Cardboard Seat

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- The candidate will have used a range of 2D and 3D graphic and modelling techniques to show their ideas for the table and will conclude which idea best meets their specification through evolving work.
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- The detailed evaluation will relate to the prototype cardboard seat and must contain Evidence which demonstrates that the candidate has predicted important stages in the manufacture,stating how they were overcome. Clear suggestions are made as to the quality of the finished prototype and how it might be Improved. MM 4.1, 4.2

Cardboard Seat

In this assessment project you will produce ideas for a Cardboard Seat and manufacture a model of your idea.

In this task you will undertake the following activities		DESIGN	MATERIALS & MANUFACTURE
Activity 1	Write up a Design Brief for the cardboard seat	**D 1.1**	
Activity 2	Review the main design factors for a seat	**D1.2**	
Activity 3	Sketch out initial ideas Research and sketch how to join and strengthen cardboard . Through graphics and modelling, assess your designs.	**D1.5, 1.6 2.1, 2.2**	
Activity 4	Justify your final design with reference to the design factors and develop a scale model solution.	**D2.3**	
Activity 5	Write up a product evaluation		**MM4.1, 4.2**

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Cardboard Seat

SITUATION

Problem Description Chairs are found everywhere. They come in nearly an infinite variety of designs and are used for many different purposes. Most chairs are made to permanently occupy space until they are thrown away. Since most chairs are made of a variety of highly processed materials discarded chairs or their materials are rarely recycled. The primary factors determining the cost of a chair are its size and the cost of the material it is made of. Workmanship and brand name, style and aesthetics and market also play a part in determining the price.

BRIEF

I will design and manufacture a model of an eye catching and unique seat. This will be used to showcase and display the possible range of designs that could be used in the design of a cardboard seat. The product will reflect the use of using a recyclable material to produce possible replacement for traditional furniture.

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Cardboard Seat

ACTIVITY 1 ANALYSE THE BRIEF

Analyse the design brief by:

- Reading and deciding the most important design factor.
- Write out the design brief
- To help you do this, develop a mind map.

You may wish to use a table similar to the one below to indicate why

DESIGN FACTOR	REASON WHY THIS IS IMPORTANT

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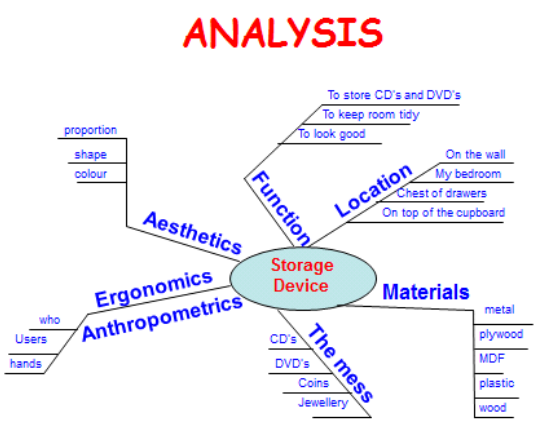
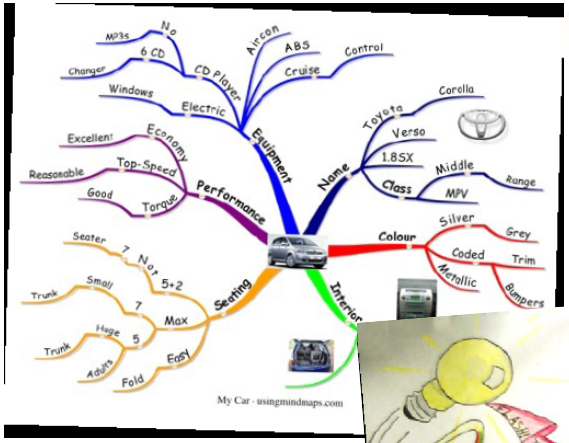
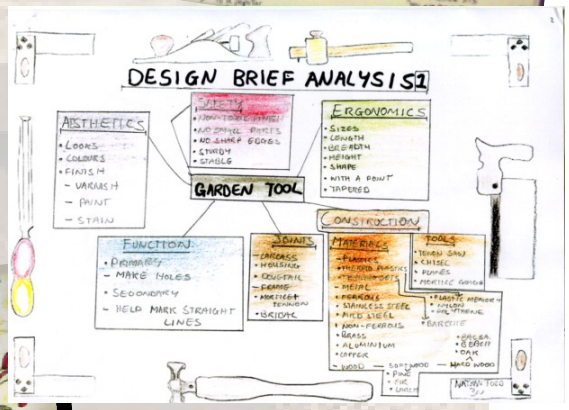
Cardboard Seat

