

# **Year 10/11 GCSE coursework pack**

## **Key tips**

- Use the VLE. Exemplar folders and other useful resources are being put on there all the time (including this pack). It is under Design Technology - DT GCSE - Year 10 Resistant Materials - Enrolment key: material
- Email me your coursework pages or questions for advice on improving it or simply just to print it out. darrensewell@chalfonts.org.
- Look at the mark scheme on the VLE. I can help you translate it.
- See me for advice and help! I am in room 10 every break, lunch, and after school.
- You need to spend time doing coursework outside of lesson time. It is impossible to complete the coursework otherwise.
- Your coursework folder should be roughly 20 concise A3 pages. This sounds like a lot now but it is usually a struggle cramming all the information onto 20 pages. To keep all the work concise we usually use font size 10 and never leave blank spaces on a page. Always ask if you are not sure how to fill a space.

**Remember that time and effort are the key ingredients to achieving great Resistant Materials coursework.**

**Also..... Resistant Materials coursework is 60% of your final grade!!! A fantastic benefit if you find exams a bit daunting.**

## **About this pack**

This pack will help you produce A grade pages using examples of coursework and an explanatory list of what to include on each page.



# Section 1: Task Analysis

This page explains what you are going to do and why. It includes 4 areas to cover. Why not tick them off as you go along:

1. Task
2. Situation/Problem
3. Design Brief
4. Task Analysis
5. Research plan

1. Task - Copy the task you have chosen from the list given

2. Situation/Problem - Why have you chosen this task? Is there a problem with existing products that you feel you could improve? How will your product be different from others on the market? Is there a personal reason why you chose

4. Task Analysis - What are your first thoughts on a number of areas that could include: Aesthetics, Equipment/materials you may need, information about your target market, the theme/style, sizes, safety considerations, cost considerations, important functional uses of the product.

## Task Analysis

A major high street retailer wishes to market a multipurpose, modern style, small coffee table aimed at the first time buyer. The product could include some storage space. Design and make a coffee table for this target market.

### Situation

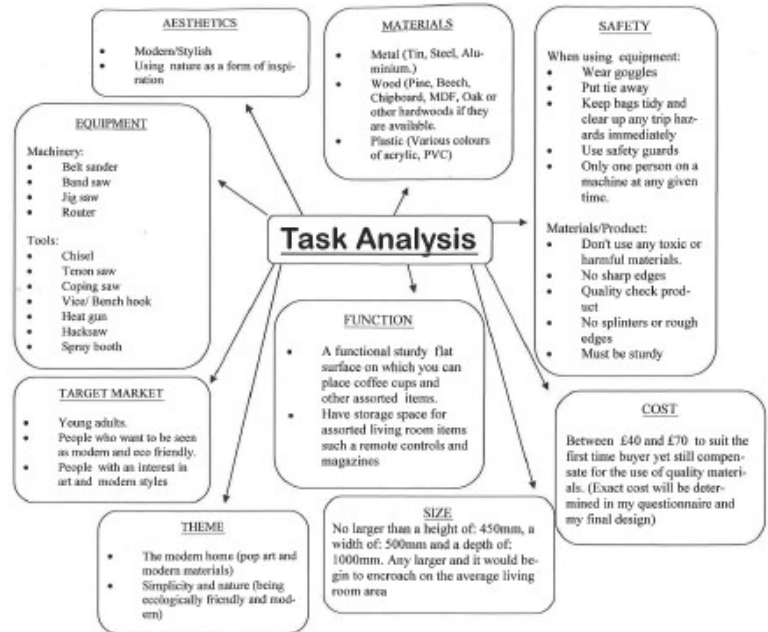
The idea of a table specifically used for serving hot drinks or putting down one's cup between sips predates the coffee table in Europe by some time. In Britain in 1750 tea drinking was at the height of fashion and there was increasing demand for tea tables. Other forms of tables in use at this time which could be placed near to a sofa were called occasional tables, end tables, and centre tables.

A furniture company Green Dragon Furnishings UK has contacted me. They have seen a recent gap in the market of coffee tables for the young first time buyer and they also wish to expand there market for the younger customer. They need their product to be multipurpose with a modern style to fit in with the modern home. They want it to be aimed at young adults their main target market.

I personally also feel there is a large gap in the market for a modern style coffee table aimed at young adults. The existing coffee tables on the market are wooden tables which are plain and unimaginative and generally aimed at the older generations. I would like something with a modern style made from a variety of materials.

### Design Brief

I will design and make a multipurpose coffee table with a modern style. It will be aimed at young adults who have just left home. It will be made from a variety of materials. It will also include storage space. This product needs to be affordable for the average young adult and there for I aim to price it at around £50. I will have to consider this when thinking about the materials I use in my product.



Information I require	Sources	Purpose of information
Existing products	Internet catalogues, shopping websites and shops	To see what is already available and to prevent me from re-inventing a solution
Sizes	Client interview	To make sure my product meets my clients needs
User opinions	Survey	To see what people want so I can incorporate this in my design
Materials and process	Text book	To make sure I make my product from the right materials; to make it safe to make for me and to use for the user and fully working.
Client opinions	Client Interview	To make sure I meet the specific needs of the client
What is to be stored	Survey and client interview	To specify sizes and any other details of storage items

3. Design Brief - This always starts 'I am going to design and make.....'. Make sure you have included all points mentioned in your chosen task. Make sure you have talked about your target market. Make sure you mention the main features of your product.

5. Research plan - This table states what information you would like to find out, how you are going to acquire this information, and how will this information help you.

## Section 2: Research - Product Analysis

This is the start of our research. We need to research to understand various aspects of our product area and our target market. This page will help you to understand many aspects of your chosen product by studying existing examples in detail. This section has 2 parts to it:

1. Analysing the product
2. What you have learnt

1. Analysing the product - Take photographs of a product that is similar to what you are designing. Give some basic retail information about the product. Now type into google 'accessfm'. Use the information you find on ACCESSFM (an easy product analysis system to follow) to thoroughly analyse the product. Go into as much detail as you possibly can!!! Remember to have clear pictures of the product and use the text book to gain information on things such as materials and its properties.

**AQA - Design and Technology Product Design (3D—Design)**

### Product Analysis

I have decided to disassemble this lamp from Ikea because it is simple and adjustable. I wanted to do this so that I had a better understanding of how a lamp is constructed, the mechanism inside it and how I could put together my own lamp to make it adjustable. I also disassembled this lamp so I knew which aspects to avoid for example, if it was too heavy or the joints were too stiff and how to rectify them. Finally, I wanted to find out which materials I could use in my own design and how certain materials were used and why.

### Dissassembly of my lamp

First I took apart the base of the lamp and found a small transformer inside that decreases the voltage going to the bulb. It was connected via two cables, one from the plug and on to the head of the lamp.

The wire was kept connected to the base by the use of a cape that screwed onto the base. This is a good aspect of this lamp because if you needed to change the transformer or simply clean the inside, the wire and base would stay stuck together.

I then took apart the stem of the lamp and found it very easy to remove. It was held in place by my two small screws. So far I have found that holding all the pieces together is very simple and only screws are used. This means that it is quite cheap to manufacture.

### Dissassembly of the lens cover

When I took the head of the lamp apart I found that there was a very small bulb, only 3 watt. The reason why it seems so bright is because of the heat proof surrounding metal which is placed inside the plastic casing. Not only does it stop the plastic from getting too hot but it also acts as a reflector and makes the light seem much brighter than it is. I am going to try and incorporate this in my own lamp design because it would make the light more energy efficient as less power would be needed to power the bulb.

### Sketch of Lamp

### Conclusion

I have found that the good points of this lamp were the reflective and heat proof cover inside the head of the lamp and also the small bulb which meant it would use less energy. The bad points were that the joints became very stiff over time and the cable was far too long and became a health and safety risk.

I also found that there was no earth which is a safety hazard because if an electrical shock should happen, the electricity would not cut out. I would have to find a way of making my lamp safe and free of hazard.

### Above the line analysis

This lamp is manufactured by injection molding (for the plastic covers of the head of the lamp and the base). It is mass produced and aimed at a low cost market. It is sold in Ikea for a retail price of £3 however I have found out that it would roughly cost £1.20 to make (it would be less but because of the transformet used inside it becomes more expensive, also because the parts have to be made in different places transportation costs are added). I found that when trying to move the lamp and adjust it, it was very stiff and was difficult to position because of the joints used so in my design I will try and make the lamp easy to move and adjust. Lastly I found that the cable was very long and had to be wound up. This could be a health and safety hazard.

