



National Certificate of Educational Achievement
TAUMATA MĀTAURANGA Ā-MOTU KUA TAEA

Exemplar for Internal Achievement Standard Design and Visual Communication Level 1

This exemplar supports assessment against:

Achievement Standard 91068

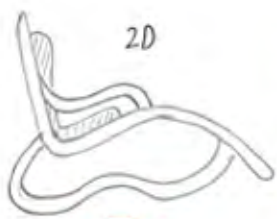
**Undertake development of design ideas through graphics
practice**

An annotated exemplar is an extract of student evidence, with a commentary, to explain key aspects of the standard. These will assist teachers to make assessment judgements at the grade boundaries.

New Zealand Qualification Authority

To support internal assessment from 2014

	Grade Boundary: Low Excellence
1.	<p>For Excellence, the student needs to undertake effective development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• convincingly exploring and refining design ideas in a coherent and connected way that integrates design features• making design judgments that are convincing and coherent in promoting ideas selected and decisions made. <p>The student has effectively developed their design ideas for furniture, as there is evidence of convincing exploration of shape and form with annotation based around comfort and style (1) (2) (3) (4). There is some convincing refinement of these ideas with the introduction of a canopy and illustrating structural detail (5) (6) (7) (8). This exploration and refinement is mostly coherent and the design judgements are connected, with good levels of freehand visual communication and annotation (6) (7) (8).</p> <p>To meet the requirements of Excellence more securely, there could be more evidence of convincing and coherent judgements. For example, the final presentation could show more depth of detail, so that the final judgements of appearance and function could be more robust.</p>



2D

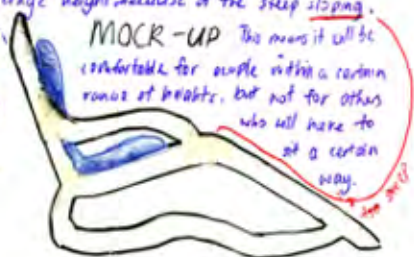
This design will be made out of wire and the supporting structure out of rounded pieces of wood. The cushions will be made out of white nylon and be extra padded near the head rest to fit into the curve of the neck. It will be quiet low to the ground so the feet will rest on the ground. The neologism wood and clear white colour will harmonize nicely together to create a fresh and sophisticated appearance. I don't think the current base structure will be able to support the weight comfortably so it will need to be redesigned with more structural components or thicker parts. I think the overall outline of the seating is quite good and will position the person nicely. Maybe the angle of the legs will be slightly uncomfortable because of the obvious peak and dip. Also, the disadvantage of this chair would be that the shape of the seating might restrict the comfort factor for users above or below the average height because of the steep sloping.

1



3D

This mock-up allows me to see that all the components are in proportion with each other and the gentle curve of the overall structure. I think this design will be quite stable and sturdy. I like how the cushions have been slightly moulded to provide a little extra comfort.



MOCK-UP This means it will be comfortable for people within a certain range of heights, but not for others who will have to sit at a certain way.

I want this chair to provide maximum comfort and be as user-friendly as possible. This design is very sophisticated and pleasing to the eye; it fits in with the modern day style. The advantage of being closer to the ground is that hardly any effort is needed to use it. Instead of having to slunk up on to chairs which are raised.



2D

2



3D

I have separated the cushioning material into sections as I think this will help improve the ergonomic fit and comfort factor of this chair. Also, I have added an extension to the top to provide shade. This design will be made out of rounded plastic which will be coated with a deep violet colour. I want the padded cushions to be a very light beige colour.



MOCK-UP

With this mock-up, I can see that the shape of the chair will provide a great supporting base for a comfortable-sunging chair. It will be suitable for people with a vast range of heights and builds. I can see that the cushions will sit comfortably under the person and mould to the position of the person. The back angle creates a gentle curve while the foot rest is slightly higher for relaxation.

With this concept, I am aiming to achieve comfort rather than appearance. It will be made out of a deep green canvas which will literally hang off a supporting wooden structure.



2D

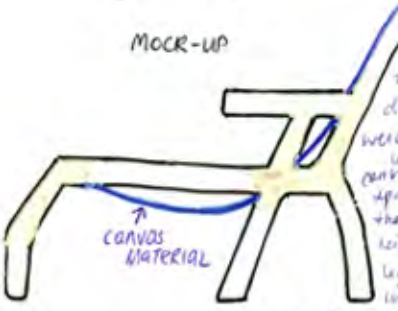
3



CANVAS MATERIAL

This design is quite similar to a hammock with the fact that the position will adjust depending on how the person sits. However, I do not see the fact that there are so many components and the overall appearance looks quite complicated.

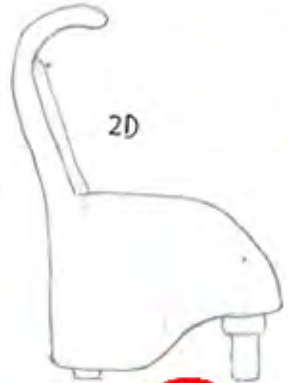
I occasionally don't like how there is a space between the material and the long horizontal piece of supporting wood. I think there is a lot to improve on with this concept, particularly with the looks and maybe comfort.



MOCK-UP

CANVAS MATERIAL

Producing this mock-up has allowed me to see that this design will be quite uncomfortable due to the fact that when a person's weight is put on, the unsupported canvas material will move to a more springy position. Also, I now realise that there is extra unnecessary height and not enough room for the legs to rest in a comfortable lounging position. This design will have to be considered more carefully to provide the comfort factor that I want.



2D

4

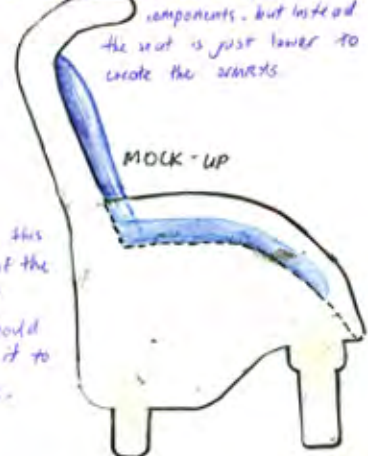


3D

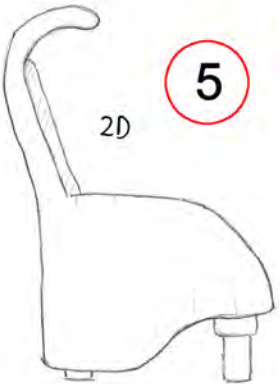
By constructing this mock-up, I can see that the angle of the backrest will create a comfortable support for the back. Also, I think the shelter should be extended out a bit more to enable it to provide better and more effective shade.

This idea is quite bulky and resembles a lounging sofa for outdoor use. The seat goes below the arm rest as shown in the 2D drawing and mock-up. It will be made out of timber and have navy blue fabric covered cushions. I don't like the overall look of this design because it looks as if outdoor & indoor aspects have been combined to create a chair which I think looks out of place. Having excluded the outside appearance, I think it will be quite comfortable and stable. Also, it will be able to withstand a lot of pressure and be user friendly. It will be produced out of timber slats which will be moulded to create the curve of the shelter. The structure beneath the bottom cushion will be a big block of solid timber that has been carved to create the base curve. I see how the arm rests aren't separate components, but instead the seat is just lower to create the armrests.

