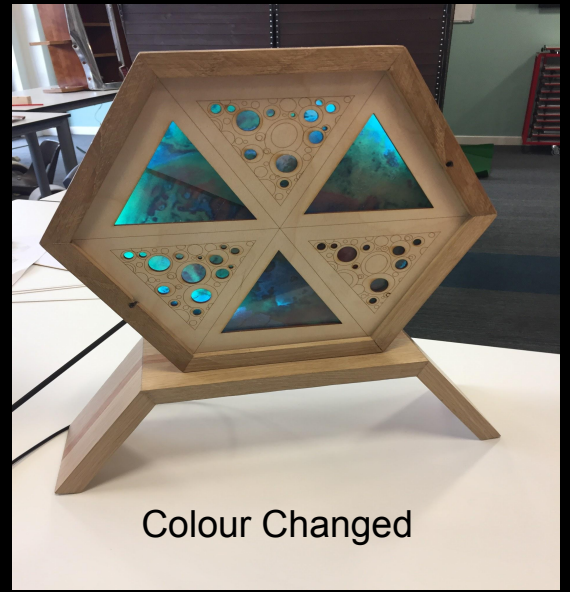
This is my final light. I am very pleased with the way it turned out. I love that my light changes colour and has an remote that can do this by.



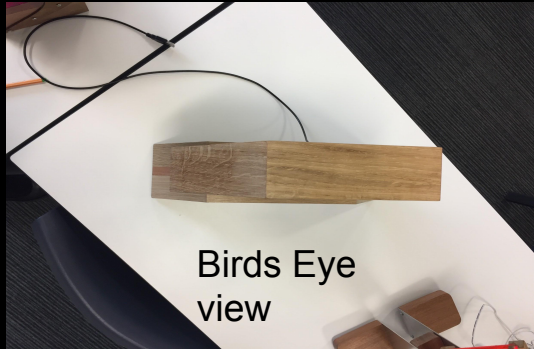
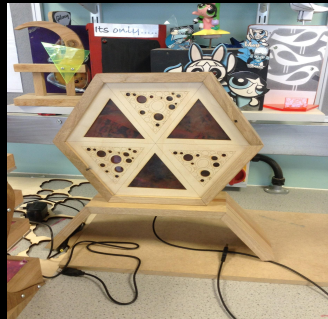
Front



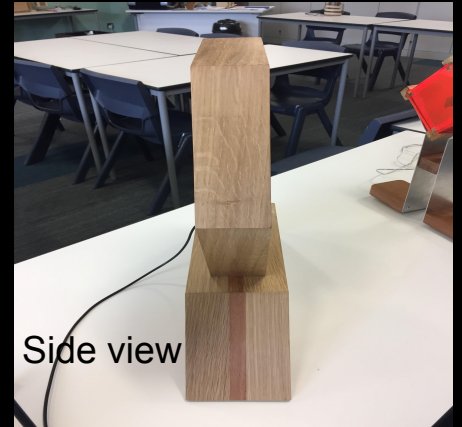
Light On



Colour Changed



Birds Eye
view



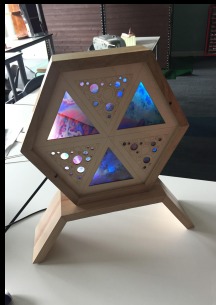
Side view

Evaluation

My brief for this project was to design and make a light for a desk top based on a young women as the target user. My light needed to be inspired by the work and images of Richard Weston. My first Specification was function. The initial for function was that my design must be able to light up a room and must be able to be switched on and off. This specification has been successfully achieved as my light lights up a room and is able to be switched on and off. My second specification was on Aesthetics. My initial for this was that my light must be suitable for my target user and look aesthetically pleasing to the eye. I think I have achieved both of these. My third specification was on Sustainability. My initial on this was that my light must have been sustainable and made out of recycled materials. I have achieved this as most of my light was made from all recycled materials and it is sustainable. The fourth specification was of the target user. I said that my light must have look and fit the needs of my target user. I think that i have achieved this as I believe my light fits the needs of my target user. Another specification was on the ergonomics of my light. The initial for this was that my light must've been easy to use and clean. I think that my light is easy to use but I do think it would be difficult to clean because of the small place in between the circle pattern. My sixth specification was on the size of my light. I wanted my light to be able to fit into the location which was a desk. I think i have achieved this as I made sure my light was the correct size before I completed my light. The seventh specification was on materials. The initial for this was that my light needed to be made of a fine, high quality material that will last a long time. I think I have also achieved this as my light is made from mostly Oak which is long lasting as well as being a high quality material. The eighth specification was on the safety of my light. It needed to be safe to use. I believe my light is very safe to use. I sanded every sharp corner and made sure that my light was safe to use before fitting it in. another specification was on the location for my light. My light needed to be suitable to be placed in the location i have chosen. I think my light is of a good size but would be too big for a small desk. The tenth specification was on the Quality and finish. The initial for this was that my light needed to be of a high quality and finish. I have achieved this as i believe my light has a good finish on it as well as it being finished at a high quality. The last specification was on the manufacturing process. For the manufacturing process the initial was that my light must go through a manufacturing process. I believe I have also achieved this.