Chalfont's Community College
Charlotte Hazell
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Page 2

2. Conclusion/What you have learnt - Explain what you personally learnt from this page. Have you acquired new knowledge about sizes or do you have a better idea of the price range of your product area for example. What features analysed on this page would you consider to take forward to your own de-

## Section 3: Research - User preferences

We need to understand what type of products our target market likes and dislikes. We can do this by giving them a selection of products that you have chosen and like, then asking them what they think of these products. This section has 4 parts to it:

1. Create a moodboard
2. What client likes and dislikes
3. Conclusion

1. Create a moodboard - From the internet, gather at least 10 pictures of products that you like and relate to your product. It could be simply the aesthetics, function, or colours that you desire about the products. Place

2. What the client likes and dislikes - Show your client the moodboard and ask them what they like about the products and what they dislike. Ask them to mention things such as the aesthetics (colours, trends etc), func-

### User Preferences



#### What Client Likes:

My client says they like the more modern looking chess sets and the novelty chess sets. They say they like them because they are trendier looking and also look more fun as they are all new and different and haven't been seen before. Also it turns the chess set not in to a chess set but also a fashion statement or an ornament. This is because my TGM is teenagers so they are going to care more about what there chess set looks like than adults would.

#### What Client Dislikes:

My target market group said that they dislike the traditional looking chess sets (the Staunton design) because they had seen it so many times that it had lost its originality and if they were buying a chess set they would want it to be different to what other people have. They also said that they disliked the Simpsons chess set (top left) as the colours were just too vulgar and were an eye sore and also the pieces looked a little too similar.

#### Conclusion:

My target market group said that they much preferred new modern designs too they old traditional design. They also said that they liked the novelty chess board as it was a bit of fun and would be nice to own but not to play on as it would be more of a show piece. My target market is looking for a modern and original design for there chess set which is aesthetically pleasing and something that can be used to decorate a room with. They don't want something that stands out too much with very bright colours as they think it would be ugly and also vulgar. What they do want is a classy, modern and sleek design which no one has seen before.

ALEX MCDONALD

AQA GCSE RESISTANT MATERIALS

2011/12

3. Conclusion - What did you learn from the comments that your target market gave you? Has this influenced your design ideas concerning your own product? Make sure you explain your answers to these questions making reference to the information provided by your client.

## Section 4: Target Market Profile

This section will give a visual display showing what your target market is interested in and what stereotypically defines them. You can then use it when you are designing to help you choose appropriate colours, styles, shapes themes etc. Section 4 is made up of 5 parts:

1. Introduction
2. Interview
3. Where would the product be used?
4. Style preferences
5. Facebook profile
6. General information on target market
7. Conclusion



2. Interview - If you could ask them 5 questions that could help you to come up with ideas for your product what would they be? What would they store in their table, for example.

5. Facebook profile - simply fill in the blanks for your stereotypical client. Copy and paste an example from the

1. Introduction - Tell me why you are doing this page (see

2. General information - display as much information as possible which defines who you are selling this product to. What are their interests, what do they spend their money on, where

### Research : Client Profile and Key Features

On this page I will identify the key characteristics of the type of person who will end up using my coffee table. This will influence how it is designed and ensure I am able to design something they will want. This will be based upon the research I have done into the target market of my coffee table

#### Interview with target market member

Interview a member of your target market and ask them a series of questions to find out about the budget and material preferences.

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#### Information about where the product will be used

Get some pictures of the typical place your product will be used and analyse the photos.

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#### Profile of the style preferences of the user

Get some pictures of the types of products that your client likes but don't just focus on what they already own and what they agree to owning. How could this inform your design?

### Client Profile

Having talked to a range of people about the coffee table I am designing I have decided upon a target audience for my product the profile I have created is based upon the average person who I am designing for and isn't one specific person. I will test my designs and product on people who fulfil this profile.

**facebook** home search social net invite help logout



**Information**

**Account Info**  
 Name: John Smith  
 Network:  
 Last Update:

**Basic Info**  
 Relationship Status: Married  
 Looking For: A Coffee Table  
 Birthday: 16<sup>th</sup> June 1980  
 Hometown: **Rating**

**Contact Info**  
 Email: [www.com](#)

**Personal Info**  
 Political Views: Labour  
 Favorite Music: Alternative & Indie  
 Favorite Movies: Alice, Fargo  
 Favorite Books: Androids dream of electric sleep  
 About Me: I work in the city, I have just bought my first home and I am looking to buy some new furniture. I have looked in the shops but find the existing coffee tables boring.

**Friends**  
 54 friends [See All](#)

**Groups**  
 in 7 groups. [See All](#)

[Like Art Deco Design](#)  
[Like Sustainable Design](#)  
[Like modern and new materials](#)

My Client is a new home owner he lives with his partner and is concerned about the environment. He recycles as much as he can and likes to buy products that are made from recycled materials.

They buy most of their furniture from IKEA because it is cheap but would prefer to have furniture which is more bespoke and not the same as that owned by everyone else.

My Client likes modern design but also is fond of the Art Deco design. They don't have a preference for materials used in the products they buy other than where possible them being eco friendly. They would prefer a piece of furniture which is multifunctional as they have lots of stuff they need to store. They would be willing to spend up to £50 on a new coffee table but for that money would like to have a creative and unique design finished to a very high standard.

Student Name:
Design Technology
Teacher:

3. Where would the product be used? - Get some pictures of the typical place your product will be used and

7. Conclusion - what are the main things you have learnt from this page which could influence your designs. Explain what you may now

4. Profile of the style preferences of the user - Place as many pictures as possible on your chosen segment of your A3 page that stereotypically portray and represent your target markets likes, hobbies, colours, styles, fashions etc.

## Section 5: Specification

The specification page is a list of design criteria that your product must meet. It will give you a focus to begin designing and generally put all the things that you have learnt during your research onto 1 A3 page. You can do this page using a 3 column table with the headings 'Category', 'Specification', and 'Justification'. There are 3 areas to include within your Specification page:

1. Facts
2. Justification
3. Research

1. Facts - Tell me all about that area concerning your product. For example, for Function you will need to tell me how your product works, how people will use it, what would they use it for, what other things could people do with it etc. Remember you can never be too obvious or write too much, and

2. Justification - State why your product needs to do that fact. For example, for Function, if making a bird house, why does there need to be a hole big enough for a Robin to get through? Why does it need to be waterproof? Why does it need a place to house food/water? It sounds obvious but there is no point in doing something if you can not think of a reason why you are doing it. This will, therefore, help

3. research - Make sure you use your research findings to justify as many of your points as possible. For example, in Aesthetics, don't just say I have chose the colour black for my product; explain that you found most products that my target market like in your target market mood board were black because my target

# DESIGN SPECIFICATION

	Specification	Justification
Target market	My target market is art enthusiasts in their 20s (possibly university students) to 30s. My product will need to be non-conformist and creative to suit my target market. I will have to make it original and bold to catch the attention of the audience.	It will have to be original because I am advertising this product in a museum shop and the sort of people purchasing in there are looking for arty memorabilia for their home of their trip.
Size	My lamp will need to be about 300-500mm in height, and around 200-400mm wide. I came up with the sizes by looking at other products already available (in my market research/ product analysis)	My lamps size will need to fit into my customers house and work well around other products, for example a table. Also, because a person will need to switch the light on and off it has to be the right size to fit around their hand.
Safety	To keep my product safe, the electrics will have to be fully working with no aspects that can go wrong. I will need to do a brief safety check on my product when its finished.	I will need to be very careful and check the electrics because there are a lot of potential hazards that could endanger the clients wellbeing like electric shocks, for example.
Function	My product will need to produce light when turned on and off by a switch.	Because the products purpose is to produce light, I will need to make sure it for fills this purpose well.
Durability	My manufactured goods will need to last for at least 2 years without damage.	This is because the target market will not want to invest in a product that is not durable and reliable. So the product sells, the materials will need to be hard wearing.
Manufacture	I will need to manufacture all my work myself apart from the electrics, which I will install but not manufacture.	I am not going to make the electrics because I can't get the equipment but the rest of my product I will manufacture myself.
Materials	I will use either Pine, MDF or Plywood for my product, and possibly some plastics.	I found out about these resources during my research on materials. I will pick one once I have an idea in my head of what I want from my final ideas to so I know its best suited for me to manufacture with.
Aesthetics	The aesthetics will need to be a modern shape and have happy, eye-catching colours to draw as much attention to it as possible.	From my research, I can see that my target market wants all of these qualities in the aesthetics of the product. Also, these are properties that fit into my design era and the appearance (the general look ) of my museum shop I am selling in.
Cost	I will need to keep the price of my manufacture practically low by using materials that fit the bill for what job they are doing, and that are not too pricey.	Depending on the materials I use, the manufacturing price will vary. I will need to use reasonably priced products so that my consumer is not put off purchasing my lamp due to the price. I know this from one of my questionnaire questions.