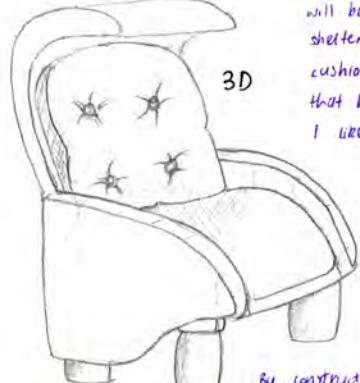
components, but instead the seat is just lower to create the armrests.



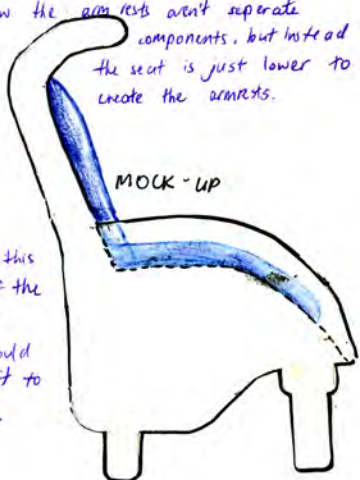
MOCK-UP



This idea is quite bulky and resembles a lounging sofa for interior use. The seat goes below the arm rest as shown in the 3D drawing and mock-up. It will be made out of timber and have navy blue fabric covered cushions. I don't like the overall look of this design because it looks as if outdoor & indoor aspects have been combined to create a chair which I think looks out of place. However, excluding the outside appearance, I think it will be quite comfortable and stable. Also, it will be able to withstand a lot of pressure and be user friendly. It will be constructed out of timber slats which will be moulded to create the curve of the shelter. The structure beneath the bottom cushion will be a big block of solid timber that has been carved to create the base curve. I like how the arm rests aren't separate components, but instead the seat is just lower to create the armrests.



By constructing this mock-up, I can see that the angle of the backrest will create a comfortable support for the back. Also, I think the shelter should be extended out a bit more to enable it to provide better and more effective shade.



Starting design



I don't think this design will provide a lot of shade, so I will extend the canopy out further. Because the position of the sun changes constantly, it would provide shade for only a certain period of time.

Change 1: CANOPY

I have extended & curved the canopy which will make it much more effective. Also, I have added support columns which extend out from the canopy to connect to the seating base.

Change 2: BASE

I want to develop the base of this design because it looks bulky and requires a lot of unnecessary material.

ADVANTAGES

- It looks smarter
- More durable

DISADVANTAGES

- steel sheets are more expensive than plastic. However, I am aiming this designer piece toward a higher price range & modern day style. They will get quality for their money.

Change 3: MATERIAL

Instead of this design being constructed out of moulded plastic as originally planned, it will be made out of moulded steel sheets which have been powder coated a light silver-grey colour to give it a more sophisticated appearance. The cushions will remain a white/light beige colour to compliment the structure.

CONTINUED...

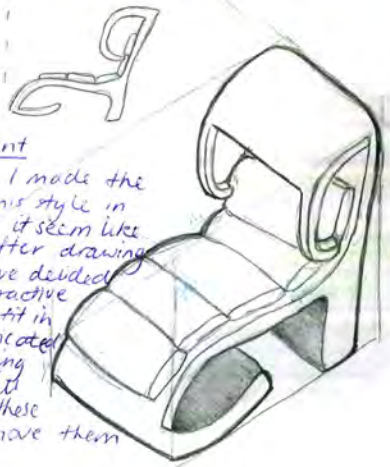
CONTINUED...

Material disadvantages continued...

- Metal will rust, so it would have to be coated in a metal finish or powder coated. I will use the second option because it gives me the choice of any colour as well as covering it with a protective coat, which is very convenient.
- It will be heavier than plastic. However, this could also be considered as an advantage because it will be more stable and grounded in harsh, windy weather.

Change 4: ARMRESTS

I want to add in some armrests to reach the maximum comfort level. Instead of the extended support columns joining to the seating base, I will curve them inwards to create armrests which don't look out of place.



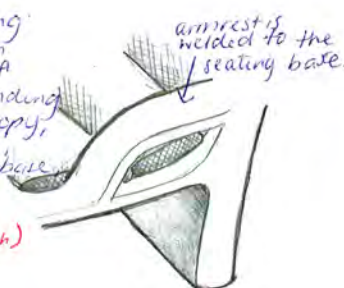
*** Comment**

Even though I made the armrests in this style in order to make it seem like they fit in, after drawing this idea, I have decided it looks unattractive and does not fit in with the sophisticated style I am trying to achieve. I will either develop these armrests or remove them altogether.

Change 5: ARMRESTS

My previous attempt at adding armrests resulted in the design looking unappealing and out of place. This time, instead of extending the support columns of the canopy, I will have a flat steel piece which is connected to the seating base upturned in order to make the armrests.

(Inspired by design (4) from research)

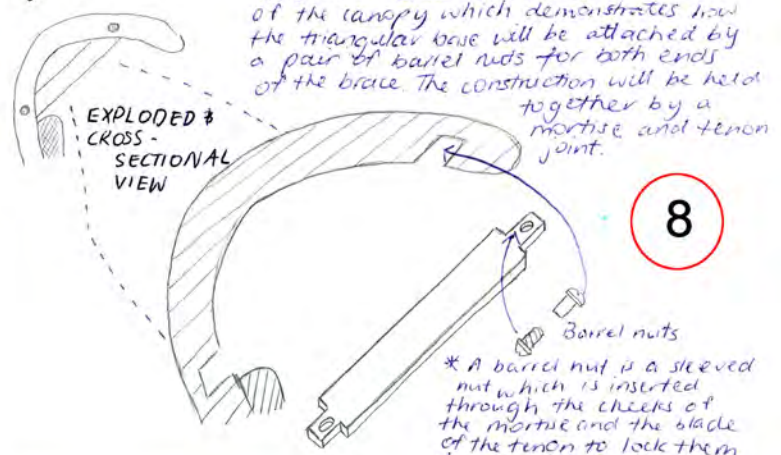


Change 6: BRACE

I will have to add support structures under the canopy to ensure that it will be strong and stable, since the extended support columns have been removed in the process of developing the armrests.

Exploded drawings of canopy & brace:

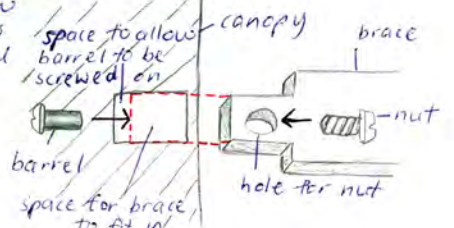
Purpose - To show how different components fit together.



