Pearson

Entry Level Certificate

Design and Technology (8911)

Resistant Materials

Level 3 – Exemplar portfolio with commentary

Introduction

This material is provided for guidance only, it is by no means compulsory and centres can and are encouraged to use their own interpretation.

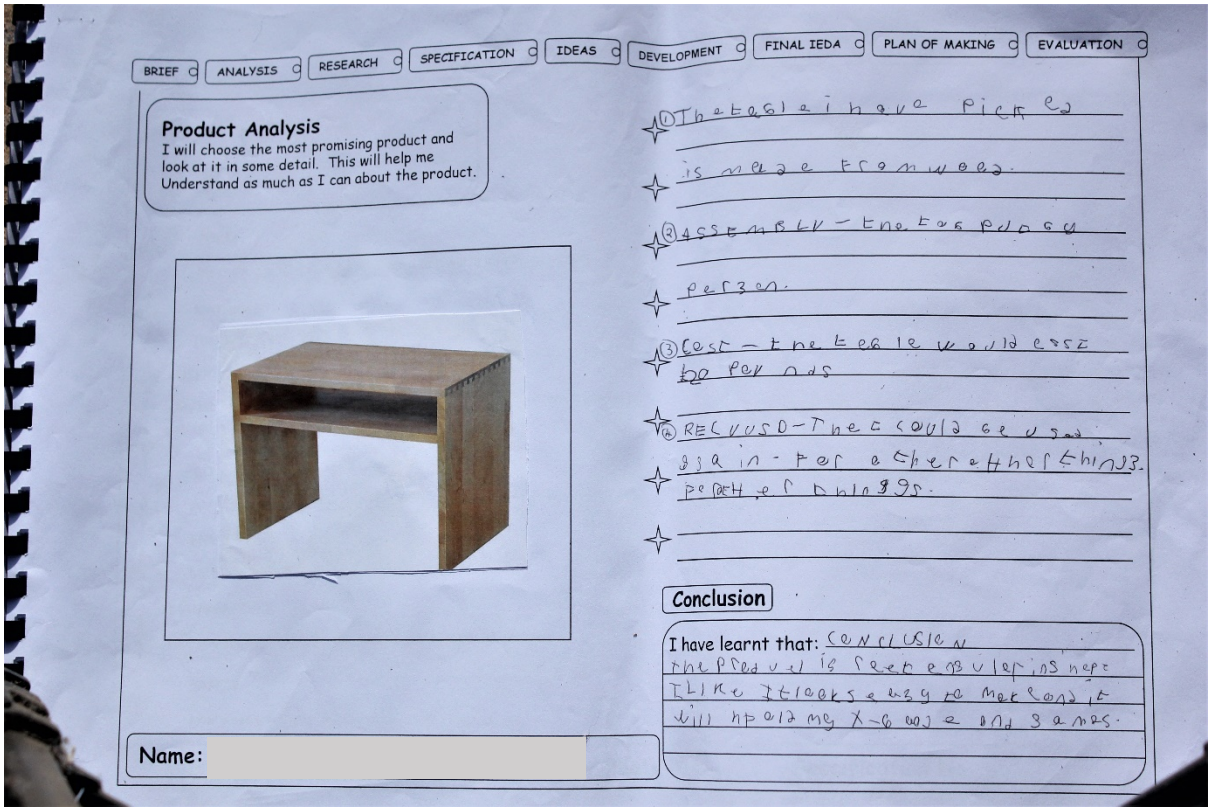
The examples are taken from real portfolios that have been presented for moderation in past years.

The notes that go with the slides are written to give guidance to centres so that it is clear what the Principal Moderator is looking for under each title in the Candidate Assessment Booklet.

The work shown does not necessarily cover all the assessment criteria but this does not exclude the award of a level 3. Care must be taken to ensure there is sufficient evidence to allow the award of level 3.

Investigate: Analysing the Brief

Analyse your design brief by identifying the design needs you will need to consider before designing your product.