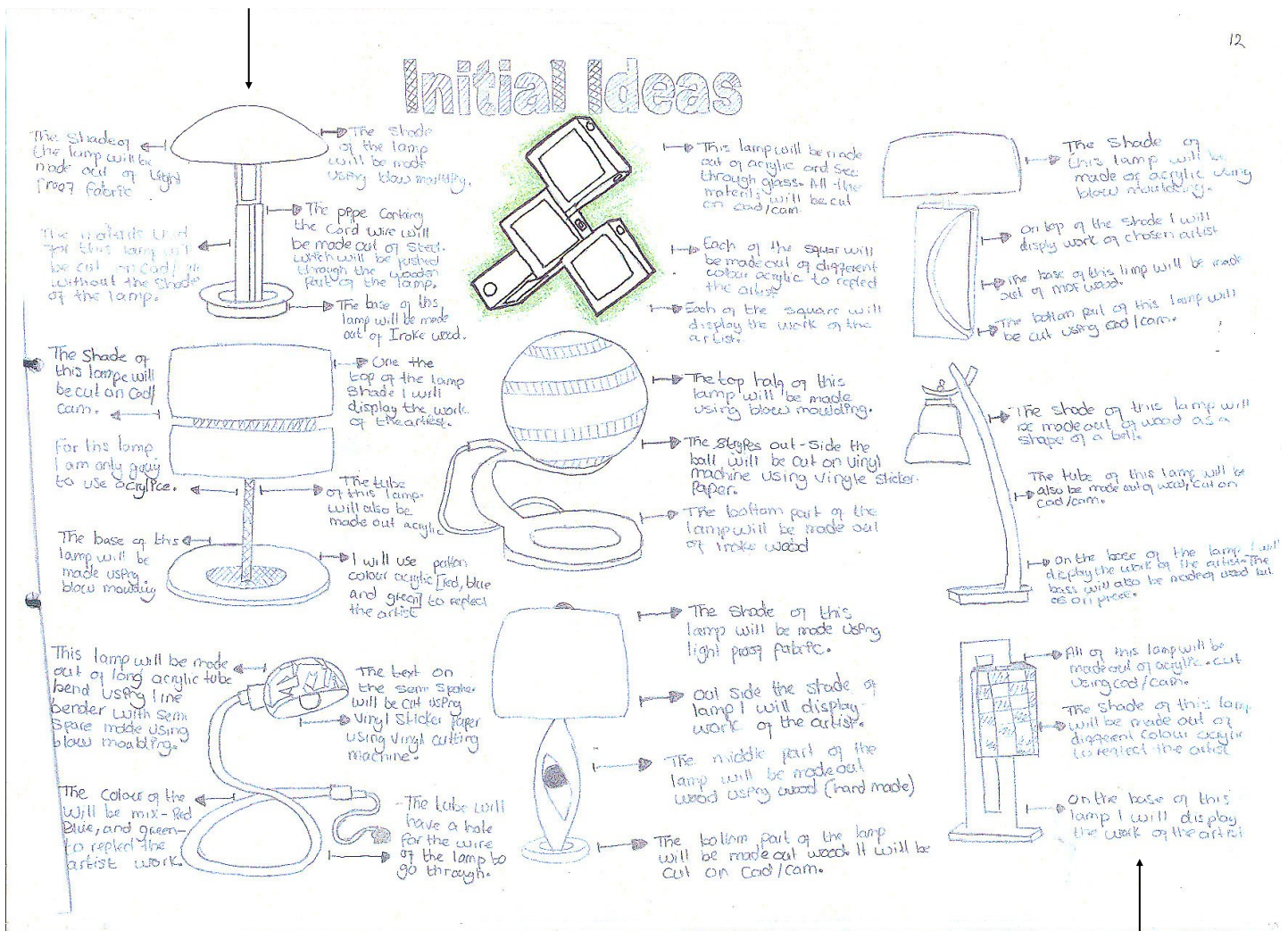


## Section 6: Initial Ideas

This is where we start putting onto paper our ideas for our product. This is a chance to show the examiner your imagination. Usually the drawings are 3D pencil rendered sketches, however, you can use colour and use a computer drawing program if you wish - everyone has their own talent and style - so use it! Ideally you should use 2 A3 pages which include a total of 10-12 drawn ideas. Use isometric grid paper if you need help to make your drawings look proportionally an accurate 3D drawing. Section 7 should include 2 features:

1. Sketches
2. Annotation

1. Sketches - Your sketches should be as different from one another as possible. During section 6 we will choose one of the ideas and tweak it. Make sure you are producing ideas that you can make and are not bigger than a side table or an adults stool. You will only get a limited amount of material from the school and storage space in the school is limited. You need to make sure each idea relates to your specification. It is no good saying you will produce a stool in your specification if most of your ideas are chairs! Draw close



2. Annotation - Drawings are simply not enough to explain your idea, you need to use notes to explain it, as you may know what the drawing is showing but the examiner can not read your mind. Use arrows pointing to the idea and talk about its special features, what makes it different from the other ideas? Where did your inspiration come from and where can that be seen in the design? The positives of the idea, the negatives of the idea, how does it meet your specification and how does it not meet your specification? What do you think of the idea? What materials do you have in mind? Any blank spaces on the page should be taken up with annotation - you can never have too much.

## Section 7: Development

Developing and modelling your design proposals is a major part of your coursework. This section is worth up to 32 marks from a total of 90 marks for the whole project (making is also worth 32 out of that 90 point total). In this section you will have to clearly communicate your design ideas with other people. The idea of this section is to use one or even a combination of your initial ideas to develop your design into a near finalised version of your product. Every single element of your product should be finalised by the end of the development section. You will need to do some more research, ask your teacher, and more than likely perform another interview or a questionnaire to reach conclusions during your development. There are 8 areas to include in your development section.

1. Developing the idea/aesthetics (shapes, colours, materials, function)
2. Researching into the materials, finishes and components used
3. Social, moral, environmental, and sustainability issues
4. Developing the construction of the product (how all parts fit together)
5. Developing the dimensions of the product
6. Developing through model making (Full size, CAD and scale models)

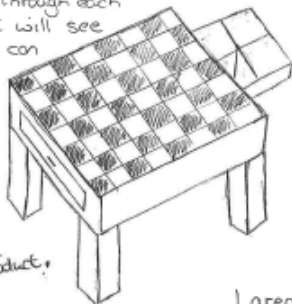


1. Developing the aesthetics (shapes, colours, finishes, textures) - This page is a great example of developing the aesthetics of a product. He is displaying his options using drawings and then discussing the positives and negatives of the solutions to come up with the best suited design, evolving his product as the page progresses. He then delves deeper into the decision as he begins to talk about the different options of construction, dimensions and manufacture of the part in question.

Notice Zach has asked the opinion of others. This will gain him more marks! Try to mark sure they are your target audience.

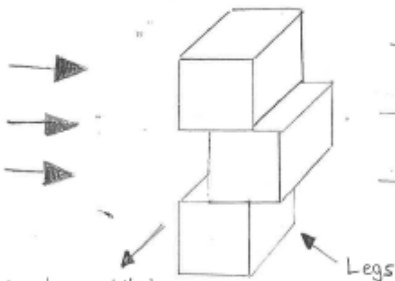
## Developing your idea.

This is my original design. Through each stage I will see what I can improve.



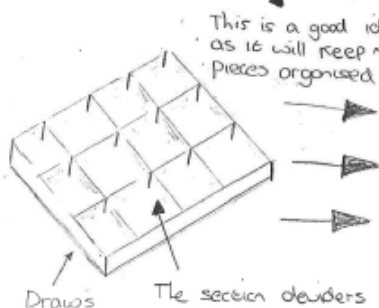
This is a good idea as it is different and will draw attention to my product.

Kate: Age 16  
To improve your design I believe you should change the shape of the legs as they are to original.



My legs will be made out of pine as it is a strong wood but is easy to cut through. It is also quite cheap which would make my overall product cheaper than others.

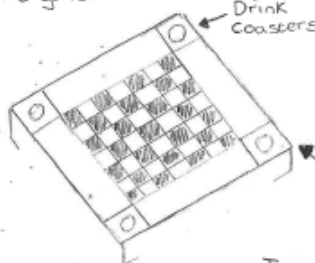
Laren: Age 15  
To improve your design you should have more separate sections for each playing piece in the draws.