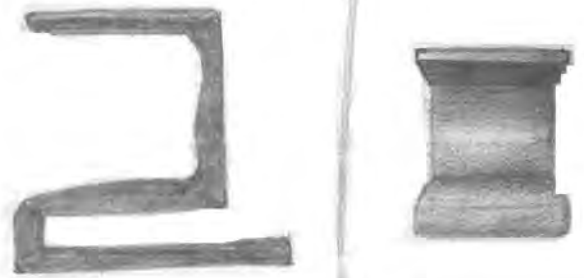
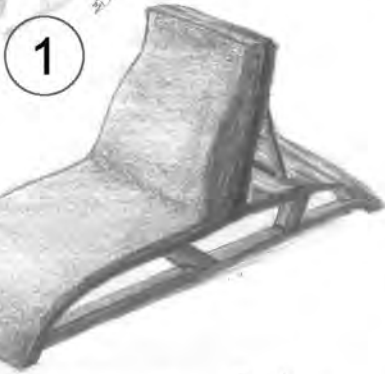
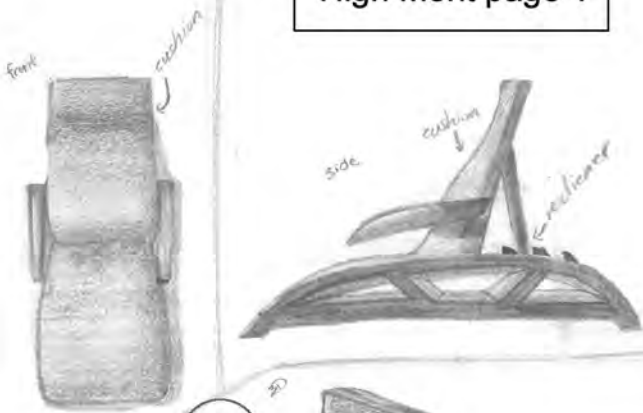
This is a cross-sectional side view of the canopy which demonstrates how the triangular base will be attached by a pair of barrel nuts for both ends of the brace. The construction will be held together by a mortise and tenon joint.

* A barrel nut is a sleeved nut which is inserted through the cheeks of the mortise and the blade of the tenon to lock them together.

Here is another view of the same joint, this time, a cross-sectional exploded drawing as seen from above.



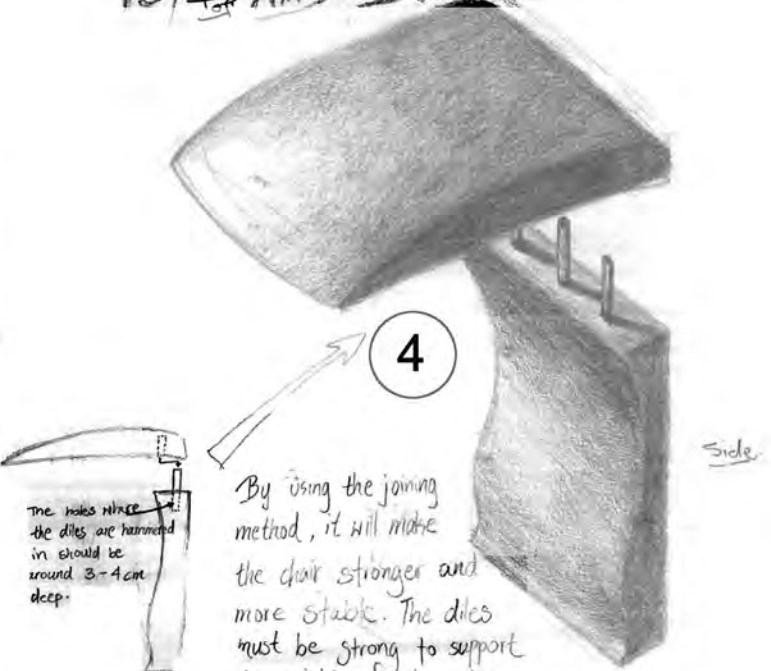
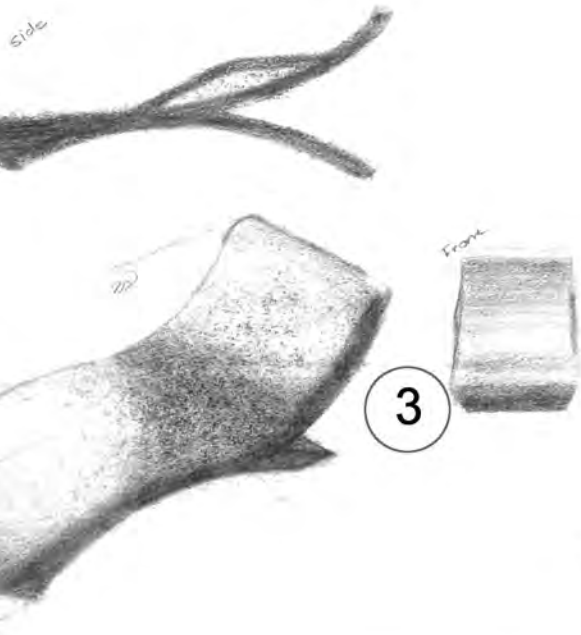
	Grade Boundary: High Merit
2.	<p>For Merit, the student needs to undertake informed development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• purposefully exploring and refining design ideas, in relation to decisions and considerations that are meaningful to the design context• making design judgements where ideas and decisions are informed by design principles and the brief context. <p>The student has shown informed development of their design ideas for furniture, with some purposeful exploration of shape and form (1) (2) (3) and refinement of possible assembly solutions and alterations. (4) (5) (6) (7) (8) (9). Most of the design considerations and judgements are either meaningful to the context or informed by design principles.</p> <p>To meet the requirements of Excellence, there would need to be evidence of effective development. For example, the student could show selection of ideas and design judgements that are more convincing and coherent such as more convincing ergonomic shape and more robust assembly detail.</p>



It is a Outdoor Chair, made out of brown wicker. The chair has a recliner which can adjust up to three levels. The chair will be really comfy and durable since the cushions will have a canvas cover to prevent rain damage. This chair should last a very long time with a stable base. The chair is used for outdoor comfort, because of its ergonomic fit. The chair can support any body weight since it has thick legs and parts. I don't like this concept because is very heavy to carry it around. I don't prefer the traditional style and is very hard to make.

I like this chair because is modern and creative. It's made out of Kwila. It's very comfy too, since it has the ergonomic fit. It will be very stable since of the flat base. It will last very long and can block bad weathers, like rain and snow using the board on top.

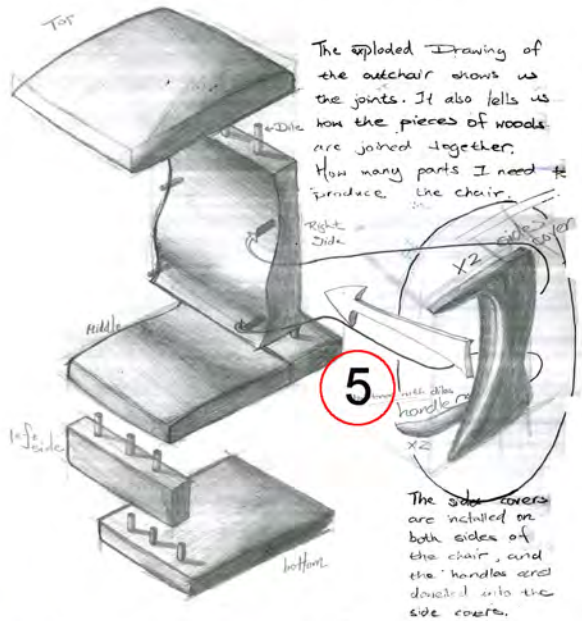
JOINTS CONTINUE
EXPLODED DRAWINGS OF
TOP AND SIDE



By using the joining method, it will make the chair stronger and more stable. The diles must be strong to support the heights of the pieces, there-for, the diles should be strong and thick, with PVA glue in the holes where diles are, so that is more stable and won't break easy.