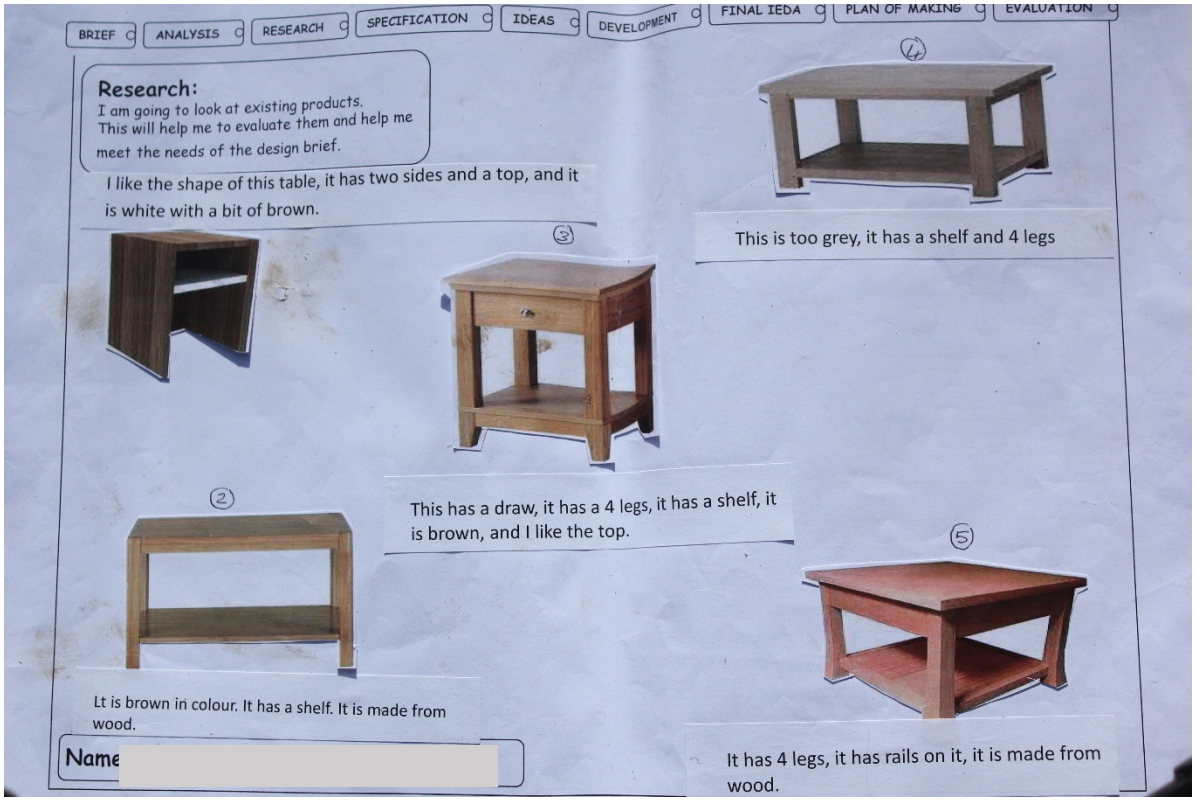


The page shows a teacher prepared template to help guide the student to hit the assessment criteria.

There are some points of analysis on the right of the sheet concerned with environmental issues, materials and cost. These points are a little too prescriptive and the student should have been guided to consider a range of materials as well as the addition of what might be stored e.g. magazines, newspapers, tv remote etc. Consideration of the space the product is to be used in and how it may have to fit existing furniture in that space could have been included. In the conclusion there is some guidance for research with reference to storage of an 'X Box' console and some games.

Research

Present selective and focused research that is guided by the analysis in your design brief. **Investigate** a similar existing product to find out useful information to use when designing, to include how it is made, what materials it is made from and how it is assembled.

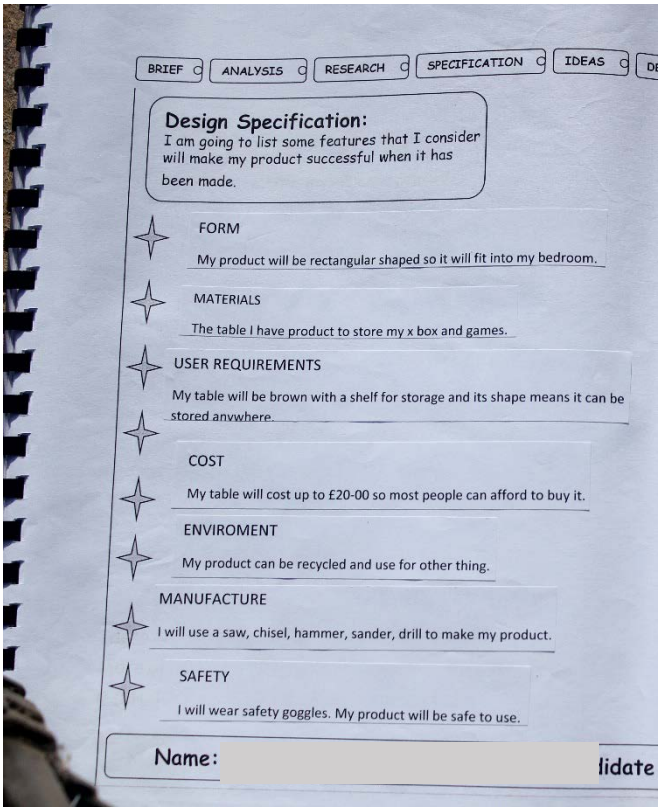


A range of different products have been considered here along with some analysis. More in the way of analysis could have been added to comment on size, materials used or the suitability of the design for the intended use.

