

Brief - Specifications

Physical / aesthetic

- Must have a dark blue light diffuser.
- Must have a laser etched / 3d printed design that I like.
- Very easy to turn on and off.
- Weight doesn't matter because the desk is very strong\stable and won't be moved very much.

Functional

- All sharp edges must be removed.
- Must fit in the conner of my desk that is 800mm x 1500mm.
- Must have feet that wont slide around and Scratch my desk.
- Wont break from a 1.2 m drop.

Brief

- I intend to make a very eye pleasing and stylish light that projects and image or sentence on my ceiling. I will make this to solve the problem of an empty space on my desk that doesn't get used and looks very boring / plain.

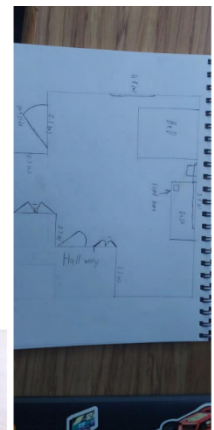
Social & Physical Environment

Social

The light will only be used me because I am the only one that enters my room. I will be using it when I am watching tv in my room. I am 14 years old I like cars and sports I also like to have quite a chill vibe in my room, so I think I want my light blue.

Physical

The environment that the light will be in is an indoor private space. The light won't be in a very high traffic area it will sitting on my desk that doesn't get walked past very much.



Stakeholders

█ (Brother). I want him to be one of my stakeholders because he is a past student and has done this project a few years ago and he works in an engineering workshop, so he is the perfect stakeholder.

█ I want him to be one of my stakeholders he is a good honest student and will give good true feed back.

█ I chose him to be one of my stakeholders because he will but truthful and criticize my work very well.

Research:

Existing outcomes



Analysis of stakeholder feedback

Stakeholder

My stakeholder said that they would be very hard to make and design in fusion.



Stakeholder

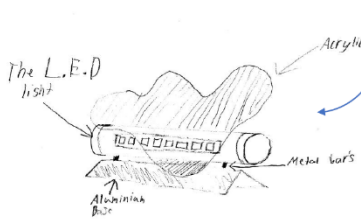
My stakeholder said that these lights are very old fashioned so the way they were made probably wouldn't be very economical. Also, they would have to go into an old styled room.



Stakeholder

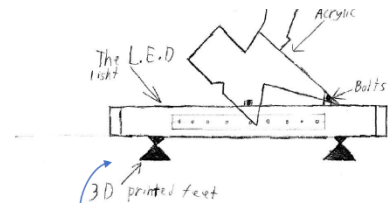
My stakeholder said that these designs were very unique and funky but would have to fit in the room very well and go with the vibe of its surrounding.

Concept Development



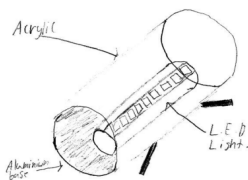
Concept 1.

My stakeholder said that it could be top heavy and unstable he also said the shape is weird and doesn't cover the light properly. Another thing he said was that having a tight bend in the aluminum could weaken it.



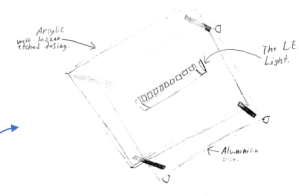
Concept 2. My stakeholder said the acrylic could break very easy so it won't be very good for where I will have it because it is like a metre drop to the floor. He also said that the light doesn't serve very much purpose. Another thing he said was that the shape of the acrylic is not very pleasing or cool.

Concept Development

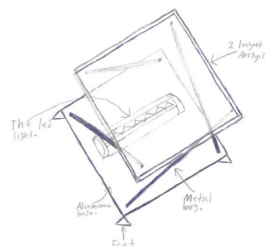


Concept 3.

said that the light will make the room a cool colour and project well, but he also said that it might be hard to mount the acrylic to aluminum. Another thing he said is that not having legs on it means it might roll around a bit and damage the table.

