

Designing Cardboard and Paper Furniture

In this unit of work, you are to design and make a scale model of a piece of furniture made from cardboard or paper.

Watch the two short videos first:

<https://www.youtube.com/watch?v=P1sO7YXtZVw>

https://www.youtube.com/watch?v=qTDBsHI2_rw

The first part of the project is to find examples of simple cardboard or paper chairs or stools. Try to pick designs that use simple processes and techniques to construct or assemble.

You must complete the following work for assessment:

1. **Collect 5 images** of cardboard chairs or stools. **Annotate** them to describe the most important design features or to explain how you think they have been made or by analysing their weaknesses.
2. **Design and development** work, freehand sketches and annotations to explain your design thinking. (Explain the most important design features or explain how you might make the product). **Complete a minimum of 3 thumbnail sketches with annotations).**
3. **One design option** drawn to scale. Draw your best design solution as a 3-dimensional drawing and make sure you colour it in to make it look as realistic as possible. You can either use SketchUp or draw it in freehand to do this part of the work
4. **A scale model** of the chosen design option (use a scale of about 1:5 or 1:10, depending on availability of materials). The scale model should be made from paper &/or cardboard. You could use other materials if you have them available; e.g. bamboo skewers, twigs, plywood, wire or any recycled materials you can collect. If you need to use glue sticks, staples and sticky tape to attach all the parts together. The main part of the product should be cardboard or paper.

You will need to search the internet for inspiration, collect images that you can use to inspire your design, be creative when thinking of possible design solutions.

- **Joining** – You can use a variety of techniques to join the different parts together. A lot of cardboard structures just slot together or are glued. You can use sticky tape and staples if you find that easier. Papier Mache is also a good technique to try if your feeling adventurous. Follow the link to make a simple glue (paste) using flour and water. <https://www.youtube.com/watch?v=OTKQGMylJoo>

You can either scan or photograph your drawings and scale model. Insert them into a word document. Save the work document using the following file name:

Name_cardboardchair - For example: mark_grech_cardboard_chair

To help you get started I have included two examples of a research that I have annotated. When annotating products, start by analysing the some of the most obvious design factors such as:

- *Aesthetics or Visual appeal (the way it looks)*
- *How it is made – Production processes/how complex or easy it is to make.*
- *Materials – How safe & easy they are to use, availability, environmental sustainability.*
- *Economics – cost of materials, time it would take to make, cost of production (technology etc)*
- *Safety*
- *Human centred design/Ergonomics – comfort ease of use.*

Examples of Annotated Research

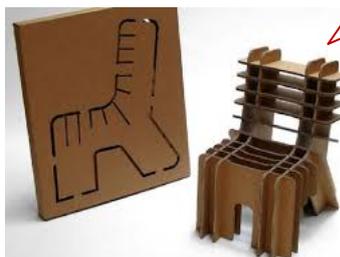


PLUS - This is a very simple design that looks quite strong and stable. It would be quite easy to make by cutting a template out of cardboard and then cutting multiple shapes and gluing them together.

MINUS – It's a pretty boring design to look at and has a very flat seat and upright back rest so it looks like it would be quite uncomfortable to sit on.

The edges look quite square adding to the possible discomfort of the seat. shapes and glue them together

It looks like it uses quite a lot of cardboard so it might take too much time to make and it could end up being very heavy.



PLUS - This design looks quite strong and stable because of the way the individual parts lock together to help brace it. It also looks like it uses minimal materials so it should be quite cost effective, light weight and easy to move around. It could also be easily flat packed for transport. It looks quite comfortable as the design looks like it is moulded or shaped to suit the human body. The designer has used simple lines and shapes to create an interesting looking product.

MINUS – It has lots of intricately cut interlocking parts that would need to be accurately cut to make sure it is strong, stable and safe to sit on. This means it would need a lot of technical skill that I might not be able to manage. I think in industry it would most likely be laser cut so that the designer could produce a lot of them very accurately. This could be an expensive process to make the product.