Specification

Develop a design specification for your product using the following headings:

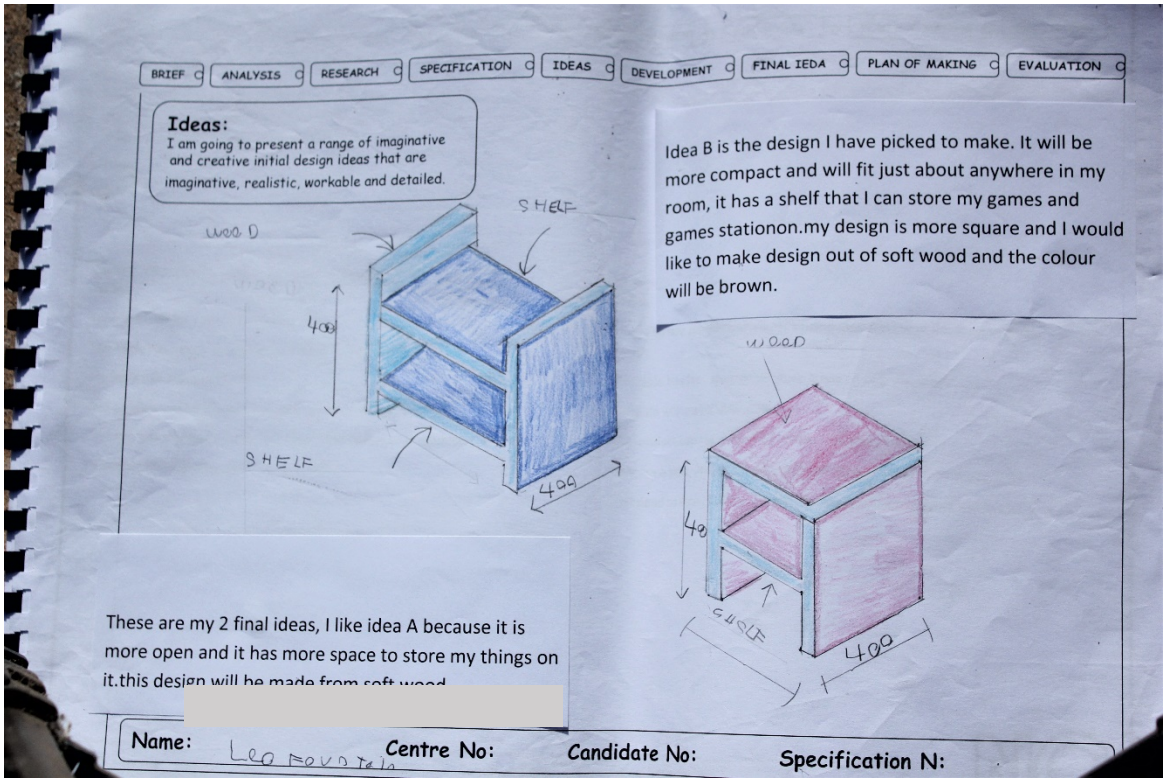
- form
- function
- user requirements
- performance requirements
- material and component requirements.



Once again the student has been given some guidance as to areas to write the specification around. The points made are relevant and could have been more focussed had there been some research into colour or the size of the 'X Box' abd the games that will be used on the table.