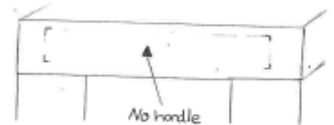
The section dividers inside my draws will be MDF as it is very cheap and the inside of the draw doesn't need to look as good as the

This is a good idea as it will make playing my game more comfortable and enjoyable.

Bradly: Age 15  
To improve your design I believe you should have space to put your drinks without restricting you playing the game.

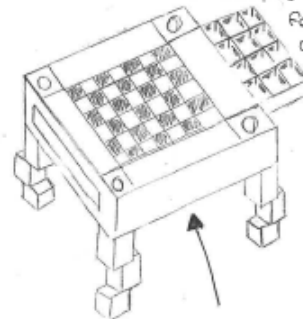


Sam: Age 15  
To improve your design you should make the draws push latch so it doesn't look like there are draws.



I am going to use veneers for my drink coasters as it looks good but also feels good.

Improve design - I think this improved design is well improved as it isn't as original as other chess tables and the improvements will benefit the player. For example the drink coasters.



I am going to use varnish as a finish to my product as it applies easily and has a good finish to it. Very attractive.

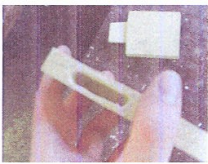
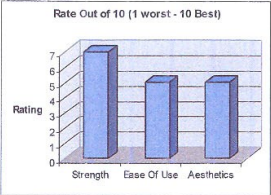



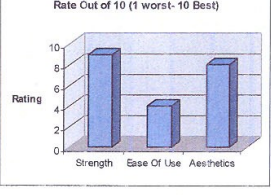



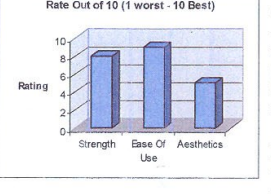
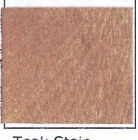
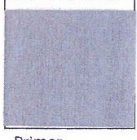

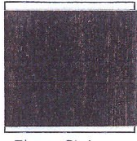
This is another great example of a compact page. He has virtually progressed through the whole of the development stage in one page! Read how much his idea has developed from the start of the page to the end of the page! It's like a mini story!

6. Developing through model making (Full size, CAD and scale models) - Below Kaarithik has used digital photographs to show that he has practiced a variety of wood joints full size. This practice will really help when he comes to making his product. Then, using his own criteria, he has evaluated the 3 wood joints using bar graphs to effectively display his results. He goes on to evaluate his graphs using a written evaluation.

Remember, it is always nice to introduce a page stating what you have just done and what you are about to do and why?

**BOX DEVELOPMENT (MODELLING AND TESTING)**

Now that I have productively produced an array of ideas for my chess box, I will be exploring different methods of joining my box. Here I will cover different joints and look at the difficulty in crafting the joints as well as their visual appearance and their strength to hold.

 <p><b>MORTISE AND TENON</b></p>	 <p><b>Rate Out of 10 (1 worst - 10 Best)</b></p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Category</th><th>Rating</th></tr> <tr><td>Strength</td><td>7</td></tr> <tr><td>Ease Of Use</td><td>5</td></tr> <tr><td>Aesthetics</td><td>5</td></tr> </table>	Category	Rating	Strength	7	Ease Of Use	5	Aesthetics	5	<p>The Mortise and Tenon joint although quite strong, it can be hard to make. The joint will take up a long time to make and will be very difficult to make perfect.</p> <p>Unless made perfectly and the tenon will not fit snugly into the mortise, therefore making the box look untidy.</p> <p>It isn't a very visually appealing joint. When made perfectly it will look butt joint.</p>	 <p><b>Natural No Finish</b></p>	 <p><b>Clear Gloss Varnish</b></p> <p>This gloss varnish isn't very noticeable, but in the light there is faint shimmer, producing the effect of a smooth shiny surface, not easily stained.</p>
Category	Rating											
Strength	7											
Ease Of Use	5											
Aesthetics	5											
 <p><b>DOVETAIL JOINT</b></p>	 <p><b>Rate Out of 10 (1 worst - 10 Best)</b></p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Category</th><th>Rating</th></tr> <tr><td>Strength</td><td>10</td></tr> <tr><td>Ease Of Use</td><td>4</td></tr> <tr><td>Aesthetics</td><td>8</td></tr> </table>	Category	Rating	Strength	10	Ease Of Use	4	Aesthetics	8	<p>The dovetail is one of the strongest joints for boxes. As for the shape of the joint, as long as it is tight clean finish, the joint will hold for a very long time: a lot longer with glue or some type of adhesive.</p> <p>Although difficult to make a clean perfect dovetail joint, it can be done with jig.</p> <p>This joint is more attractive than other joints. It gives the appearance of great craftsmanship.</p>	 <p><b>Oak Varnish</b></p> <p>This looks natural and is a more modern look to teak. The stain is cheap.</p>	 <p><b>Teak Stain</b></p> <p>This is the same as the Teak Stain gloss except it has no sheen. It is also not protected from moisture.</p>
Category	Rating											
Strength	10											
Ease Of Use	4											
Aesthetics	8											
 <p><b>DOVEL JOINT</b></p>	 <p><b>Rate Out of 10 (1 worst - 10 Best)</b></p> <table border="1" style="width: 100%; text-align: center;"> <tr><th>Category</th><th>Rating</th></tr> <tr><td>Strength</td><td>8</td></tr> <tr><td>Ease Of Use</td><td>10</td></tr> <tr><td>Aesthetics</td><td>5</td></tr> </table>	Category	Rating	Strength	8	Ease Of Use	10	Aesthetics	5	<p>The dowel joint is simple easy to make joint. It's quick and easy and also a very strong joint.</p> <p>By using a drill, I can easily make a 90 degree hole that is tight enough but still allows a dowel to get in. Holding it tightly, thus being a strong joint.</p> <p>Although a simple joint, it isn't very appealing as it looks as though the two slabs of wood were just stuck together.</p>	 <p><b>Teak Stain Gloss</b></p> <p>Very natural looking colour, the surface gains a shiny surface creating a quite traditional effect.</p>	 <p><b>Primer</b></p> <p>Used with spray paint, allows a smooth even finish. This is used as an undercoat, stopping water from soaking in.</p>
Category	Rating											
Strength	8											
Ease Of Use	10											
Aesthetics	5											
			 <p><b>Spray Paint</b></p> <p>Spray paint can be found in any colour and looks un-natural as it is not a normal colour for wood. Although it has an even finish, leaving no brush marks.</p>	 <p><b>Ebony Stain</b></p> <p>This type of stain comes from an African hardwood. Used sometimes for expensive furniture, it's traditionally used in chess sets.</p>								

Kaarithik Kumar Rajan
11a
Mr Flanagan
Design technology
Resistant Materials

2. Researching into the materials, finishes and components used - Here Kaarithik has cut squares of veneer (1mm thick pieces of wood) and experimented with different finishes on them. He has then evaluated each one giving a little information on the finish. This could have been improved by finishing the page with a conclusion stating which finish he was thinking of using and why.

3. Social, moral, environmental, and sustainability issues - Throughout your development pages you must show the examiner that you have thoroughly considered a variety of Social, moral, environmental and sustainability issues that relate to your ideas. I have made it as easy as possible for you by giving you a series of questions to answer which are on this page. Be as open minded as possible and ask your teacher for help. For more information look in the AQA Resistant Materials text book:  
 Social influences page 66, 67  
 Moral implications page 68, 69.  
 Sustainability and environmental issues page 70,71

Social influences: Will your product improve the quality of peoples lives? Is it better, faster, newer, smarter, greener than its competition? What section of society has demanded your product? Will it please your target market? Will it please people who are interested in recycling and looking after the environment? Would your target market find it stylish?

6. Developing through model making (Full size, CAD and scale models) - George has found faults in his design when modelling so he has drawn the new improved idea and explained what has changed.

GEORGE CONSTANT

## Prototype Page

**Interview:** Mr Sewell thinks I could use even less material, this would make less of an impact on the environment.

- Luke Bird says I need to make storage space more accessible, for example access through the top of the table into storage.

This is an improved version of my prototype, because it includes more storage. I added in the drawers at the front to make the product more usable, I also think the drawers improve the aesthetics of the product. But one downside is the drawers use more material, so I will have to analyse my problem.

This is another improvement, I have cut out square blocks in places where material is not used. This makes my

This model is good because it can be flatpacked and easily stored. So, it doesn't have to be permanently in

**ENVIRONMENTAL AND SUSTAINABILITY**

I think my product is quite environmentally friendly because it would be made from a natural wood which is sustainable. Wood products are also long lasting this makes it even better, also this product could be recycled at the end of its life.

This prototype is also good because the length of the table can be adjusted which makes the product more practical.