This outdoor chair is designed to be more modern and simple, compare to concept one, is made out of good quality light colour wood. It has the ergonomic fit which is very comfy to sit on it. It will last very long since it has thick body and stable legs.

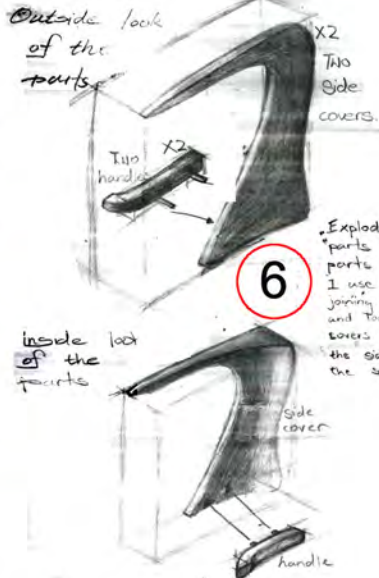
Exploded Drawing



The exploded drawing of the outchair shows us the joints. It also tells us how the pieces of woods are joined together. How many parts I need to produce the chair.

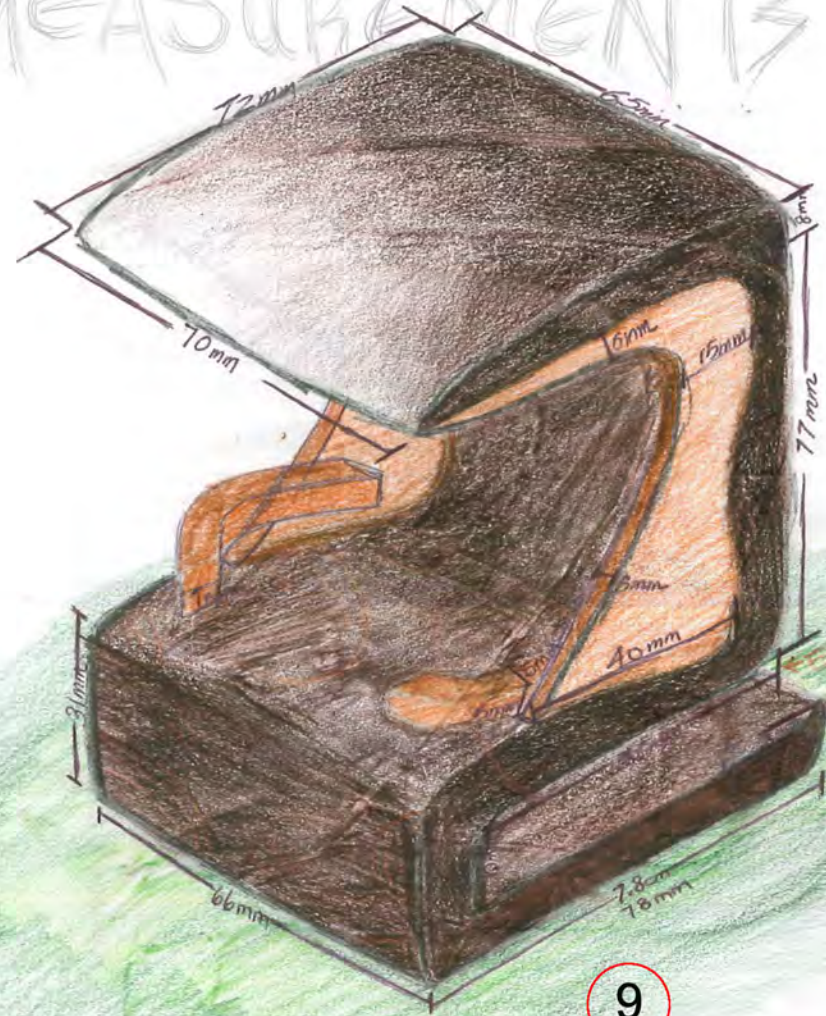
The side covers are included on both sides of the chair, and the handles are dovetailed into the side covers.

Exploded Drawing of the PARTS



Exploded drawing of the parts shows us how the parts are joint together. I use the method of dovetail joining because it's very strong and look good. The side covers will also be joined to the sides of the chair using the same method.

MEASUREMENTS



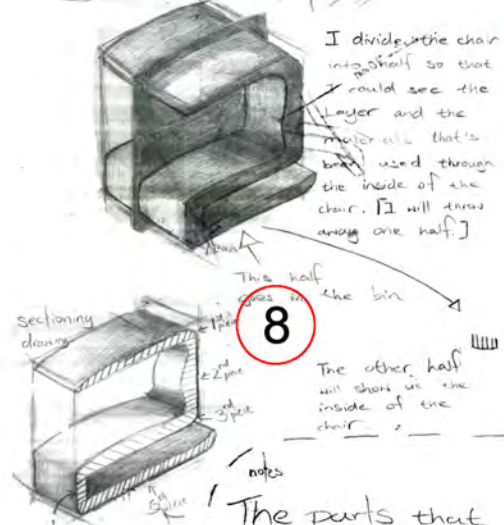
9

Mock up



This mock up looks comfy and good. It has the ergonomic fit which makes it comfy, it's simple and modern, which matches the the Global trend. The disadvantage of the mock up tells us that the part where the bum goes is very weak, since the wood is not thick enough.

SECTIONING DRAWING

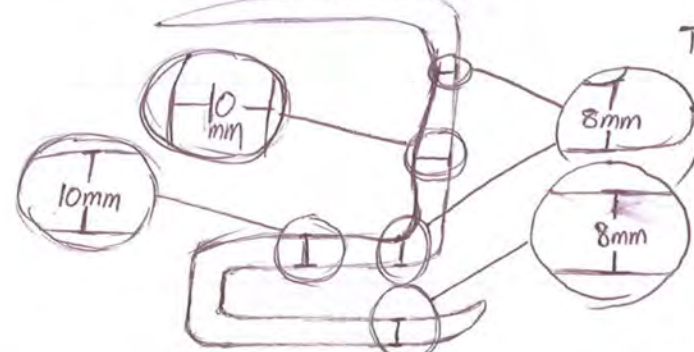


I divide the chair into 2 half so that I could see the layer and the materials that's been used through the inside of the chair. [I will draw away one half.]