Design: Initial Ideas

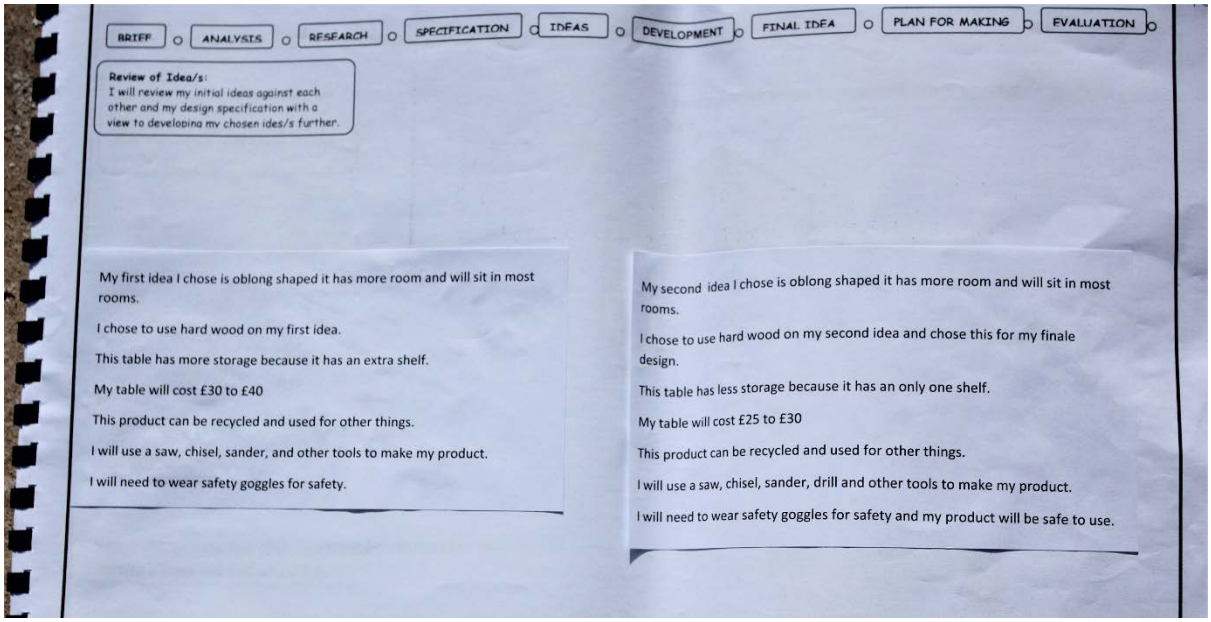
Present a range of different initial ideas for your product that are creative, realistic, workable and detailed and meet all the points in your specification. **Explain** your designs/plans using annotation to show the materials, components and processes you will need to make them. **Justify** your selection of specific materials, components. Explain how your designs meet your specification points. **Discuss** your designs with peers and gather general and technical information based on specification points to use in design development.



There are only two designs for the table proposed and both are similar in design. With a more focused specification and some note of the existing products there is scope for a wider range of possible ideas here, this only just fits the minimum requirements for Level 3. There is some inclusion of detail by way of sizes and some mention of materials in the notes. With the addition of possible construction techniques that could be used then this would bring this sheet up to a better level. There is a conclusion already as to which design will be produced.

Review

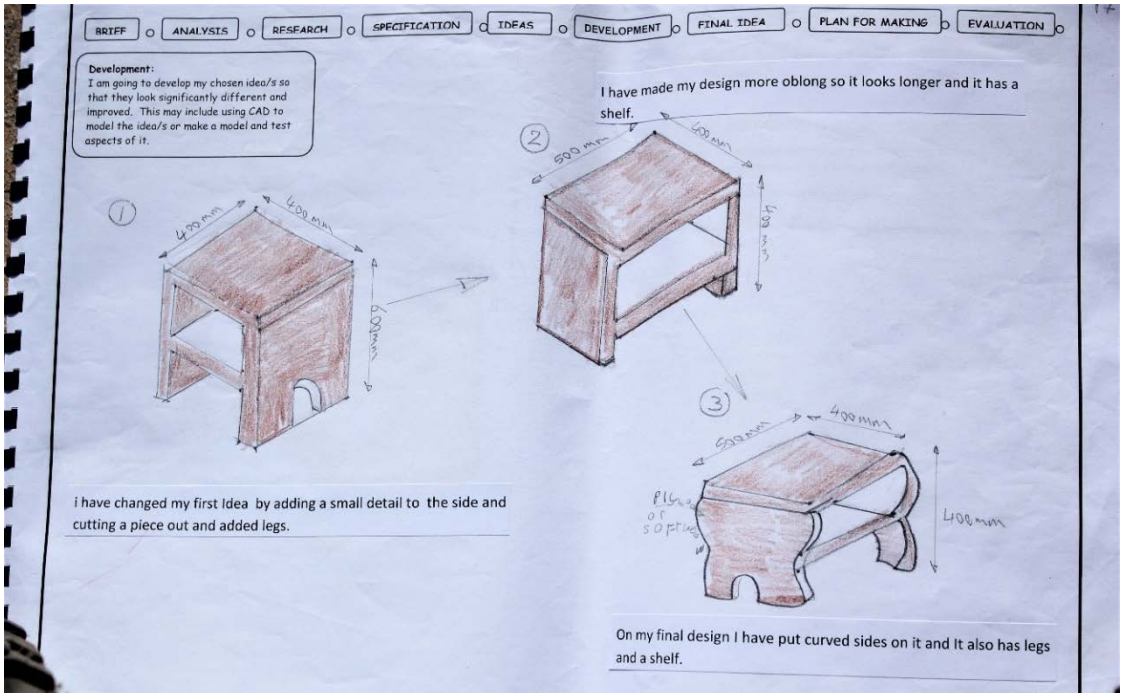
Review your design ideas against your original specification criteria and choose the best **one** to develop in more detail. **Explain** how feedback from peers will be used in development.