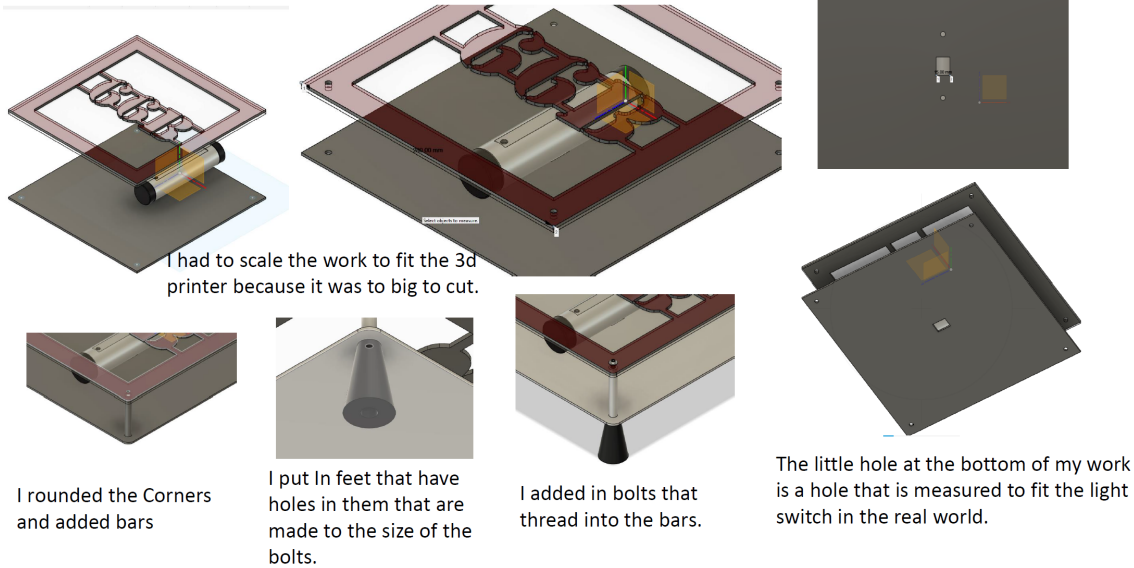


Concept 4. said that the shape is a bit boring and that there isn't really anything interesting about it but with a cool laser etched design it might change. He also said that the edges could be sharp and get stuff caught on it and asked how do you get to the switch to turn the light on.

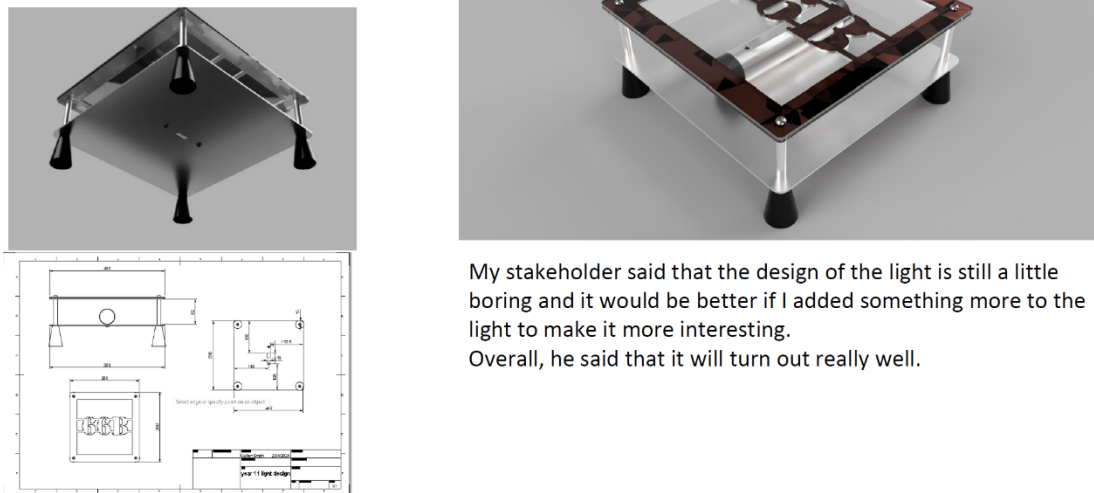


Concept 4 pt2. I went back and redesigned the concept of it to add more features like the angles and the other layer of acrylic to make it less boring. I will also think about how to easily get to the switch for the light