The other half will show us the inside of the chair.

notes
The parts that will be installed onto the chair are all made in ONE-PIECE //

AVERAGE THICKNESS OF WOOD PIECES

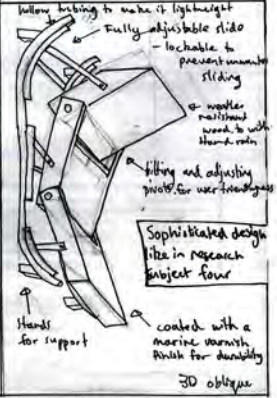
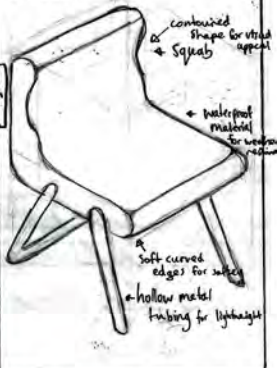
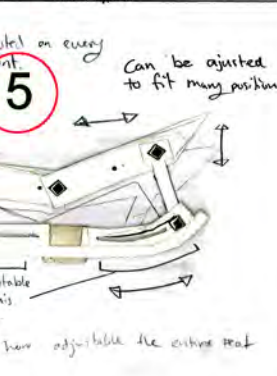
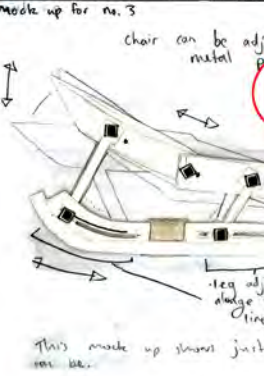
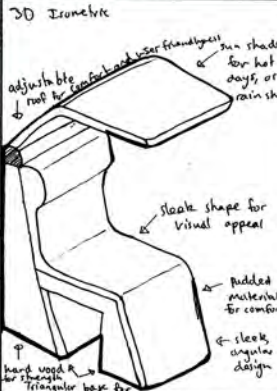
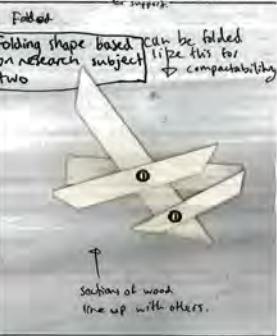
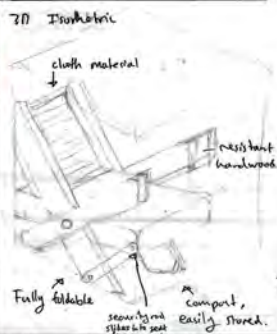
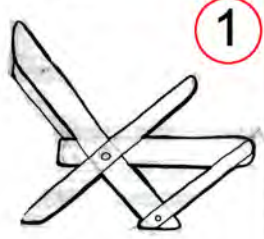


The minimum thickness of the pieces is 8mm and the maximum thickness of the pieces is 10mm

	Grade Boundary: Low Merit
3.	<p>For Merit, the student needs to undertake informed development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• purposefully exploring and refining design ideas, in relation to decisions and considerations that are meaningful to the design context• making design judgements where ideas and decisions are informed by design principles and the brief context. <p>The student has shown informed development with the use of mock-ups to explore pivoting and joining possibilities and visual communication skills which, purposefully explore their ideas for furniture design (1) (2) (3) (4) (5) (6) (7) (8). There is some refinement to the adjustability and refinement of some of the structural components (9) (10). The design judgements mostly incorporate design principles, some in a broad sense.</p> <p>To meet the requirements of Merit more securely, there would need to be further evidence of the informed development of their ideas. For example, the student could strengthen the refinement of ideas to enable final design judgements about appearance and function to be made.</p>

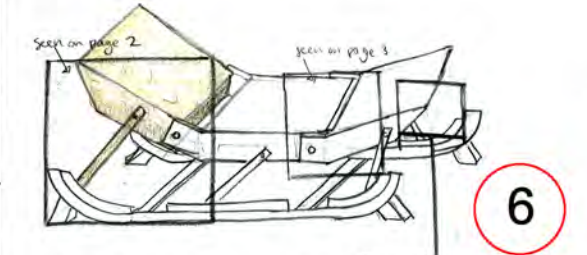
CONCEPTS

based on foldable and wooden design in research subject one.



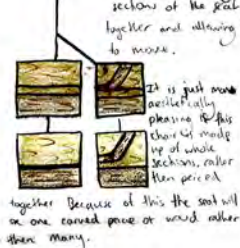
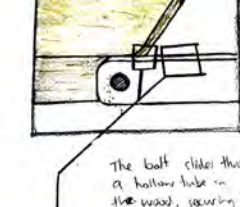
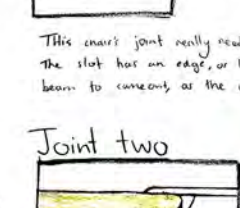
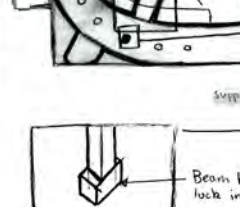
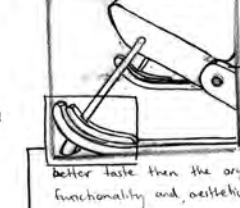
DEVELOPMENT

Concept 3

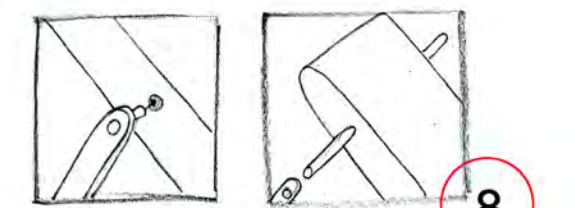
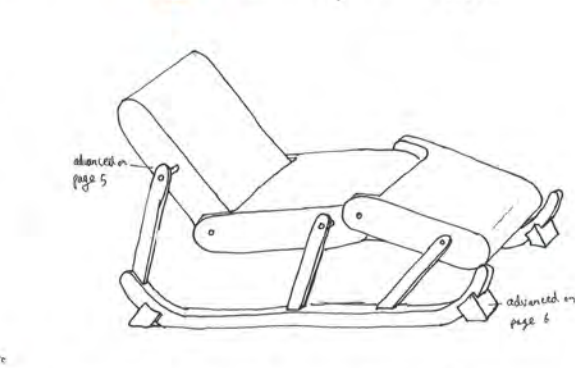
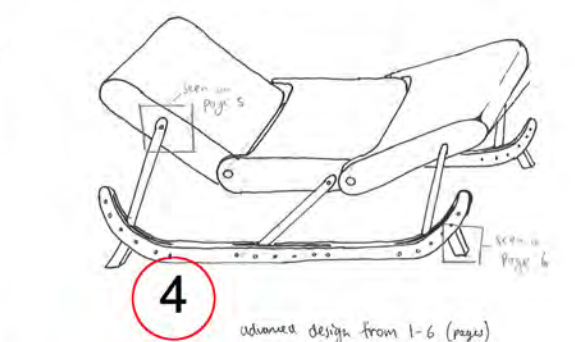


Although the hard sharp edge of this wooden seat gives it a stark-out appearance and is harmonious with the solid wood construction, it is too dangerous. The pointed wood could all too easily lead to injury, and could also lower user friendliness. A bit of aesthetic design needs to be traded for functionality. Curving the edges of the chair may take away some of its tough outdoors image, but the increase in safety and comfort, as well as giving more of an ergonomic fit means that this chair is far better all round with curved edges. The benefits of functionality outweigh the aesthetic disadvantages.