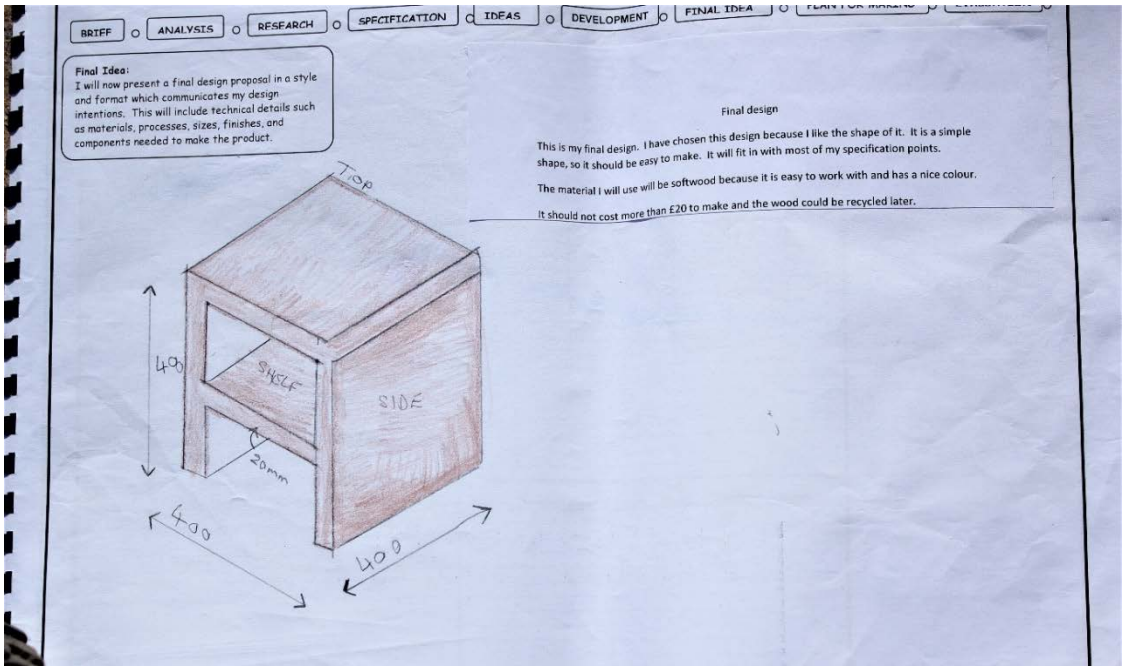
Both ideas are reviewed here with some comment referring back to the specification but there is not reference directly to this. Comments are lacking in detail and the comments from potential users would have added to this section.

Develop

Develop your best design idea into a final design proposal that is improved and refined compared to the original. **Explain** how your design changes have improved your design. **Model and test** an important part of your design idea as it progresses. This could be a 2D/3D model using traditional materials and/or a 3D model using CAD. **Draw** your final design showing the major dimensions and the materials/ components it is made from.



