GCE Design & Technology

Unit: 9DT01

Pearson Edexcel

Topic: Child storage

Full Portfolio

General Description The candidate produced a portfolio of 66 pages, well-presented and considered pages. The candidate explored the possibility of a child's storage and desk unit.		**Centre Mark**	**Mod Mark**
Grid 1 Investigation **Evidence**	In this section we are looking for the candidate to generate a design brief after liaising with a client and exploring possible design solutions to a range of problems. Slides 4-5, clearly shows 4 potential clients. Each client has a single need/problem that the candidate considers. The depth of exploration into each of these design possibilities is a limited, however a possible design solution is offered and some of the client's needs are explored. These slides lack a depth and are suited to a level 2 assessment. Slide 6, and 7, takes one of these potential ideas and explores the client and potential product in more depth. Key elements are not examined, such as frequency of use, types of play, accessibility etc. The interview on slide 7, is an exploration of both the client, and the end user, the child. This is a positive way of handling the needs and the function of the product. The responses to the questions from both the mum and child are informative, however, a higher assessment grade would have been achieved if the candidate responded to their comments, suggesting how the comment might affect the design, or examine the differences between user and client and suggest a balance/compromise. The level of questions could have been designed to be more informative, and a note suggesting how the interviewees response could affect the design outcome would have added more value. Likewise, a comparison of the user and clients		Level 2
Grid 2 Analysis/Research **Evidence**	At this stage candidates should be planning a range of research strategies, the outcomes of which can be analysed to forward the design proposal. This could be looking at markets and further identifying their client's needs. The task analysis on slide 9, is a good trigger for planning the research, The comments in the bubbles are relevant, however additional value would be given to these if a summative statement was linked to them. For example, after the comment in the method of manufacturing box, how might this impact the size, type of material or processes that are available for the candidate to use.		Level 3

	Slides 11 and 12, show a fairly comprehensive list of possible materials. Most of the materials have a comment linking them to the needs of the design project and a client review is also given. For example, '*plywood is impact resistant, kids can play rough a durable surface is required*,' The life cycle analysis on slide 13, is relevant to the product with some good key points that can be used to inform the specification. Slide 14 shows that the anthropometric data has been collected both as a prime source and from research data. The data gathered is relevant and would support the design and development sections of the folder. However, little evidence is found in these sections to show that the data has been used. Slide 15 looks at the space that is available for the product to be sited. The information has a direct impact on the design outcome. The client responds to this information and justifies the best position to place the product. A comment in the form section on slide 13 states that it must '*fit the aesthetic of the room'* This would have been an opportunity for décor and aesthetics to be looked at in the candidate's research to trigger design inspiration. This additional depth and connectivity would have moved the marking to a higher assessment point. Slide 16 and 17 are product disassembles of existing products. Some key issues are discussed, adjustability, storage, wipe clean etc. These are good iterative trigger points that are not evidenced later in the design section.		
Grid 3 Specification **Evidence**	In this section we are expecting to see a design brief and evidence of technical, relevant and measurable specification points that are generated research undertaken. A clear design brief is evidenced on slide 18. The specification offered on slides 21 to 24, some relevant points that were a result of/alluded to the research section of the folder. Must of the key points for a child's workstation are listed. These points are justified and mostly referenced in the research. The specification must have specific measurability test to ensure the highest level of assessment in this section. Some stronger specification points related to the research would have made this achievable. One example; *'The station must accommodate at least 10 books of various sizes',* this could then reference the research of the dimensions of books, (not seen in the folder), and then as a check state that by measurement an area of, or a minimum size of, would ensure that x numbers of books would be accommodated. Some general tests are highlighted. E.g. stability tests and materials tested for toughness and strength, these are not however named, or the parameters between pass and fail are not highlighted.		Level 2

Grid 4 Design ideas **Evidence**	In this section we expect to see iterative creative designs that are generated by a range of strategies, that are support by annotation that is research and client led. Four colourful design ideas are presented on slides 26 to 29. One 3D drawing is used to illustrate the design intention, this is portrayed clearly. Reference to a single form of manufacture can be seen by cutting and pasting thumbnail stock pictures. This is an efficient way of communicating the manufacturing and justification and benefits can be seen in the supporting annotation. However, it is not iterative, showing a range of fixings and what this might mean to the manufacturing process or compromising a design would give these pages more depth and value. A flavour of design thinking, compromises and what ifs should be seen here. Slides 30 to 32 is the review of the design ideas. This is not an A level assessment requirement though it could be considered good practice in some instances, and it does indicate some comparison against each of the ideas. On these slides annotation referring to the clients' comments and specification can be seen. These tend to be descriptive, rather than informative and offering a debate on alternatives or which is preferred and why.		Level 2
Grid 5 Development **Evidence**	In this section we are looking for modelling to inform and progress the product towards the final design. This will be informed by client comments, CAD and traditional modelling. The design will also be seen to progress with consideration to manufacturing, materials and technical knowledge. Slide 34, is the first development slide. A block card model of a design proposal is seen, with dimensions. A synopsis of why the model was made, one item in this is '*test dimensions'*, what tests are undertaken is not clear, this would have been an opportunity to apply the detailed anthropometric data collated in the research section. Some amendments are suggested based upon the client's feedback. Slides 35 and 36, are a representation of the final product, rather than using the techniques of CAD and scale models to evaluate and progress aspects of the design. Additional research of two design styles is shown here, but the use of these is limited, and an opportunity for iterative designed was missed. At this point to achieve a higher level of assessment the introduction of sub systems would help. Storage, adjustability, surface details, stability and fixings are an example of what could have been introduced.		Level 2

