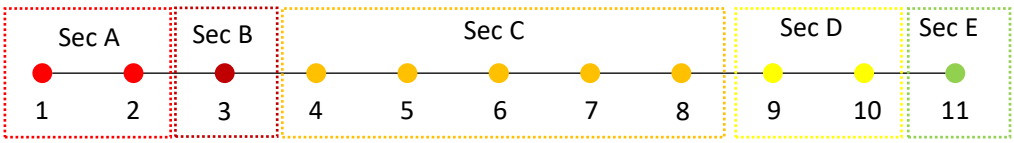
Product Design NEA Progress log

Name:
Form:
Target Grade:

A-Level PRODUCT DESIGN SCHEDULE



SECTION	DEADLINE	COMPLETED?
Section A Overall 20 marks (Identifying and investigating design possibilities)		
1. Identification and investigation of a design possibility		
2. Investigation of needs and research		
Section B Overall 10 marks (Design Brief & Specification)		
3. Design Brief and Specification		
Section C Overall 25 marks (Development of Design Proposals)		
4. Design ideas		
5. Development of design ideas and modelling		
6. Final design solution		
7. Review of development and final idea		
8. Communication of design ideas		
Section D Overall 25 marks (Developing design Prototypes)		
9. Tools and equipment		
10. Quality and accuracy		
Section E Overall 20 marks (Analysing and Evaluating)		
11. Testing and evaluating		

A-Level (7552) PRODUCT DESIGN OVERVIEW

Paper 1: Technical principles of Design and Technology
Questions: Mixture of short answer and extended response.
Written examination: 2 hours 30 minutes
30% of the qualification
120 marks

Paper 2: Designing and making principles of Design and Technology
Questions: Mixture of short answer and extended response.
Section A:
Product Analysis: 30 marks
Up to 6 short answer questions based on visual stimulus of product(s).
Section B:
Commercial manufacture: 50 marks
Mixture of short and extended response questions
Written examination: 1 hour 30 minutes
20% of the qualification
80 marks

Non-Examined Assessment
What's assessed
Practical application of technical principles, designing and making principles.
How it's assessed
Substantial design and make project
100 marks
50% of A-level
Evidence
Written or digital design portfolio and photographic evidence of final prototype.

Time Log Sheet

Time	Date	Part & Section	Lesson objective	Reflection

Time Log Sheet

Time	Date	Part & Section	Lesson objective	Reflection

A-Level PRODUCT DESIGN OVERVIEW

Assessment overview of the NEA

- Students will produce a substantial design, make and evaluate project which consists of a portfolio and a prototype.
- The assessment will be carried out under controlled conditions, as specified within the qualification's specification.
- The final prototype must be produced under immediate guidance or supervision.
- The portfolio will contain approximately 40 sides of A3 paper (or electronic equivalent)

There are five parts to the assessment**:**

Section A Overall 20 marks (Identifying and investigating design possibilities)
Identification and investigation of a design possibility, investigation of client/end user needs, wants and values, research conclusions and practical primary research

Section B Overall 10 marks (Design Brief & Specification)
Identification and evidence of a clearly written Brief and Specification linking to previous research.

Section C Overall 25 marks (Development of Design Proposals)
Design ideas, development of design idea, final design solution, review of development and final design and communication of design ideas

Section D Overall 25 marks (Developing design Prototypes)
Design, manufacture and realisation of a final prototype, including tools and equipment and quality and accuracy

Section E Overall 20 marks (Analysing and Evaluating)
Testing and evaluation

EXAMPLE CONTEXTS TO THINK ABOUT….

Context: Sustainable Design
Designers have a responsibility to design products that are environmentally friendly. This means designing for disassembly and choosing materials that can be used again or recycled. Sustainability is a global concern and customers are increasingly seeking products which reflect this awareness.

Context: Child Development
Children's development in the first few years of life can have a dramatic impact on the later adult. Many companies specialise in this market area. A leading manufacturer wishes to extend the range of products they offer to parents and have asked for assistance in identifying a gap in the market.

Context: Celebrations
Celebration parties are popular in all cultures and generate many opportunities for new and novel products. The market for off-the-shelf party products is booming. Whether this is for seasonal events such as Halloween, special events such as 18th birthdays or weddings, a national sporting event or casual events such as a cocktail party, there are specialist companies who manufacture products to save time and effort for the host.