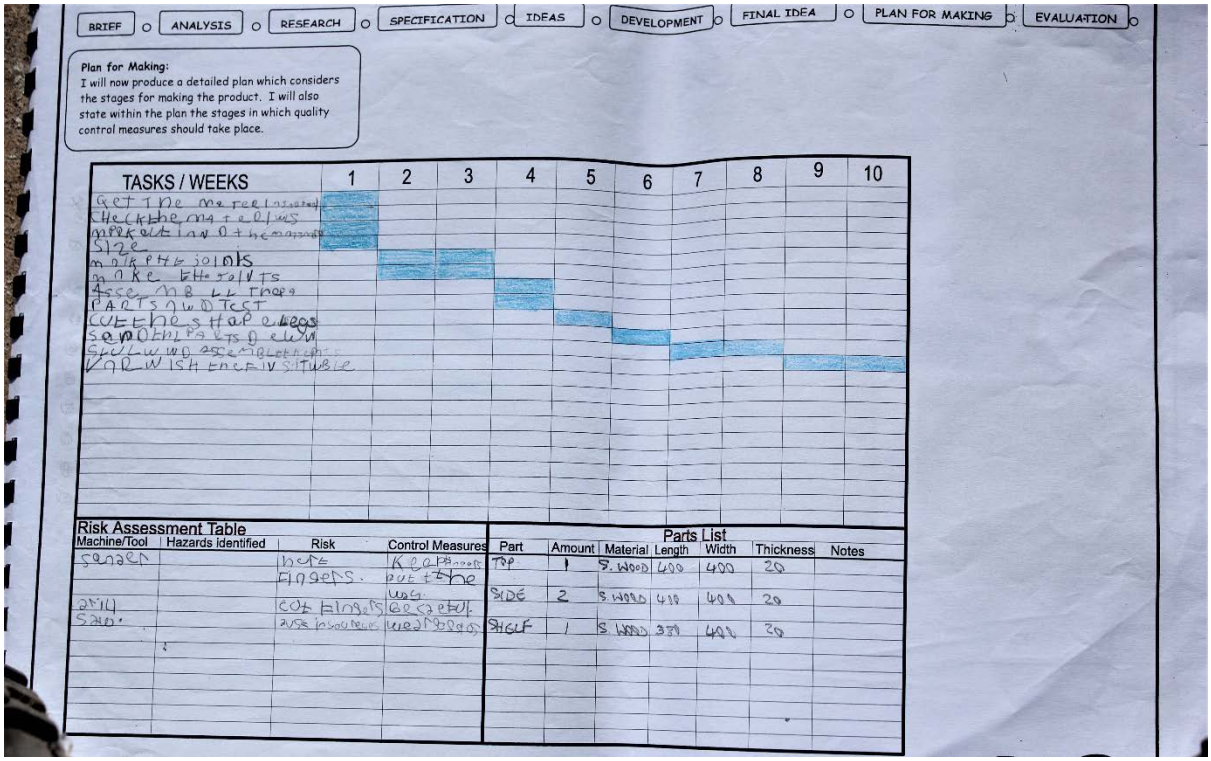
Development is mainly cosmetic though there is some reference to different sizes and their relevance to storage capacity. Some modelling by way of a card or foam model to look at sizes and proportion would have been good here. The final design is identical to the initial idea that was chosen before this stage of the design process had been completed.



A final drawing with a cutting list would also help to clarify the final plan for making and how size and cost may affect the production of the table. This is the third drawing showing the table and little has been developed from the original idea.

Make: Production Plan

Outline a production plan that shows the main stages for making your product, including some quality control checks.



The plan covers the main stages of making but there is no indication of time included. The teacher prepared template is very useful and guides the student well but it has not been fully exploited. The inclusion of the risk assessment is good and there is space for some consideration of materials.

Making Skills

Make a product that involves different component parts using different materials, components, equipment, techniques and processes that functions fully and matches most specification points. **Select** the correct tools, equipment and processes, including CAD/CAM where appropriate, for specific uses. **Use** different making skills that demonstrate precision and accuracy in manipulating and using materials, tools, equipment and processes. **Make** your product safely.

A final drawing with a cutting list would also help to clarify the final plan for making and how size and cost may affect the production of the table.