Grid 6 Final Design **Evidence**	In this section the candidate should produce detailed information that would enable third party manufacture. In addition to this a level of project management that includes quantities and costs is expected for the highest attainment. Slides 37 to 45, show accurate CAD drawings of the proposed finish piece and individual components. Individual parts are highlighted in an assembly drawing, and the 3D CAD would allow a user to position the parts when assembling the product. Types of materials and manufacturing processes are missing from these pages which inhibits the candidate from accessing the highest marks. Costings are seen in the evaluation on slide 66. These are final costs and not used to develop the product, e.g. changing material thickness, or altering sizes to best suit stock sizes.		Level 3
Grid 7 Review **Evidence**	In this section the candidates are expected to produce an analysis of the design changes throughout the folder. These should be balanced offering pros and cons to suggested materials and processes using technical language and offer an opinion of the client's comments. Client's feedback can be seen on most of the pages in green, however what is lacking is the designer's response to these comments, whether the clients wish can be met whilst keeping to the specification parameters. The design review on pages 30 -33, gives the candidate an opportunity to compare and contrast the different design proposals. However, the text is more descriptive, and embracing different aspects of each design to forward one better proposal is not made. Within the body of the text technical language and justified references to sustainability can be seen to draw conclusions. Overall, this is just a		Level 2
Grid 8 Communication **Evidence throughout portfolio.**	The candidates should: Demonstrate a perceptive selection and accomplished use of traditional/manual graphical techniques to communicate design proposals. Demonstrate a perceptive selection and accomplished use of computer-aided design (CAD) techniques to communicate design proposals. Demonstrate a perceptive selection and accomplished use of written techniques to communicate design proposals. This is well presented folder. The design intent is clear. A range of illustrative techniques are used to good effect. Some of the sketched work has a slightly naïve approach, but the detail drawings are dimensioned and are produced to a recognised standard. CAD and traditional modelling are used, research is presented in a clear graphical manner.		Level 3
Grid 9 Tools and equipment **Evidence**	In this section the candidates are expected to skilfully use tools, equipment and techniques that will aid an accurate manufacture of a product. Material selection will be justified and suit the selected manufacturing process. The manufacturing diary is seen on slides 47 to 54. The photographs are clear and help the moderation process in understanding where the centre has allocated the marks. The candidate has used colour to reference safety and the tools used. The product produced has a lot of repeat process, however, this is completed with a high level of accuracy. Dowl joints and KD fixing require accurate marking out and		Level 3

	execution. On slide 52 a centre lathe is seen being used. However, the task it is used for is relatively simple centre drilling. To access a higher assessment bad the locating pegs for the fabric could have been parallel turned. The fabric cover is stitched and adds an additional manufacturing process. However, an opportunity to manufacture small storage compartments, or other sub system sections, would allow access to a wider more demanding range of processes. The selection of materials and manufacturing processes are suitable for the realisation of the final outcome, but they are of a relatively low demand.		
Grid 10 Quality and Accuracy **Evidence**	In this section it is expected that candidates will produce a working prototype that meets the design specification. The final product will be skilfully made and show an iterative approach to the manufacture. The final outcome is solidly and accurately made and looks functioning and fit for purpose. With accurate positioning of the fixings, the desktop can be flipped, heightening the work surface allowing continued use of the product as the child grows. The two central bullet points in the assessment grid are fully met and are accredited as a level 4. Bullet points 1and 4 of the assessment criteria in grid 10 initially seem to be a much lower level. The manufacturing processes are accurate, but simplistic and have a limited demand. The manufacturing diary is presented in a way that any issues during manufacturing that may cause a need for thinking around a problem are not shown. The iterative manufacture mark could be accessed by considering and evidencing jigs and templates to ease manufacture. However, slide 61, in the evaluation highlights the issues raised in the manufacture, and justifies the design changes made by the candidate at this stage of the design cycle. Accessing the level 3 assessment criteria for this bullet point. In conclusion the overall grade for this section was a level 3.		Level 3
Grid 11 Test and Evaluate **Evidence**	In this section we are looking for the candidate's ability to test and evaluate their final product. Included in this could be referencing further developments, showing specific tests and justifying their outcome with the clients' needs and wants. This section lacks specific tests, The first three slides, 56-58, show the user engaging with the product and the annotation supports the fact that she liked it. A more robust assessment could be offered if the anthropometric data seen in the research was used to analysis dimensions. Slide 59, is an example where testing could be used to justify the comment. The candidate refers to glued dowel joints being secure. A destructive test with weights on a test joints with and without glue would prove the benefit of the glue. Slide 62, shows modifications that could be made to improve the final outcome, some justification for these changes is evidenced. Costings, LCA and evaluation against the specification are evidenced in latter end of this section. Tests which are referenced in the initial specification, stability tests for one, are not used or described. Overall, a solid evaluation. Level 2.		Level 2
Total			B Grade