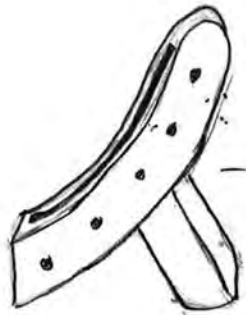
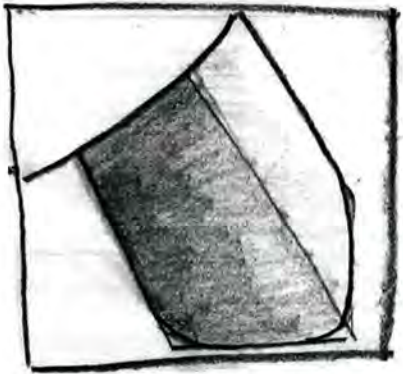
Joint one



Showing Adjustable positions (2 out of 4 design from Ht (pages)



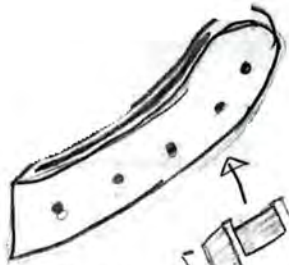
This joint will need to be secured, the way to do this, in keeping with the design of the seat, is to put a lip on the outer end of the bar the beam connects to. To ensure the chair stays in line when adjusted, there will be a bar running through the center of the seat section. This will greatly increase functionality as well as that. The joint will actually be separated from the wood. As the diagram on the previous page shows, the topmost seat section is thinner than the others. To compensate for this the support beam will be an appropriate distance from the chair on the left and middle seat sections, as they are the thin ones.



hollow space inside... the top section means nails or fitting joints cannot be used to secure the leg. they would block the adjustable slide. The top section must fit into the leg rather than the other way around.

Low Merit page 2

9



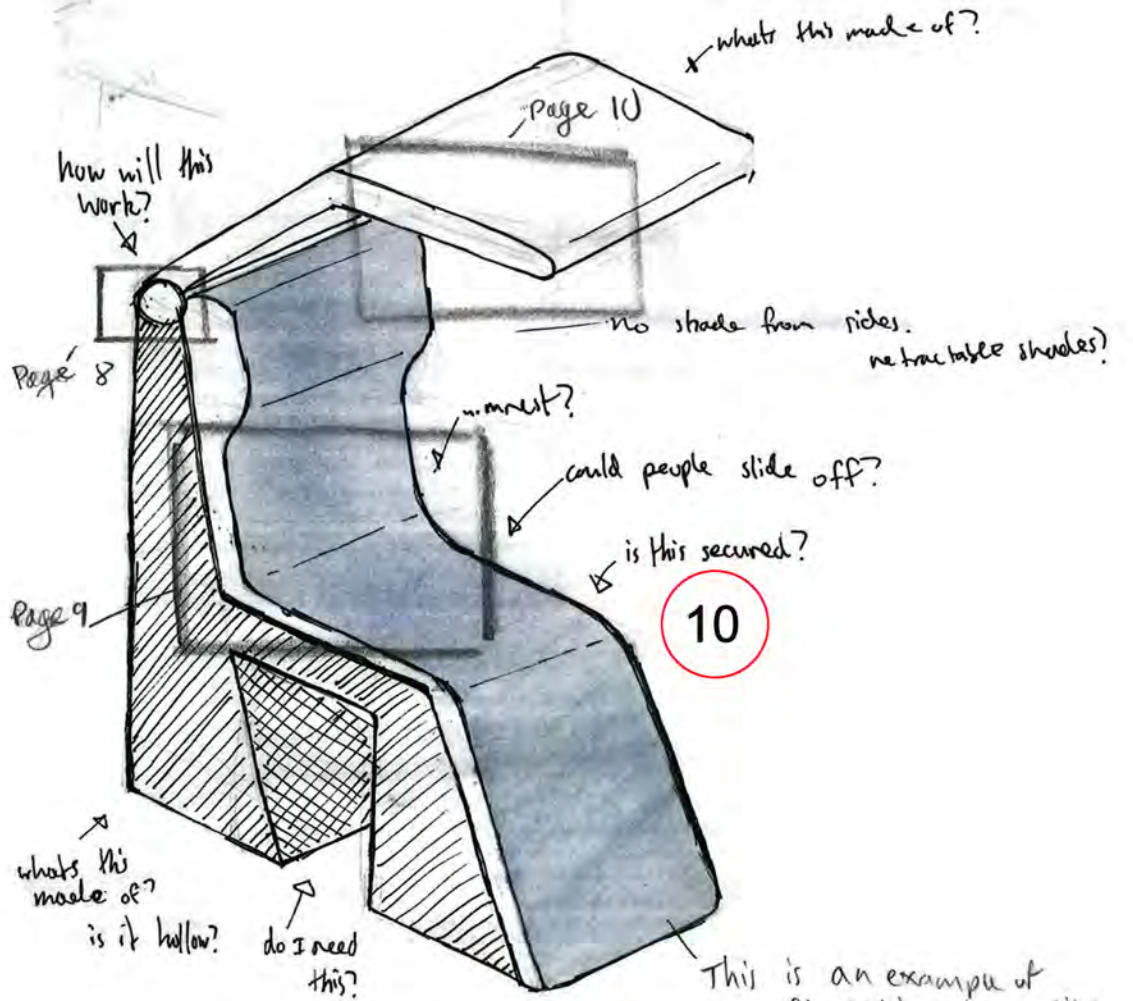
slot for section to fit into. leg must be widened to accommodate leg.

cannot go up too high or risk blocking buttons and affecting functionality



the leg connects into the section without impeding its functionality in any way.

THIS shown on page 4



This is an example of a soft light colour likely to be used on the material as it gives a soft and relaxing appearance to the chair.

	Grade Boundary: High Achieved
4.	<p>For Achieved, the student needs to undertake development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring design ideas by considering possible alternatives• refining design ideas by considering design details• making design judgements that consider qualities of design ideas, in terms of the principles of aesthetics and function, in response to a brief• visually communicating the details of design ideas in response to the design brief. <p>The student has developed product design ideas for a bottle, with exploration of alternative design ideas mainly based on shape, form and colour (1) (2) (3) (4). The details of their design are considered using visual communication, including mock-ups and models of an interlocking shape, to refine their design ideas (5) (6).</p> <p>To meet the requirements of Merit, there would need to be evidence of informed development of ideas. For example, the student could introduce further principles of design in their design judgements.</p>

RESEARCH



I like the design of this bottle but it might be too big to carry around. It is more like an ornament.

1



I like the look of this bottle because it has an art deco look



I like the look and design of this bottle I like how it has different angles of glass set on the surface. The lid is too big for the design.



Concepts



I like this design. It has powerful colour and shape. I don't think it would make a suitable perfume bottle.



This is a simple shape but the balance does not look ok.

2



I like the different shapes in this design. It makes it interesting to look at.



I like the twisted shape to this bottle but it looks like an existing bottle.

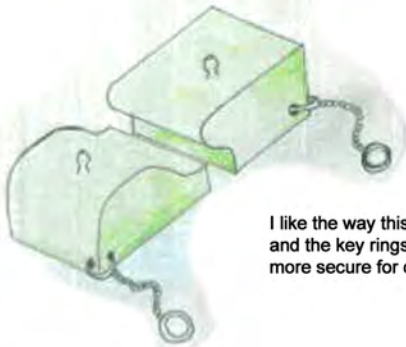
Concepts



3



I like the way this fits together and the key rings make it useful and more secure for carrying around



I am exploring the way the two bottles link together.