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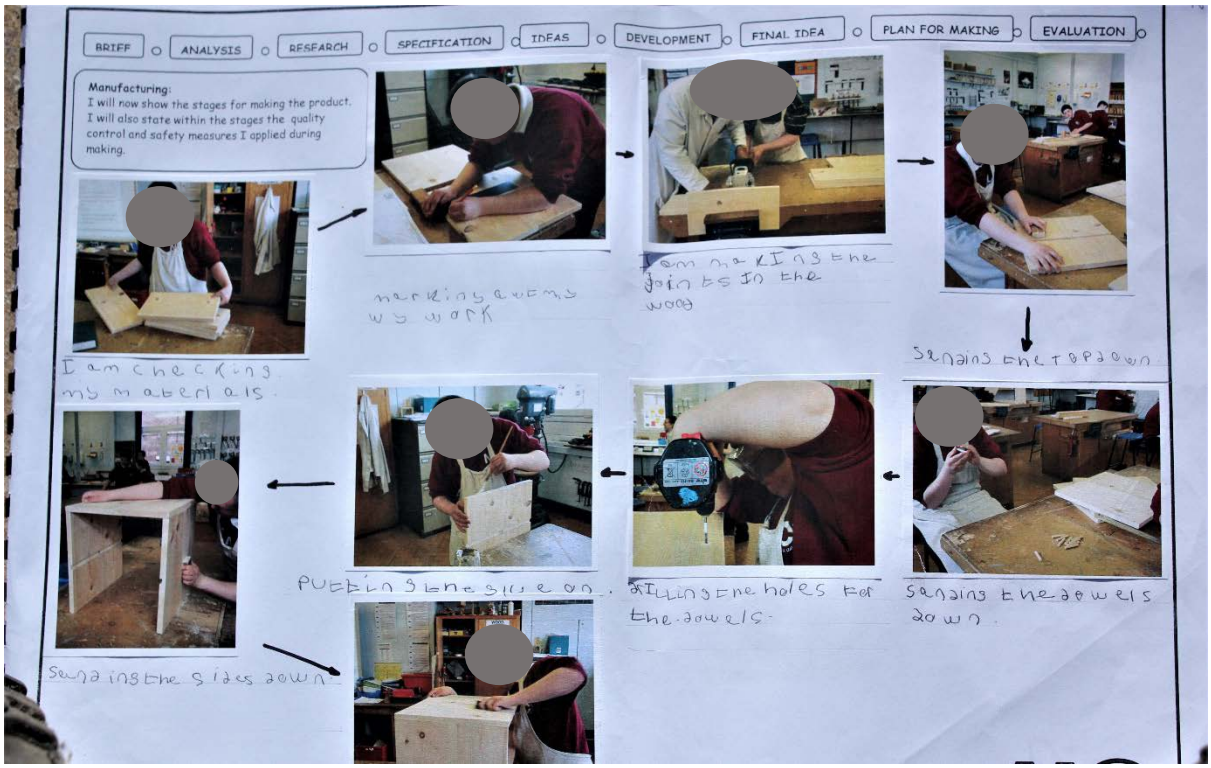
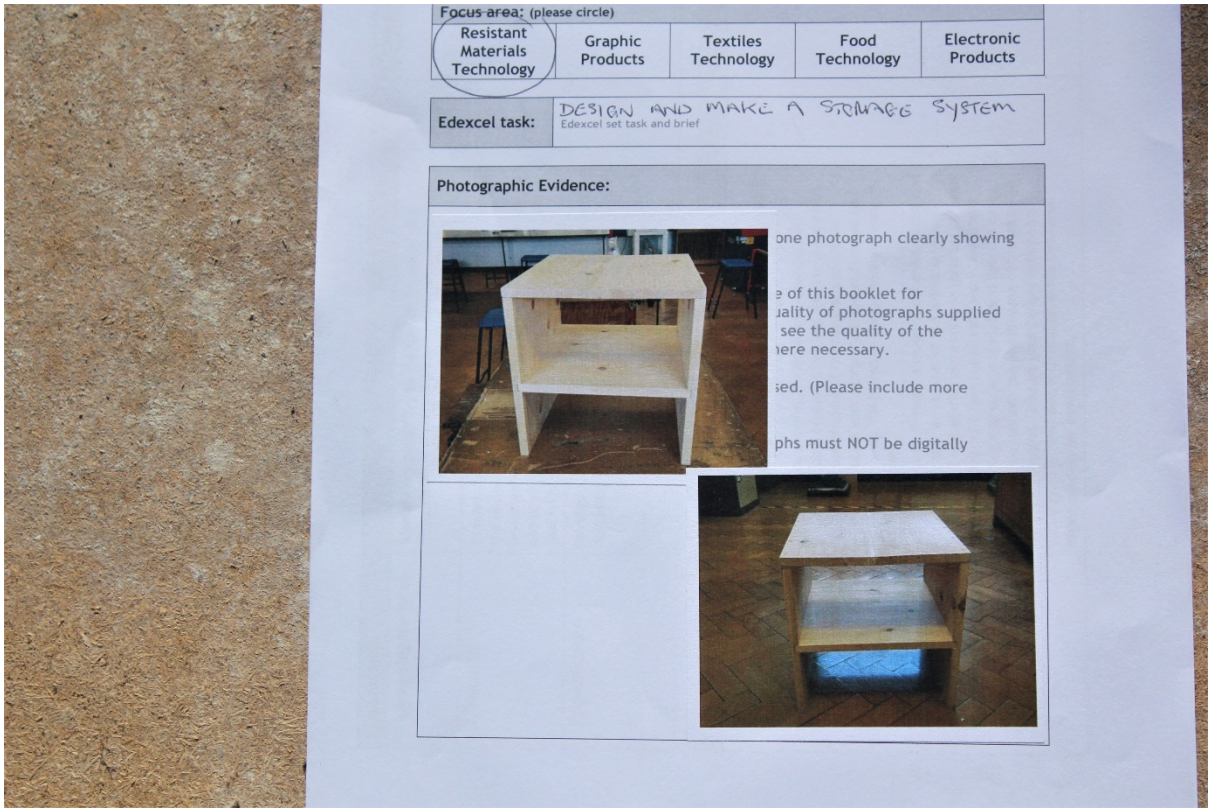