Context: Promoting health and fitness
Designers are often challenged to develop products, spaces and environments that provide efficient, functional and enjoyable ways of promoting health and fitness. As lifestyles change, more people are looking for ways in which they can keep healthy as part of their daily routine. They may do this by making small changes to their lifestyle to improve their fitness. This has led to some innovative and unconventional approaches being taken by designers. Products, equipment, promotional material, Environments and spaces are being designed to include approaches to keeping fit and healthy as part of peoples' daily routine.

Example Design context: Child Development

Children's development in the first few years of life can have a dramatic impact on the later adult. Many companies specialise in this market area. A leading manufacturer wishes to extend the range of products they offer to parents and have asked for assistance in identifying a gap in the market.

This contextual challenge example, would encourage you to design and make a product which would help in the physical and/or intellectual development of children in a specific age range. The product could be suitably packaged in the same era or style of the company you have investigated and should include parental guidance.

D&T product focus areas:

- Healthy snack foods
- Story time
- Dressing-up outfits
- Play mats
- Constructional toys
- Learning Puppets for nurseries or special educational establishments
- Nursery toys

Example Design context: 'Promoting health and fitness'

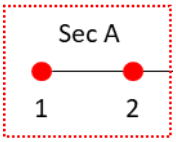
Designers are often challenged to develop products, spaces and environments that provide efficient, functional and enjoyable ways of promoting health and fitness. As lifestyles change, more people are looking for ways in which they can keep healthy as part of their daily routine. They may do this by making small changes to their lifestyle to improve their fitness. This has led to some innovative and unconventional approaches being taken by designers. Products, equipment, promotional material, Environments and spaces are being designed to include approaches to keeping fit and healthy as part of peoples' daily routine.

This contextual challenge example, would encourage you to design product/prototype, space or environment that promotes health and fitness. You should consider the lifestyles of specific groups of people, their daily routines, the places and spaces where they live, work and socialise, and how these factors can influence design.

D&T product focus areas:

- Multi-function equipment for exercise and recreation
- Smart devices to monitor health and fitness
- Wearable accessories or clothing to encourage healthier living
- Resources to promote health and exercise of specific age groups
- Multi-purpose leisure spaces or environments.

Section A Overall 20 marks (Identifying and investigating design possibilities)



Checklist	
a) Production of a refined design need based on outcomes of research and investigations. Production of a gantt chart with clear planning of timescales for project	
b) Current products critically analysed to inform design research and decisions.	
c) Evidence of client/end user influence in the research conclusions and any practical research.	
d) Identification and justification of performance requirements for the prototype.	
e) Consideration of scale of manufacture and how this reflects on relevant cost.	

Notes:

Section A Overall 20 marks (Identifying and investigating design possibilities)

16-20	-Excellent rationale provided for the context selected, with continuous reference throughout the project to the end user and the constraints that need to be considered in formulating a final solution. • Student employs a comprehensive range of strategies and techniques, including both primary and secondary methods of investigation, practical experimentation and disassembly, to thoroughly explore design opportunities. All sources have been fully referenced. • First concepts are both fully relevant to the context and feasible for further development and are clearly communicated through a fully appropriate variety of methods and techniques. • All investigations relate directly to the design context, issues are identified and fully addressed and the student demonstrates a detailed and perceptive understanding of the information gathered.
11-15	• Good rationale provided for the context selected with clear reference to the end user and the constraints that need to be considered in formulating a final solution. • Student employs a broad range of strategies and techniques, which may include primary and secondary methods of investigation and/or practical experimentation to explore design opportunities. Most sources have been fully referenced. • First concepts are mostly relevant to the context and feasible for further development and are communicated through a variety of methods and techniques which are mostly appropriate. • Most investigations relate directly to the design context, issues are identified and addressed and the student demonstrates a good understanding of the information gathered.
6-10	• Adequate rationale is provided but lacks focus for the context selected with some reference to the end user and consideration of the constraints in formulating a final solution which may lack clarity. • Student employs a limited range of strategies and techniques, which may include some practical activities, to explore design opportunities. Some sources have been referenced. • First concepts show some relevance to the context and may be feasible for further development and are communicated through a limited variety of methods and techniques that may not be appropriate. • Some investigations relate to the design context, issues are identified but may not be fully addressed and the student demonstrates an adequate understanding of the information gathered.
1-5	• Limited rationale provided for the context selected with minimal reference to the end user and the constraints that need to be considered in formulating a final solution. • Student employs a single strategy or technique, which may include practical activities, to explore design opportunities. Source referencing is minimal. • First concepts show little relevance to the context and are unlikely to be feasible for further development. These are communicated through basic methods and/or techniques. • Investigations may not relate directly to the design context, a limited number of issues are identified but not addressed and the student demonstrates only a basic understanding of the information gathered.
0	Nothing worthy of credit.