Overall, I believe I have met and achieved all of these specifications. I believe my light has been very successful and has exceeded my expectation of what I originally set out to make. I think my light fits in well with the brief as well as showing off my skills when creating my light.

When asking my target user what she thought about my light she was amazed with the design of my light . I asked her for any good and bad points of my light . She liked how my light is controlled by remote control and how the light can be changed to different colours . My target user also expressed a few bad points of my light. One being that it is difficult to change LED lights should my light stop working, as there is no way of getting into the light unless you take one of the sides off. Another down point to my light was that has to be placed near an USB plug socket when in use as my light runs off a USB lead . However if you have a portable charger my light can be plugged into one of those. I asked my parents their thoughts of my light and both said it was fantastic. My mum thought that the design is of an original shape for a light and she especially thought the pattern was lovely.As for my dad he likes that the remote control allows the colours to change. Both my parents believe I have achieved my specifications however my mum did say about the size that it would need to go on a large table. If i had the chance to do my light again i would make it a bit smaller.



During the stages of making and designing my light, I was well organised. I knew at the start the kind of shape I wanted my light to be. I took the shape idea from a fun fair ride The Big Wheel. I also made sure I was organised each lesson by having a plan of what I needed to do during the lesson. During the development stage I realised that the shape was very hard to do. So I decided to change the shape of my light from an Octagon to a Hexagon. This meant that the calculations were easier to do for each side and meant it would be easier for me to design and make. Throughout the making part of my light I performed many quality controls. When making the base I made sure that each side was smooth and well sanded. For my top hexagon I made sure it was all well sanded and waxed. I ensured the edges were all well glued and there were no sharp edges. If my light was made into a batch production, I think I could keep the way I manufactured my light the same. I think that my light looks and feels like a high quality light. It would suit many people's needs for a light as it's unique and different to what people buy now in shops. I also think many people would like my light as it has an advantage of colour changing lights controlled by a remote control. As my light was mostly made from recycled materials, my light was inexpensive to make. However, my light wasn't fully recyclable as I used acrylic. The cost of many lights of this size ranges from £30 +. I feel as if I made my light very cost effective. I spent just under 6 weeks making my light as a lot of time was spent waiting for the glue to dry. I think my light could be developed and put into batch production and sold because my light is simple to produce. Once you have cut every part of my light all you need to do is glue it all together. If I had the chance to do my light again I wouldn't change the manufacturing processes. To make the process of making my light faster I would make another jig. This is because the jig I used for my light was not accurate enough for my light. My light already has elements of CAD and CAM. I used 2D Design to create my laser cut pattern as well as drawing my hexagon faces.

My light helps people by making their lives easier and will give them pleasure. My light is good to look at as my light can change different colours and can go on a theme. My light is good as it can bring up the mood when changing colours. My light can improve the environment. As my light is made for a desk, it can make the space brighter. It can also help the environment around it be calmer and happier as my light changes colours. Depending on how many lights needed to be produced depends on how big the workshop would need to be. Also how many people would be needed. The majority of each light would need to be produced on the laser cutter. To make my light you would need more than 1 person to manufacture the light. You would need to split the manufacturing process into at least 4 sections and you would need 2 or more people per section. This would make the making of my light easier and faster. I used my materials sensibly and economically I didn't waste any resources. I used mostly recycled pieces of wood for my light as well as my base. My light can also be recycled for materials when my light no longer works or is no longer useful.

Overall, I am very pleased with the way my light has turned out. I love the shape of my light as I think it's unique and different to what many lights are like in shops and houses. I loved designing my light and getting to make my light. I really enjoyed the development of my light seeing it develop into a really pretty light. I'm very happy with the way my light turns on and off as well as it being able to change colour by a press of a remote control to whatever colour you want the light to be.

I feel like the light came together the way I wanted it to. When designing and making my light I have learnt a lot from doing this. I have developed my developing skills when designing. I have learnt how to use Google SketchUp to design my light which I had no knowledge of using before and now I feel comfortable when using the programme. I have also learnt a range of different skills when using the tools. I learnt how to drill a Countersink. I learnt that when using the laser cutter it was important to change the settings to the thickness of the material. I am very pleased with my light as it shows off my skills.

If I was to do my light again. The one thing I would change is the placement of my wire for my light. Although it's hidden it's hard to fit in and find connection when turning on and off. I think that next time I would buy a longer lead for my light, this is so that the LEDs can be fitted around the inside as well as having enough room on the outside. By having a longer wire this will allow me to have a better connection when using the remote to turn the light on and off and change the colours.