Ask your target market what they think of your ideas at various stages of the development process. This will gain you extra marks!

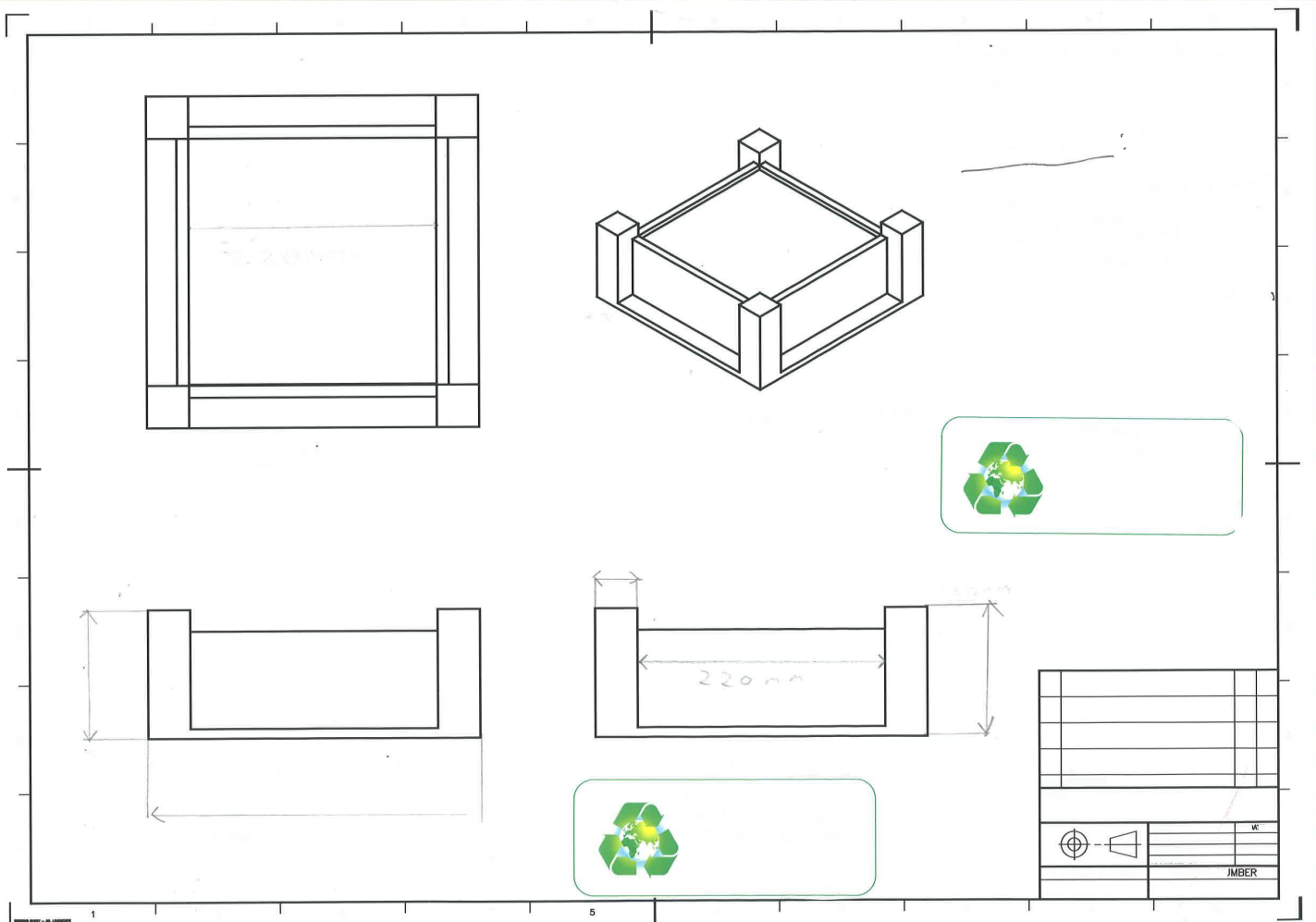
Moral implications: Does your product have the potential to harm or offend anyone or any group of people in anyway? Does the design exclude certain groups of people? How could you develop your product to change that? Does it have to be that way to cater for the primary target market? Could the design have a bad influence on anyone (think of the arguments with violent computer games for example)? Is the product sustainable? Could the manufacture of the product have any negative effects on the environment? Are materials used efficiently and effectively (no parts on the product not needed)?

Environmental and sustainability issues: Will your product last a long time or is it more of a disposable product? If broken would the product be thrown away or could you mend/replace simple parts? Are the materials from sustainable sources (wood from the FSC for example)? Would huge amounts of energy be needed to manufacture and transport the product (flat pack would be better!)? Can the product be recycled/reused at the end of its life? How long do you suspect it to last for? Can the materials be recycled at the end of its life?



6. Developing through model making (Full size, CAD and scale models) - Produce a CAD drawing of your design using Solid works, Pro desktop, 2D design, or another software package.

5. Developing the dimensions of the product - You can just about see that this student has thought about the overall dimensions of his design. Get as many dimensions written down of the products parts as possible as this will help you when you come to make the product.

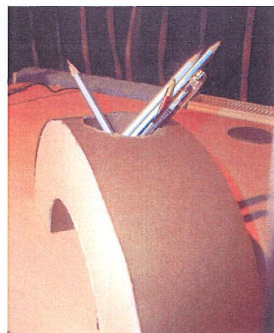


6. Developing through model making - Make sure you take photographs of the various sides of your prototype model (at least one of the model being used for its purpose if at all possible). Then tell the examiner what you learnt by making the model.

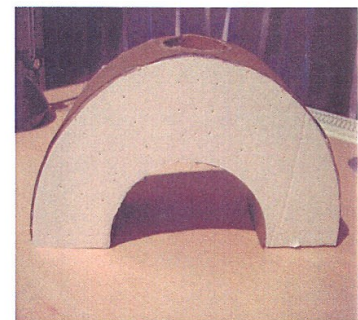
A great introduction to the model making section.

# Development - Models

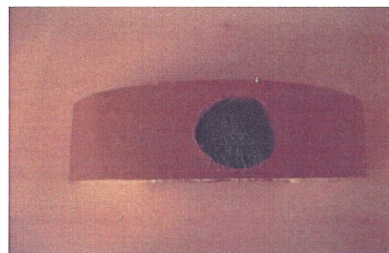
As part of my development I made a model. I made a model so that I could for see possible faults with my design. By making a model it gives you a chance to see which parts of the design look good and function correctly, it also gives you a chance to see which parts of the design need improving or changing.



I am currently happy with the shape of my model. However my stationery holder is slightly off centre. So I will have to be more careful when fitting it on my real model. I have also decided that although my models top only spanned 15 cm. I do not wish for the full size version to be any more than 20cm, even though it was a half size model.



From my model I have realised that, I only require one stationery holder on the top. I believe this because it looks better with one large one than two small ones (I know this because I drew the possible holders on with a compass).



From my design I have realised that my stationery holders must be made before my top, so I know of the size of the hole that needs cutting. As I was having trouble getting it to fit this is consequently why the stationery holder is slightly rough around the edges. However on the model the stationery holder is around 8cm deep and on my finished version I would like it to be a depth of around 14cm. So that the pens and just stick out the top slightly.

6. Developing through model making - Jamie produced a really professional model using foam board and thin card. It was made at a 1:1 scale so he could actually test the measurements, functions, and constructional elements of the product. If you read his analysis, Jamie learnt a selection of really important dimensional, functional, and constructional details that helped his final product get the A grade it deserved - that was the idea of the prototype - during the manufacture of his product he was both faster and made less mistakes than most others in his class!

Foam board is great for solid flat surfaces and is can be easily cut with a craft knife. Thin card is great for coloured sections and/or parts that have curves in the design.

## Section 8: Planning for making and cutting list

A plan for making table is a concise and clear way to communicate how you are going to make your product. Use the headings and structure used in the example. In this section you must include:

1. Task and process
  2. Materials and equipment needed
  3. Health and safety/risk assessment
  4. Quality control
  5. A cutting list
2. Materials and equipment needed - what materials and equipment are you going to need to complete this task?
4. Quality control - What checks will you do during the manufacturing process to make sure your product fits/looks professional? Examples of quality controls can be: double check measurements with a ruler, use a tri square to make sure corners are at 90 degrees, have edges been sanded enough to give a smooth finish?

*Plan for Making*

This table shows a plan of how I intend to make my product, taking into consideration material used, health and safety issues, risk assessment and quality control measures at each stage of production.