Functional Modelling



Final Design



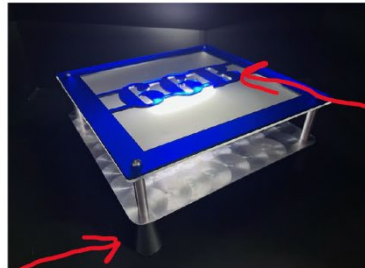
Outcome Development and decisions



The design for my base was simple but yet effective. I did not put any curves in my base so to make it more appealing Mr [redacted] recommended that I use a scouring pad to make a design scored into the aluminum, I liked this and decided to add on the base to my final design because it made the lamp more exciting to look at. When I was designing my base on fusion I had an idea to make a little cut out in the bottom of the base so the switch fits through it perfectly. To do this I had to measure the switch in real life then transfer it into fusion 360. I decided this was a way to make the light more easy to use.

Analysis of Outcome

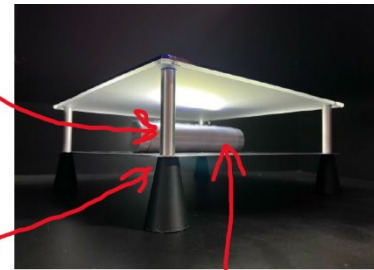
- Key Features



3d printed feet

Aluminium polished bars

Switch



Light housing

Blue light diffuser with Lazer cut design

Analysis of Outcome

specifications	Final analysis
Must have a dark blue light diffuser.	<u>This specification has been fully met</u> I was able to get the exact color of acrylic for my light defuser I wanted. The clear acrylic under neath the main light defuser really makes the colour of the top layer really stands out. My brother said dark blue is the right colour to match the environment of my room.
Must have a laser etched / 3d printed design that I like.	<u>This specification has been fully met</u> I am very pleased with how my Acrylic turned out. Instead of Lazer etching into the acrylic I decided to cut it out I thought it would stand out more than etching it.
Very easy to turn on and off.	<u>This specification has been fully met</u> I spent a lot of time making the height of the feet so that a person's hand fits nicely underneath the light to turn it on and off. I did this by measuring mine and my classmates hand height. I also went with the little black switch because it was easier to turn on and off.
All sharp edges must be removed.	<u>This specification has been fully met</u> I recommend me to use the plate shears to round the edges for my base I trusted him that this will work because his base is round and his turned out really well. My corners turned out well also as I gave them a little sand down just to smother then of a little more.
Must have feet that wont slide around and Scratch my desk.	<u>This specification has been partially met</u> This was only partly met because I have very nice 3d printed but there are no rubber bits on the bottem of the feet to stop them sliding around and scratching my desk. To do this I would of had to bring in supplies from home to put on my feet but I didn't have any thing at home to do this.
Wont break from a 1.2 m drop.	<u>This specification has not been met</u> This is not meet because I am not willing to test that if it durable enough to withstand that drop but I believe that I will withstand the drop because I have built it very strong.

Analysis of Outcome

- Modelled Environment:

During the prosses of making my prototype I was given lots of ideas, feedback and recommendations to make my final design better. I used all of the feedback, ideas and recommendations I was given for example [redacted] told me to keep the design simple but interesting so I could spend more time on the little things of my project so the final design would turn out better. I really took this into consideration and I'm really happy I did because I think that my design is simple but very interesting and that gave me time to do stuff that other could not for example being able to use the scouring pad on my aluminum base which looks awesome

Overall, my stakeholders said that that the design is awesome and that it projects the image on the roof really well. The only thing mentioned is that my switch does not line up perfectly with the hole I made for it but they said that this is alright because it is on the underside of the light so you will only see it if you are looking for it.