MIND MAP EXAMPLES







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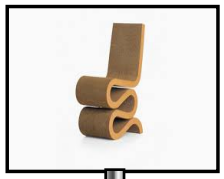
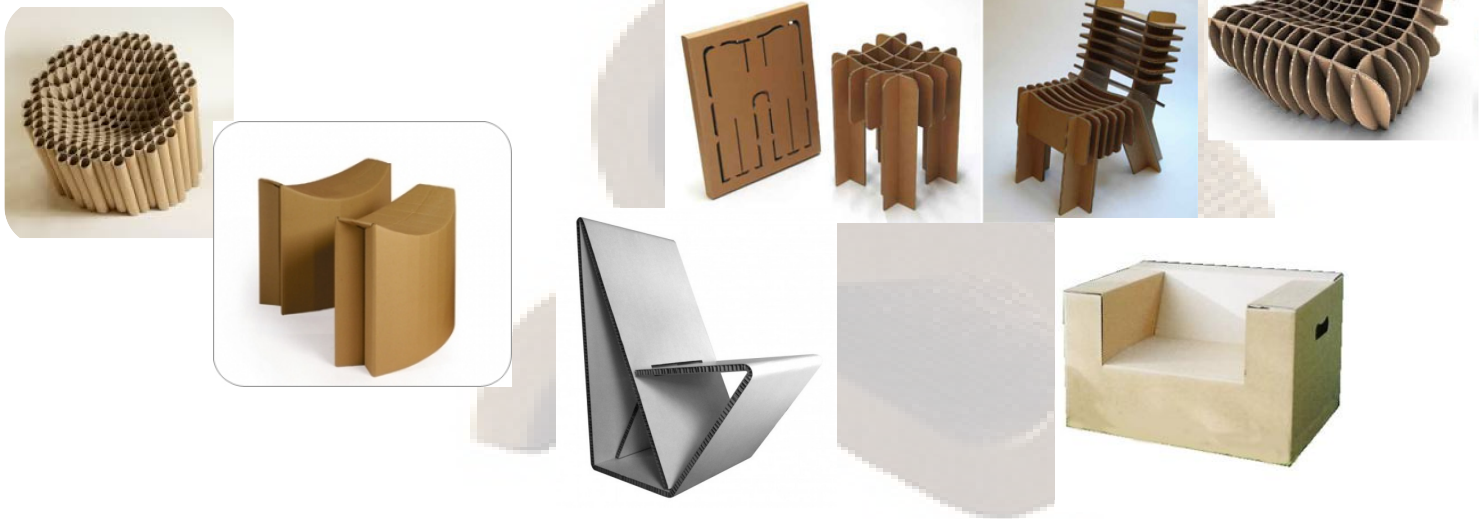


ACTIVITY 2 RESEARCH

Using a range of methods begin to research against your chosen design factors.
To do research into the design factors for the cardboard seat you may use:

- The internet (Product ideas, products on the market, fixing , manufacturing, assembly, materials for sustainability).
- Measure and record (What are the needs for the seat where is the seat to be situated, who is to use it?).
- Questionnaires and surveys (What do people like/dislike about the seat .).
- Data (Ergonomics and anthropometrics).



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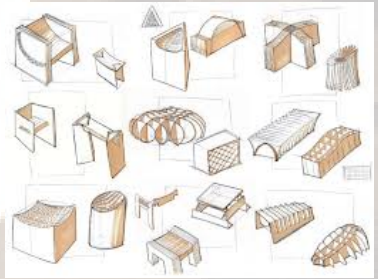
Cardboard Seat

ACTIVITY 3 INITIAL IDEAS

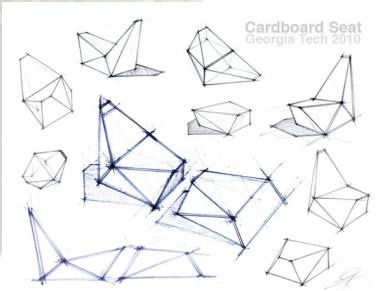
It is now time for you to generate a selection of ideas. You can communicate your ideas using a range of techniques

- Sketching/drawing – freehand and/or technical (orthographic, exploded, perspective, isometric, 2D or3D)
- Presentation drawing – rendering
- Computer modelling - CAD
- Physical modelling - card, paper, plasticine, wood, metal, or plastic

DRAW OR NOTE DOWN HOW THE CARDBOARD MAYBE STRENGTHEN.