Task and Process	Materials and equipment needed	Health and safety Risk Assessment	Quality control
1. Before I am able to start the making of my product, the first step will be to purchase all materials needed.	I will need to buy: 4 metres of black chiffon 4 metres of black satin back crepe 1 metre of black pearl organza 1 pack of snap fastenings 2 8" invisible zips 1 16" invisible zip 1 pack of mixed silver and black beads Black binding 3.5 cm in width	I will need to make sure that the materials are transported safely from the fabric warehouse to college. There is low risk of materials getting damaged during transportation as I will keep all fabrics in the bag to protect them.	I will check for any damage to make sure the fabrics I am purchasing are of the best quality possible. I will need to make sure I get the correct amount of fabric for each part.
2. Lay out the two main materials Lay pattern pieces according to lay plan and pin into place	Satin back crepe Chiffon Pattern pieces – bodice front and back, panel for shorter skirt extension, panel for longer skirt extension. Pins	I will need to make sure the large work surface I use to lay the material out on is clear and will not damage the material in any way. Care must be taken when using the pins.	The material will need to be folded in half and secured with pins at the edges to stop it from moving when the pattern pieces are being laid on top. The pattern pieces must be put in place according to the lay plan to avoid wasting any material. The material must be flat without any creases, to ensure the correct shape is ready to be drawn around.
3. Draw around the pattern pieces in tailors chalk Remove pins and all pattern pieces from the fabric Cut out each part.	Satin back crepe Chiffon Pattern pieces – bodice front and back, panel for shorter skirt extension, panel for longer skirt extension. Tailors chalk Fabric shears	Care must be taken when removing the pins. The fabric shears must be used in the correct way to avoid any harm.	The pattern pieces must be drawn around carefully to make sure they are correct when cut out. The pieces must be cut out well by carefully following the lines drawn in tailors chalk. Special care must be taken when cutting out the chiffon as it is very slippery. The bottom side of the fabric shears should lean on the table, so that the shears are steady and each line is cut as straight as possible.
4. Once all the main parts are cut out, lay them into 3 separate piles: The bodice front and back cut in satin back crepe, chiffon and the lining. The shorter extension cut in satin back crepe and chiffon. The longer extension cut in satin back crepe and chiffon.	All the cut out parts	I will need to make sure I lay each pile of cut fabrics on a clean work surface to avoid them getting ruined.	I will organize them into piles of the parts that need to be sewed together. This will stop me from making mistakes and joining the wrong parts together.
5. I will now make the shorter skirt extension. First I need to: Join the four panels cut in satin back crepe together (leaving a side open 8" down from the top for the zip) Join the four panels cut in chiffon together (leaving a side open 8" down from the top for the zip)	The four panels cut in satin back crepe The four panels cut in chiffon Pins A sewing machine – including black thread and black bobbin	Make sure the correct needle is being used and the machine is turned off when changing the thread, bobbin or threading the needle. I will make sure that the foot presser and all wires are out of the way so people do not trip over them and hurt themselves. Make sure the sewing machine is used with care and in the correct way. Care must be taken when removing the pins.	I will check the right setting is being used on the sewing machine. I will make sure I use the same length stitch throughout so that the stitching is consistent. I will make sure the correct side of the materials are being used at all times. Special care must be taken when sewing the chiffon as it is slippery and very hard to work with. I will ensure that the pins are removed as the fabric is fed through the machine so the machine does not get jammed or damaged. I will make sure the seam allowance on every side is sewn in a straight line to ensure each piece turns out exactly the right shape and size. I will do a back stitch every time I start and finish sewing to ensure the seams are strongly joined together. I must make sure that the stitching doesn't pucker the material (especially when sewing the chiffon) as it may ruin the overall look of the skirt.
6. Pin together the chiffon and satin back crepe shorter extensions.	The short skirt extension made in satin back crepe The short skirt extension made in chiffon Pins	Care should be taken when handling the pins. Pins should be put into the fabric facing away from the hand to avoid any injury.	When joining the underneath to the top layer I must make sure that the seams on both fabrics meet up so the product looks neat.
7. Pin on the binding around the top, and then sew on.	The short skirt extension Pins Blinding Sewing machine – including black thread and black bobbin	Care should be taken when handling the pins. Pins should be put into the fabric facing away from the hand to avoid any injury. I will make sure that the foot presser and all wires of the sewing machine are out of the way so people do not trip over them and hurt themselves. Make sure the sewing machine is used with care and in the correct way.	I will use binding to neaten the top edge of the skirt. The stitch that secures the binding to the fabric is done on the right side of the fabric so it is important that it is straight because it will be seen. I will use a back stitch when I start and finish sewing to ensure the binding is securely attached to the fabric.
8. Pin the invisible zip in the gap that is left open down the side of the skirt extension, then stitch into place.	The short skirt extension Pins 8" invisible zip	Care should be taken when handling the pins. I will turn off the machine when changing the foot to the zipper foot that is required.	I will make sure I pin the zip in the right place before I start to stitch it on. I will make sure that when sewing the zip I sew as far into the groove as possible so that when finished the zip is inside the seam and appears 'invisible'.

1. Task and process - explain the task and how you are going to do it.

3. Health and safety/risk assessment - What safety equipment is needed during this process? What potential risks are involved in this process?

5. A cutting list - Normally you will be asked to produce a cutting list so members of staff can cut the big parts for you. Remember to also include the smaller parts you produce as well. A cutting list looks like this.

part						
Side of box	4	440		0		
(bottom)		440	440	18		MDF
(top)	1	440	440	20		pine
legs	4	500	40	20		pine
Draws	1	300	300	18		MDF

## Section 9: Making your product

The making section is worth up to 32 marks from a total of 90 marks for the whole of the coursework. To succeed in the making section you must try demonstrating your skills by using as full a range of techniques and processes as possible. Remember, Quality and Accuracy are the key to a great manufactured product! The deadline is now fast approaching so make sure you use your time as productively as possible - in and out of school. You should be coming into lessons with a plan of how you are going to best use the time you have in the workshop as there is only so much you can do out of lesson time. Remember, things **will** go wrong, you will need to redo things, you will need to practice things, you will need to rethink the way you make your product. All this takes time so aim to finish ahead of schedule because there are always ways to improve your product and gain extra marks.

Examples of GCSE Resistant Materials products are on the VLE



## Section 10: Testing and Evaluation

Okay, so the product is made, the finish line is in sight, last push before you are finished! This section is to test whether your final made product has been successful or not. This section is made up of 6 parts:

1. Interview
2. Photographs
3. Compare with competition
4. Modifications
5. Evaluate against specification
6. If commercially manufactured

1. Questionnaire/interview - Ask a minimum of 6 questions in an interview style to a person in your target market or ask the opinions of a small group of potential purchasers. The questions should tease out answers that will determine whether your product is suitable for the target market. Below, this student has even interviewed the owner of a shop that would potentially sell her product. Remember to analyse all your results!

### External Evaluation

#### Gathering opinions from potential buyers

I asked a set of questions to females of my target market to find out their opinions of my product.

**Do you feel the idea is innovative?**  
All the potential buyers that I asked said my product was very original and there isn't a dress currently available on the market that has a similar function.

**Do you think the dress fits the purpose to be worn at formal events?**  
The majority of people that I asked said that the colour makes it more suitable for evening wear and some commented that the longer extension gives a more elegant and expensive look to the dress. A few people mentioned that the knee-length extension and the bodice would be suitable to wear in the day to work for example.

**How easy are the styles to change?**  
I showed them photos of each fastening and attachment and explained how they worked.

The majority said the fastenings look very easy to attach and remove the frills and beading as they just snap in and out of place. They also liked the idea of having the skirts and bodice separate as this is easier to change than if there was a fastening there.

**Is it well aimed at the intended market of students?**  
Most of the people I asked agreed, but said it could be worn by women of all ages as well as young students. One person commented that the plain dresses were suited better at a slightly older age group, but the attachments keep it young and in fashion.

**Would you buy this product if it was sold on the highstreet?**  
Just over half the people answered yes, which means my dress could be a success if sold in stores. A few people said it would depend on the cost for whether they would buy it or not. Some people said they wouldn't buy it because they didn't think they would get use out of all the attachments.

**What do you consider as a reasonable price for this product?**  
I received very mixed results for this question so it is hard to come to a conclusion on a suitable retail price. The prices they mentioned ranged from £50 to over £100. The majority of people said they were willing to pay a higher price than what they would spend on a single dress because of the attachments that transformed the look.

Overall I think I got positive feedback from potential buyers and they agreed my product met my initial design brief.



#### Visiting a shop that sells similar products

'Sera' in Chalfont St. Peter is a shop that you can hire or buy women's evening wear from. A range of dresses from cocktail styles to full length gowns are available, so I thought it would be appropriate.