This is a good example of the process of making and clearly shows the student completing a range of tasks using hand and machine tools safely. There is also a commentary explaining each process. This does not have to be an exhaustive diary and can be completed by students themselves as work progresses.

Quality of Final Outcome

Make component parts that are accurate, well finished and well assembled into an intended product or demanding sub-systems of the product. **Produce** a product or demanding sub-system of the product that matches the specification criteria and functions as intended.



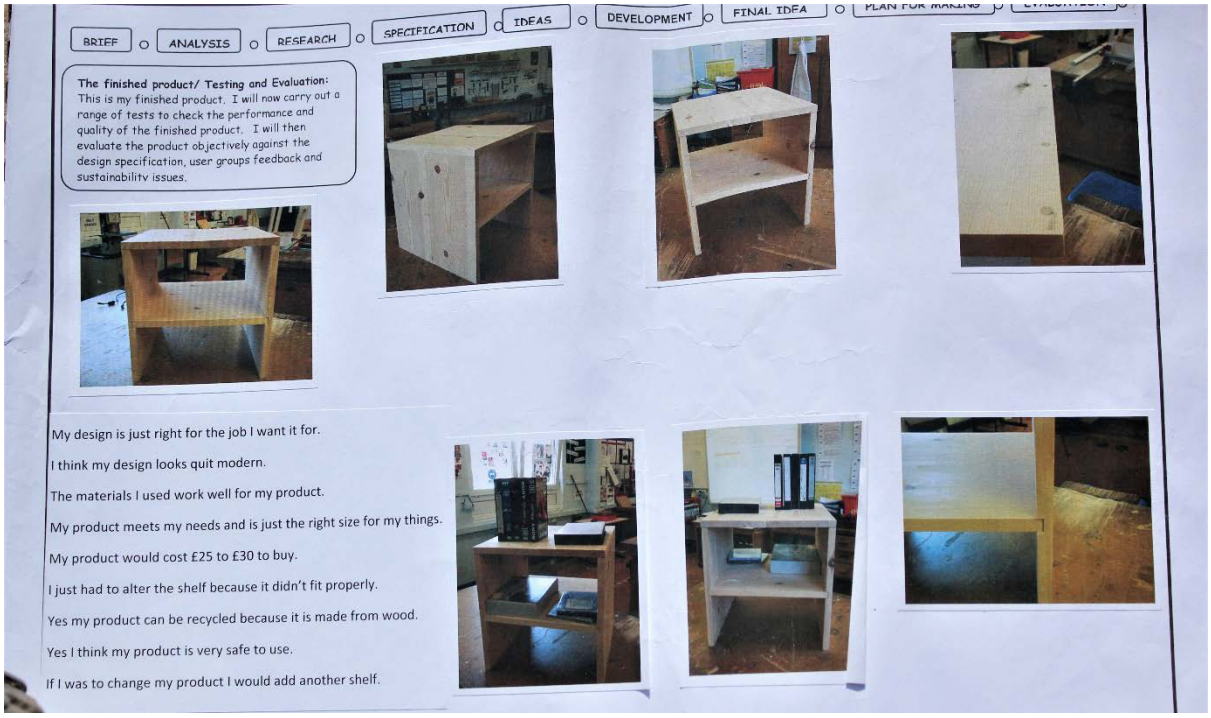
The photographs on the CAB should be clear close-up pictures of the product. There should be some indication of scale included and it would be helpful if there were pictures showing details like the inside of the joints or the accuracy of fit in the housing for the shelf; this can just about bee seen if the page is enlarged over the right hand picture.

Test and Evaluate: Test and Evaluate Final Outcome

Test and evaluate your final product against the measurable points of your specification criteria.

Suggest Improvements

Suggest and sketch how your product could be modified to improve its performance and/or quality if it were made again.



The product has been evaluated against the specification and comment made are subjective. It would be even better if there had been some comment from others. It has been tested in the environment the table was intended for. There is no comment on possible improvements though.