Add annotation to show Your chosen, construction ideas, sizes and any other relevant information.



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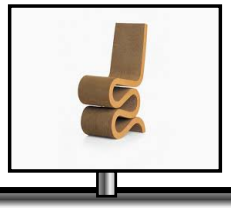

ACTIVITY 4 JUSTIFY YOUR DESIGN

Justify your decisions for the final idea. Design factors should be clearly considered and link your ideas back to the specification.

You should give reason for choosing a final idea and summarise with a conclusion. You can represent your justification using a table or chart support with a written statement.

List of specification points.

Conclusion: summarise your reasons for selecting or not selecting an idea.

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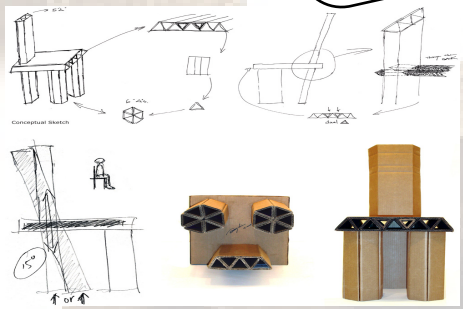
Cardboard Seat

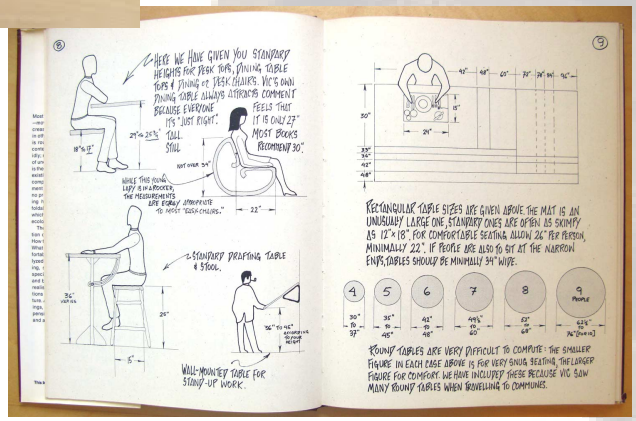
ACTIVITY 4 SCALED MODEL

Create a scale 1 : 6 mock up from your final design idea based on your drawings. The model must be manufactured to fit an ergonome.

EVIDENCE

Photograph the development and your finished model. Note any design faults.





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ACTIVITY 5 EVALUATION

In your engineering notebook record/answer the following:

- Compare your chair to several others in the class.
- Constructively criticise your design or those in the class.
- Identify strong points of your design.

EVALUATE Redesign

In your engineering notebook draw a sketch of an improved design.

What would you do next time? Support your changes or lack of changes with examples from your class experience.

Points to be considered when evaluating.

- What are your thoughts on the final design? What changes would you make next time?
- Are you happy with the material cardboard? / Would you change anything about the cardboard?
- What alterations would you make?
- Did the project take too long to make/ Would this alter the cost of manufacture?
- Is your final solution safe? Could it be made safer/
- Are the building processes you used to make your solution okay or would you make it differently next time?
- Is the solution the right size / shape?
- What are the views of your peers regarding your design?
- Does it work? What changes are required?

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ACTIVITY 5 EVALUATION

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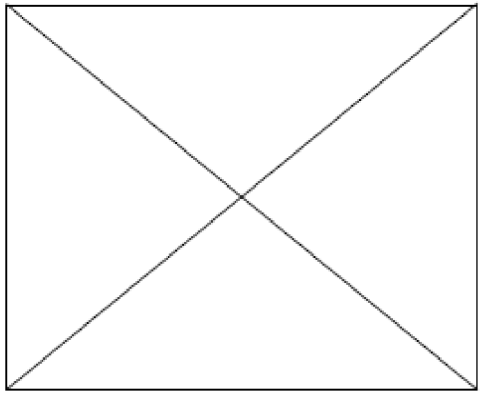

Photograph of model

Changes to the overall shape and size:

Other changes? (Eg ergonomics, colour scheme, texture, finish, appearance, function, cost etc.

After making and testing the model, I have decided that there may be a need for alterations . Changes to the original design.

Changes to the materials to be used:

What I consider to be the good points:

Views of other people regarding my design

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