I brought my prototype into the shop along with photos of it being modelled. I explained to the manager my initial design brief and what I intended to do, then asked for her views on the final outcome.

I asked for her immediate thoughts when the product was first showed to her and she said:  
*"Very well put together for someone who hasn't made a dress before. The idea is imaginative and the choices of attachments are great."*

I then asked if she considered my design to have a market opportunity.

*"Yes, I believe that there is a gap in the market and your product would be successful. My customers tend to hire dresses rather than buy as they know they will not get that much use out of it and it seems a waste because most dresses I sell are charged at a high price. But, I think that they would be more willing to buy your dress as you have included a number of ways that it can be changed to create a different look."*

Lastly I asked what I considered to be the most important question: what parts of my product do you think could be improved?

*"You could maybe have more beading on the attachments piece to make the design stand out more?"*

*"You could attach a lining to the inside of both skirts to give the appearance of a neater finish?"*

*"Darts could be added to the bodice to make it slightly more fitted."*

*"You could even give the customer the choice of removing the chiffon layer, so a completely different look is created with just the crepe layer being used."*

I feel I got a positive response overall and I found the improvements that were suggested very useful. By identifying the weaknesses I am able to present modifications that are required for my one-off prototype.



2. Photographs - make sure you include photographs of your product in different angles, but most importantly, photographs of your product being used for its intended purpose e.g.: A desk lamp - someone working under its light. Remember to comment on the photographs and explain them to the examiner.

**Evidence of actual testing**

The photographs on this page demonstrate how the product meets some of the specification criteria mentioned on the previous page.

- All styles are appropriate for wearing to formal events.
- The photos show how the product offers 9 different multi-wear options – making it good value for money.
- Each photo shows how the attachments can be added or removed to create a different look.
- The customer is able to style the dress to suit their body shape.
- You are able to see how the fabric drapes well.
- I fitted my product on a size 10 model so you can see that it fits this size nicely.

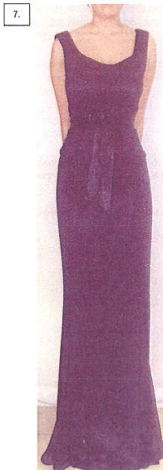


**Photo 1:**  
Bodice  
Knee-length extension  
Satin waist tie (tied at the front)

**Photo 2:**  
Bodice  
Knee length extension (worn over the bodice and higher up)  
Satin waist tie (tied at the front)

**Photo 3:**  
Bodice  
Knee-length extension  
Frill attachment

**Photo 4:**  
Bodice  
Knee-length extension



**Photo 5:**  
Bodice  
Long extension  
Beaded attachment

**Photo 6:**  
Bodice  
Long extension  
Satin waist tie (tied at the back)

**Photo 7:**  
Bodice  
Long extension  
Satin waist tie (tied at the front)

**Photo 8:**  
Bodice  
Long extension  
Frill attachment

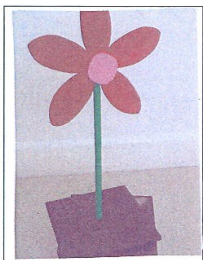
**Photo 9:**  
Bodice  
Long extension

3. Compare with competition - Cally has produced a great table to evaluate how her product compares to a rival product. Make sure you evaluate the results you have gained from the comparison.

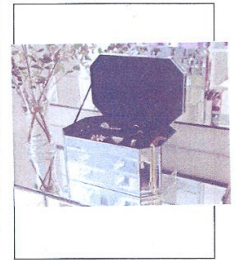
Remember to always introduce the page by stating what you are going to do on this page and why.

## Testing and Modification

**Aim:** I am testing and modifying my product to find out if the project I did was successful.



Average score: My Product										Question in line with specification.	Average Score: Existing Product									
10	9	8	7	6	5	4	3	2	1		1	2	3	4	5	6	7	8	9	10
		✓								Is it suitable for my target audience?										✓
✓										Function – does your product do what it is meant to do?										✓
			✓							Aesthetics – Does your product look as good as you expected it to look?								✓		
✓										Materials – Did you use the correct materials for your product?										✓
			✓							Is your product environmentally friendly?						✓				
		✓								Have you thought about Safety and Quality Control?										✓



**What changes did you make to your final product during making and why?**

During making my product I made a few changes to my design. The first change I made was that instead of having 7 petals on my flower I only used 5. I did this because in my final design I decided what size I was going to make them. However, when I came to cutting the petals out I realised that 7 petals would not all fit around the edge of the centre of the flower. So I decided to do 5 instead. Another change I made was I changed the length of the stem of the flower. I made it shorter as it looked better and stood up straighter.

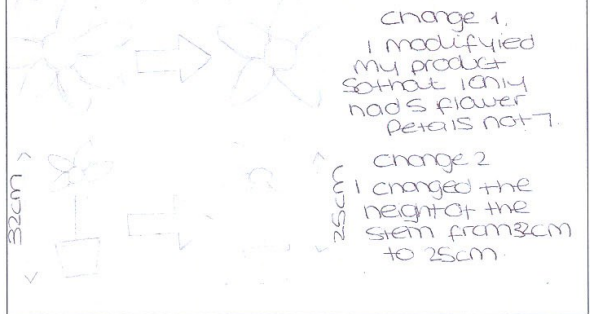
**What would you change if this was to be commercially sold?**

**Is your product to be mass, batch or one-off production?**

If my product was going to be commercially sold I would change how the flower fitted together. I would make it so that it was cut out on CAD/CAM as one piece instead of cutting out the petals and flower parts separately. This would make it quicker and easier to produce for companies and therefore I would recommend they used batch production as they would be making a large amount of copies of the same product. Subsequently, when I made my jewelry box I used one-off production.


**Conclusion**  
In conclusion I felt that testing and modifying my product was an important part of my project. In order to make sure my product functioned correctly and also to sort the changes and modifications I did to come up with my final product.

**Sketch the changes you would make to your product here.**

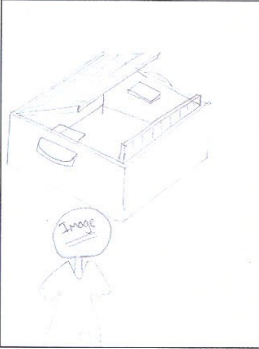


It is always a great idea to conclude the page stating what you have found out and how it has effected the product/outcome.

4. Modifications - This section is very important because it shows that you have learnt from your mistakes (everyone makes them!). Use diagrams and annotations to explain what changes you would make to your product if you were to make it again. This could be practicing joints more, changing certain colours, shapes or textures, the size of parts, or even a complete redesign of your product.




Introduction:



The lid just rotates not doing the motion of sliding down

The component that hold the board from falling in has been moved inside and just support one side

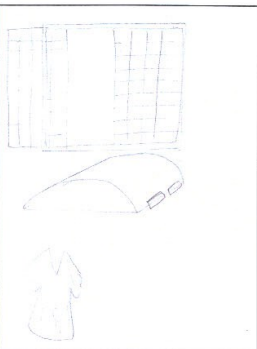
The pieces lost the character need, due to not having time to produce them and make it so that they are interchangeable



Instead of rotation the board can slide out leaving the storage space

A protect will be placed to protect the board and can have a handle so can be held like a brief case.

3D piece to give a more futuristic and appealing design



DESIGN CHANGES

- My box was not totally aesthetically pleasing, it can be vastly improved. To do this I could give the box an even coat of varnish and sand down the edges of the box to give it a more smooth and attractive look. Also I could have worked more on the motion of the lid, taking time and making prototypes before the final product, which would have taken away the use of filling the inside of the box with wood filler, tarnishing the aesthetic qualities.
- The box board/lid was a futuristic idea, but needed to be completed and made well. The pieces however were not futuristic as they did not use the equipment today's technology has. The pieces could be made 3D, replicate the look of the characters.
- I needed more time to work on the motion of the board to meet my final design making it more futuristic and also spend more time researching methods of creating 3D pieces. Also spend time making various prototypes of different components.

MATERIALS CHANGES

- In my opinion I used the correct materials for all parts of my chess set. I could have used a thicker sheet of plywood, for the board, so that when drilling a hole for the dowel, I would not split the wood. This would have made it easier to make the rotation component as well as the proposed design idea.
- The weight of my chess set, although relatively light, I still could have used materials that make the box much lighter in weight, which would make it easier to carry, but also may make it less durable.
- The use of paint on my chess set will result in a wider variety of colours. Though the box will have colours it will not maintain the wood effect needed for my design. Also the paint will chip away over time, and be difficult to get even coats of paint without leaving any paint streaks.