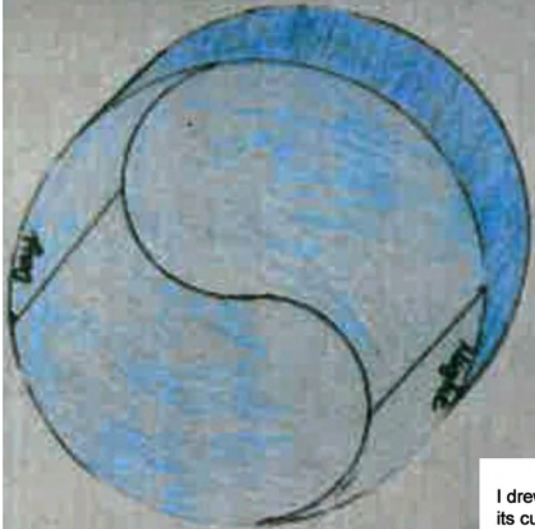
4





5

I found that as I made my model the two bottles didn't fit together as a complete circle



I drew my design in oblique as it shows the volume the bottle has and its curves. I chose to render my design in coloured pencils as it would show the material I would use to create my bottle. My final design would appeal to the target market.



6



	Grade Boundary: Low Achieved
5.	<p>For Achieved, the student needs to undertake development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring design ideas by considering possible alternatives• refining design ideas by considering design details• making design judgements that consider qualities of design ideas, in terms of the principles of aesthetics and function, in response to a brief• visually communicating the details of design ideas in response to the design brief. <p>The student has developed and explored shape and form (1) (2), with some refinement, product design ideas for packaging to contain a bottle (3) (4) (5).</p> <p>To meet the requirements of Achieved more securely, the student would need to show more depth in the development of their ideas. For example, the student could further refine details such as construction and joining methods.</p>

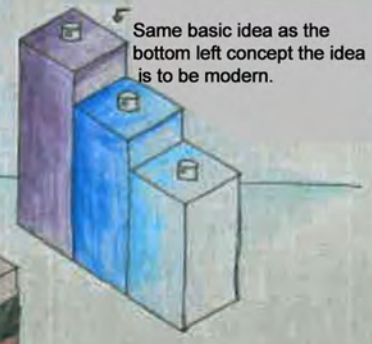
CONCEPTS

1

This design is quite different to all the other concepts but because it has black rails/bars across the top its related to Gaudi's work.



Same basic idea as the bottom left concept the idea is to be modern.



This design is very basic but it can be used for different smells

If you like different colourful bottles then this design is good



This design is good because its very different and interesting and you can place anything in it because theres a square box in the middle to store things ie jewellery



CONCEPTS

2

This concept is based on a building from my research page. It is a basic shape and not good looking



This design is like the top of a church but it is also starting to look like a pencil.



This design has a gothic look and feel, it may be too complex for a perfume bottle. I like the idea of the glass window effect.



This drawing is meant to be like the big windows in churches (stained glass)



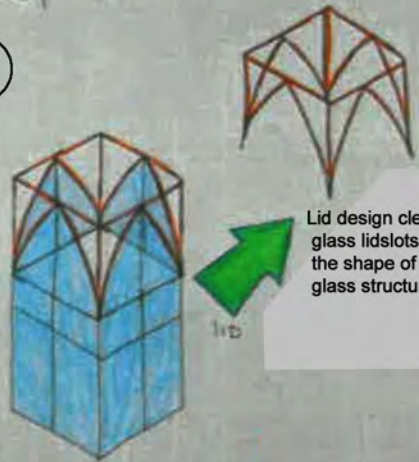
Development

3

Hinges for flaps to drop down and open making it easier to take out bottle. It has a rustic look.



Lid design clear/blue glass lidslots over the shape of the glass structure



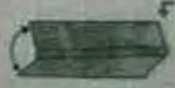
Could use a stained glass look here



Normal light blue glass



I like the idea of using a hinge to make it easier to open and close the box.

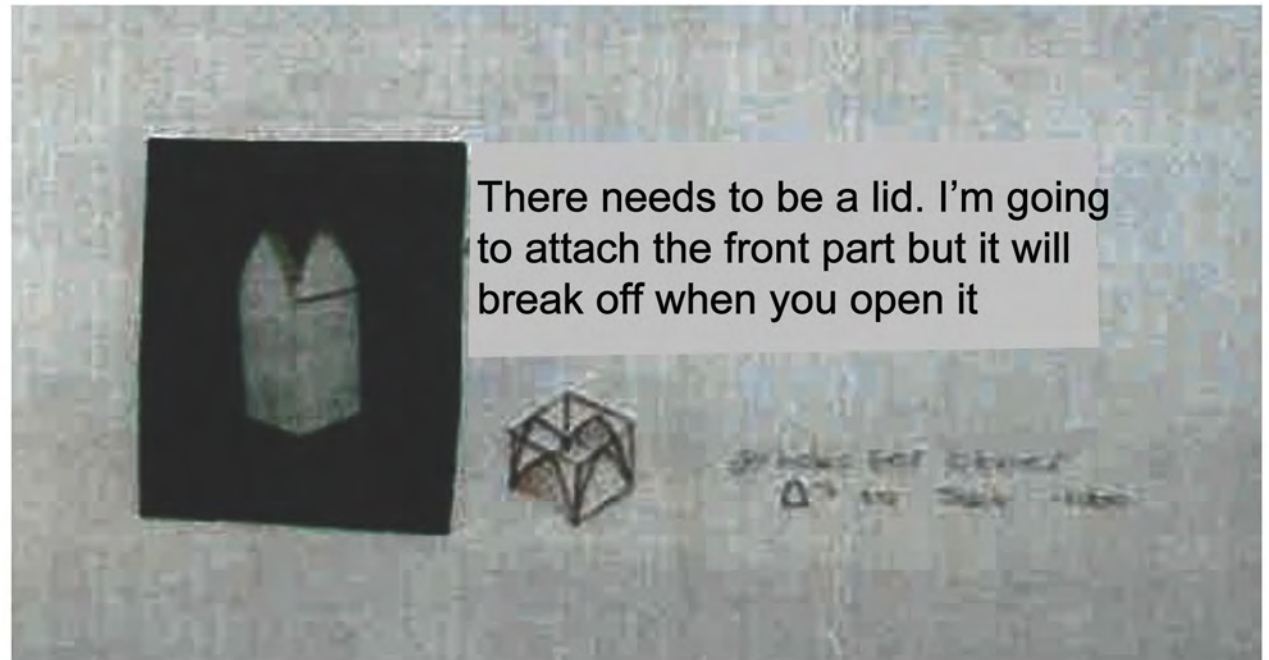
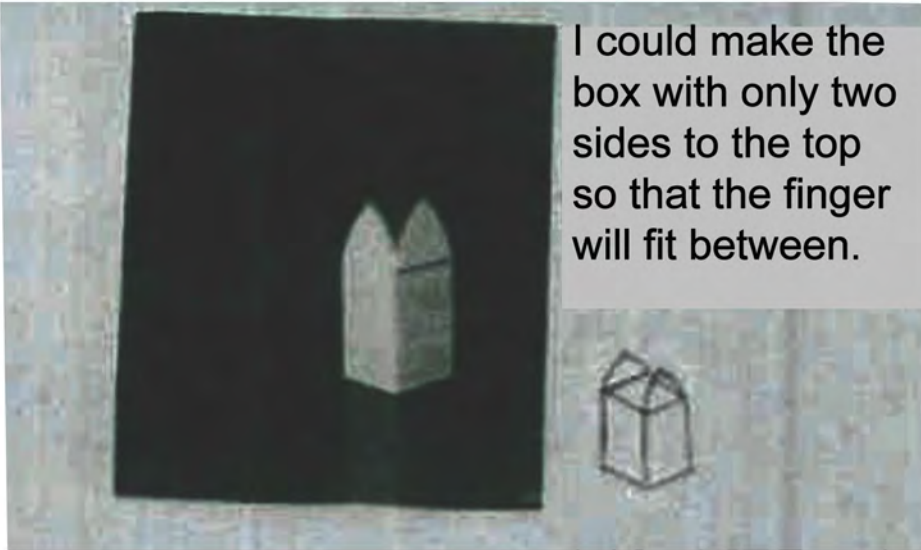


4

I have tested the size of the packaging and would use a bottle the same shape as below. The flaps of the packaging might interfere with the spray jet.