CHANGES FOR THE USER

- To make the design more appealing to the target market, I could have designed it with more of the theme in mind. This would make the chess set more appealing as it resembles the media that the target market enjoy. The pieces should resemble the characters more or the theme more thus resulting in it to be more appealing to the target market.
- The product could have had more advanced functions such as an electronic timer implanted into the set. Also the motion of the lid could have been motorised to enable effortless lift of the lid/board.
- These changes would make the box heavier and increase the sizes, due to the added components. Due to the increase of weight, this will affect the ease of use for the user. Making it difficult to move with and store. The increase in size will make the box more difficult to store in practical places, such as drawers, shelves and in bags.

INDUSTRIAL MANUFACTURE

- During the manufacturing process to insure I did not waste any materials, I could have measured the materials more accurately and with more care. By doing so it may have enabled me to not have wasted time in re doing parts of the box which were do to me measuring incorrectly thus making the cut material disproportionate to the other materials.
- When cutting the materials I could have cut out the measured materials with more care and patience thus aiding me to have cut more accurately. By doing so I would have not needed to re cut the materials thus speeding the process and keeping me with the schedule. Also it would have made the product of a much higher quality, as the components would neatly fit together without gaps.
- Once the product was assembled, I sanded and planed the box which allowed me to give the finishing touches. But due time constraint I rushed this, and quickly smoothed the box and sanded the insides; forgetting to sand away the marking that were on the box.

During industrial manufacture, we could use assembly lines for the pieces which would be made via industrial sized laser cutters. The modified version of the pieces would use injection moulding to create the pieces and assembly lines would allow the defaults to be thrown to be recycled.

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11a
Mr Flanagan
Design Technology
Resistant Materials

5. Evaluate against specification - Using all the specification points, write down if you met that point, how well did you meet that point, why did you not meet that point, and maybe say whether the specification point was relevant to your product now you have manufactured it.

## Testing against Specification

I have listed the main specification criteria and commented on how well my final product meets this.

The crosses in the brackets (+) indicate the strengths that prove to successfully meet the specification, while the dashes in the brackets (-) indicate negative points where my product has not quite met the specification.

'The product will be appropriate to wear to a formal event.'

(+) The colour, style and choice of material for my product make it appropriate for a formal event. Black is associated more with evening wear as opposed to day wear because it is more of a smart colour. The style is suitable, especially the floor length extension and the beading attachment as they give more of a dressed up appearance. The fabrics used to make the product, consist of chiffon, satin back crepe, pearl organza and satin which all give the dress a luxurious and expensive look.

'It will suit more than one occasion.'

(+) The product includes multi-wear options which make it suitable for different occasions. The bodice when put with the floor length extension and the beading transforms into an evening gown. The bodice when put with the knee length extension and the frill attachment transforms into a cocktail dress. In addition the knee length extension can be worn over the bodice and secured with the bow waist band to transform into an above the knee style suitable for clubbing or a party. All the attachments that create each style are easy to use and change over.

'The product will reduce the amount of money that gets wasted on formal clothing.'

(+) Because of its choice of multi-wear options the customer is getting good value for money. There is no need for them to constantly purchase a new item every time they go out, as they are able to change the look of this dress with the added features included.

'The cost of the product should be kept as low as possible'

(-) It was expensive to produce my one-off prototype so this could be seen as a negative. However I feel I needed these higher priced materials because they were of better quality and they helped create the expensive look for my dress that I intended.

'It will be suitable to wear in autumn and winter months.'

(+) The materials used make the dress suitable to wear in colder months as the double layer of fabric provides warmth for the wearer. The colour, being a dark shade like black also makes it suitable for these seasons.

'The material must be lightweight soft against the skin, and drape well.'

(+) All materials used, chiffon, satin back crepe, organza and satin are lightweight and comfortable to wear as they do not irritate the skin in any way. The chiffon and satin back crepe drape well as you can see when used to make the skirt extensions.

'The size of the dress will be to fit a standard size 10.'

(+) The measurements used to make my pattern pieces were based on a standard size 10. I fitted the dress on a size 10 model who matched these measurements as closely as possible and made adjustments according to her body, so anyone who is of a size 10 will be able to wear my product.

'The manufacturing of the material and the product should not harm the environment in any way.'

(+) The making of my product involved the use of a sewing machine and overlocker, so did not have a great effect on the environment.

'The styles of the dress should suit most body shapes.'

(+) There is a choice of different styles that can be worn. For example if the customer is not happy showing off their legs the longer extension can be worn or if the customer wants to cover up their chest area fully the beaded attachment can be added. The choice to include the bowed waist detail was to give the dress more shape and fit the body better.

'The dress will have added detail that will be detachable.'

(+) The dress includes three different attachments, all of which can be attached and removed when desired. The bow waist band can be tied around the bodice, the frilled detail and the beading can be secured to the lining with poppers.

(+) Another strength of having added detail is that it draws the attention away from the separate bodice and skirt extensions so the dress appears as one piece.

'The fastenings must not be visible.'

(+) All fastenings used cannot be seen. The invisible zip is sewn into the seam and the poppers are included in the lining of the bodice.

'All stitching and adjustable features must be strong and secure.'

(+) I used a back stitch every time I started and stopped sewing to ensure that the stitching would not come loose and come apart. The adjustable features include strong fastenings so they are secure when attached.

'The dress must have easy to follow aftercare.'

(-) The chiffon material used for the top layer of all main parts, is very delicate and should be hand washed to avoid causing any damage. This method is more time consuming for the products intended target market of student who will most probably not have time to wash their clothes this way.

6. If commercially manufactured - This may involve you doing a little extra research or asking for the help of your teacher to assist you in completing this section. Firstly, you need to decide whether your product would be mass produced, batch produced or be a one off hand-made item. From there you can look into the different methods of manufacture needed to make a product to this scale of fabrication. Would it be made in a factory or workshop, using CAD/CAM machines or hand tools? Where would it be sold? Is it something that consumers would want? What parts will need to be changed and how so it makes commercial production easier? Try working with a friend who is producing a similar product when completing this section .

### Potential and Modifications for Commercial Manufacture

#### Potential for Commercial Manufacture:

From carrying out my initial research and the questionnaires I carried out once my prototype was finished, I feel that the multi-wear dress does have commercial potential. My dress offers customers a number of designs incorporated into one product, with the different attachments available that transform the overall look. I think it is a well thought out and developed idea and has been produced at a good quality standard. Although I feel my product has potential, there are some improvements that could be made to the prototype before considering a large scale production.

After the modifications had been made the product could be produced on a mass scale and sold in packs. The pack would contain the bodice, two skirt attachments and three other detail attachments. The customer could then buy an additional pack which contains different strap and sleeve styles. Although the different attachments change the look of the dress, it is important that they are not just a slight change otherwise the customer could feel that they are wearing the same dress over and over again with just a slight change in look each time. Therefore the additional sleeve and strap styles available would have to create a whole different look so they could be made from a different material or colour as the rest of the design.

As well as this the skirt extensions and the bodice could be made in different colours and materials as the pattern pieces for each part are simple and can be easily reproduced. It is important that if the skirts and bodice were to be manufactured, that they fit properly and are fine to wear on their own. This would benefit the customer by giving them extra choices of how to wear their dress as for example they could wear the bodice with jeans to dress it down slightly or choose to wear one of the skirt extensions with a different top.

#### Improvements that could be made to make the prototype suitable for commercial manufacture:

- As already mentioned in previous modifications, I would make sure that all raw edges are neater with an overlocker to give a more professional look.
- The material used may have to be cheaper in order to make it more commercially viable, so the manufacturer makes a suitable profit from the product. I have used two layers of fabrics so instead of this I could use one main fabric for all parts of the dress. The Satin that was used to make the waist had a nice finish to it, so I could have made this the main material as it has the evening look required, easy to follow aftercare and it will be cheap to buy in bulk.
- I could offer the customer a choice of straps and sleeves to attach in the armhole. This would give another set of looks that the dress can transform into and would be popular with those customers who prefer the different style straps or like to wear sleeves. Although this may add to the cost, as more component parts are needed they will be easy to follow shapes and designs so will be able to be quickly produced.
- Although black proves to be the most popular and classic colour, if the product was being manufactured it could be produced in a range of different colours. Darker colours being more popular in the autumn/winter months and lighter colours more popular in the spring/summer months.

#### Possibilities of where my dress could be sold:

I think as its a new design it would be best to start off as a one-off production in a popular boutique store to test how well it sells in the market. If the product was popular and sold it could then go out to chain retailers, but it is important to test how well it would sell to avoid a large amount of money getting wasted on production, equipment and labour. If it did sell in chain retailers this would require the product getting produced in batch production to make sure there was enough for each chain store.