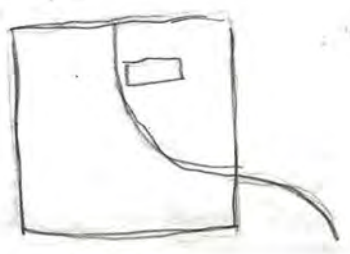
5



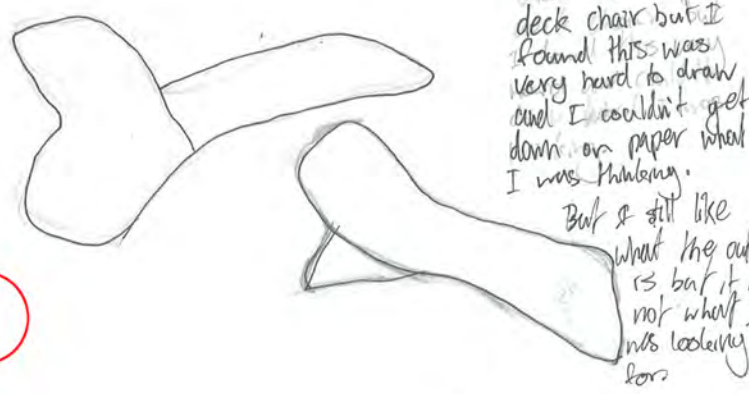
	Grade Boundary: High Not Achieved
6.	<p>For Achieved, the student needs to undertake development of design ideas through graphics practice.</p> <p>This involves:</p> <ul style="list-style-type: none">• exploring design ideas by considering possible alternatives• refining design ideas by considering design details• making design judgements that consider qualities of design ideas, in terms of the principles of aesthetics and function, in response to a brief• visually communicating the details of design ideas in response to the design brief. <p>The student has developed ideas with exploration of the shape and form of furniture (1) (2). There is some refinement of ideas beginning to show, through the use of a mock-up and ergonomics (3) (4).</p> <p>To meet the requirements of Achieved, the student would need to show further development of ideas. For example; the student could consider further alternatives as possibilities and further refine detail such as construction detail, working drawings and/or rendered drawings.</p>

Initial Ideas

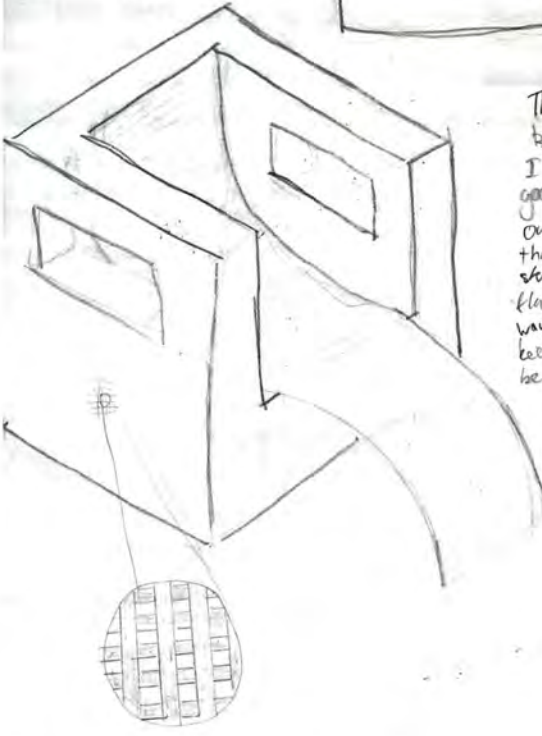
1. Box Chair



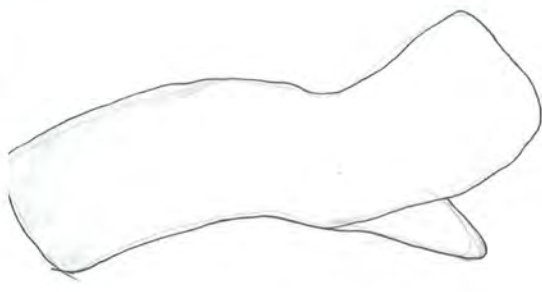
1



I tried to draw a modern deck chair but I found this was very hard to draw and I couldn't get down on paper what I was thinking. But I still like what the others do but it's not what I was looking for.



This chair I like because I think that I would be a really good stylish and durable outdoor chair. I think this chair would be really stable because it has a flat bottom ~~and it's~~. This chair would also be very comfortable because the curves ~~go~~ with the body.



3. Der Rote Chair

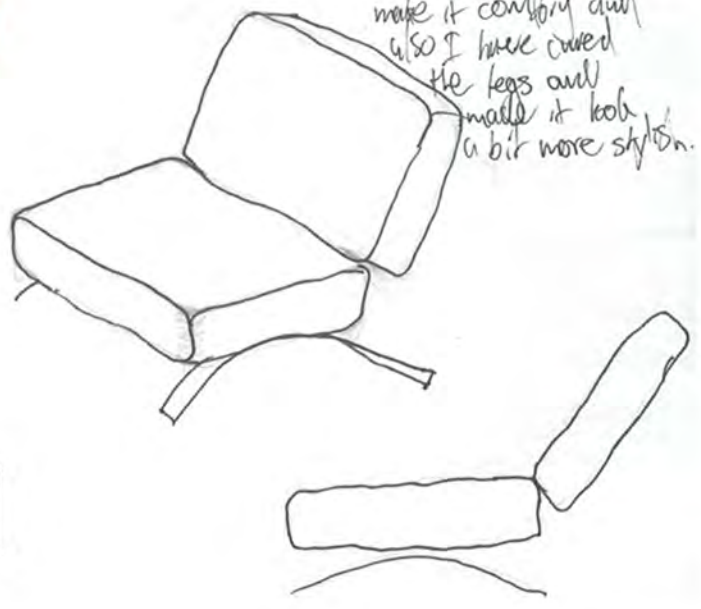
Development



2



I have decided to curve the sides and make it comfy and also I have curved the legs and made it look a bit more stylish.





Mockup!
 In this mockup I discovered and changed a couple of things. One of those things is I discovered how hard it would be to produce and make. This was hard because most of the chair is sort of a box effect and this was very hard to make and get the detail with cardboard.

The next thing I discovered was what type legs I would put on them and this was one of the changes I did in my mockup. Instead of having short and stubby legs I changed it to having a nose/rip side down an effect.



3



In my ergonomics I found that the 1:10 scale man find my chair well and I'd showed we that my chair is also a 1:10 scale because the man fit perfectly.