Central to the success of the NEA is the identification by the student of the contextual challenging that offers the opportunity to challenge themselves as a designer.

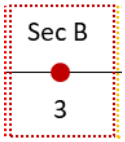
Having identified their specific context from the challenges offered they then need to plan and carry out extensive investigation into all aspects of the context in order that they might operate from a position of knowledge when making subsequent decisions.

The student will be expected to employ a variety of both primary and secondary methods of investigation. These might include visits organised by themselves or others, and surveys and questionnaires could be used to inform decisions. Useful and relevant material can be gained from others via the internet, books, magazines or interviews. Students should also be encouraged to undertake, where relevant, practical experimentation and disassembly, as methods for further understanding and exploring the context.

At this stage it is expected that students will begin to explore their thinking on possible solutions by producing concept ideas that take into account the information that has been collected. At this stage of the process these first concept ideas will merely demonstrate the initial thinking of the student and should serve to stimulate later more considered thoughts regarding their design proposal(s) and design prototype(s).

The assessment criteria is not to be seen as a linear process and aspects from this, and other assessment criteria, might be present throughout the student's portfolio. Wherever it takes place, it is expected that this work will be rewarded.

Section B Overall 10 marks (Design Brief & Specification)



Checklist	
a) Production of a refined design brief based on outcomes of research and investigations.	
b) Production of a technical design specification considering form, function, sustainability and standards relevant to the needs, wants and values of the intended client/end user.	

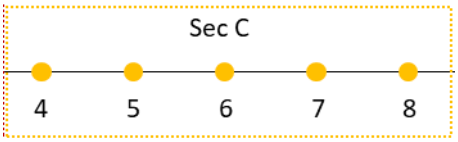
Notes:

Section B Overall 10 marks (Design Brief & Specification)

9-10	• A comprehensive, clearly stated and challenging design brief resulting from a thorough consideration of investigations undertaken, that fully addresses both the context and the needs and wants of the intended user(s). • The student has produced a comprehensive, detailed and well explained design specification which will fully guide the student's design thinking. • A detailed project management approach to prototype development, including time management and determining quantities and costs of materials, has been fully integrated into the specification
6-8	• A well considered design brief with a degree of challenge, resulting from well considered investigations, that addresses the context and most of the needs and wants of the intended user(s). • The student has produced a detailed and partially explained design specification which will help to guide the student's design thinking. • There is evidence of a project management approach to prototype development including time management and determining quantities and costs of materials, but may be lacking in detail.
3-5	• An adequate design brief which may lack challenge and clarity, resulting from partially considered investigations that only superficially address the context and the needs and wants of the intended user(s). • The student has produced a design specification which is lacking in some detail and will only guide student's design thinking to a limited extent. • There is some evidence of a basic project management approach to prototype development including time management and determining quantities and costs of materials related to the development of the prototype, but it is not fully integrated into the specification.
1-2	• A basic design brief, lacking both clarity and challenge which makes limited use of the investigations, may not address the context in full and only meets some of the needs and wants of the intended user(s). • The student has produced a design specification which contains minimal detail and does not guide their design thinking. • There is minimal evidence of project management being considered as part of the specification.
0	Nothing worthy of credit.

The student is required to produce a clearly stated and challenging design brief that addresses the context and meets the needs of the intended user(s).
The student should formulate a fully detailed design specification that is informed by their investigations and makes full use of the material collated. Statements in the specification need to be clear and unambiguous. There should be specific references to measurable outcomes as well as qualitative statements. Whatever format is chosen to present the specification it is expected that this will be a live and working document that will be constantly referenced to throughout the process.
The specification should also include details on how the student intends to organise their time.
The assessment criteria is not to be seen as a linear process and aspects from this, and other assessment criteria, might be present throughout the student's portfolio. Wherever it takes place, it is expected that this work will be rewarded.

Section C: Development of design proposals



Checklist	
a) Production of a range of design Proposals that are realistic, workable, and which address the criteria in the specification.	
b) Exploration of different design approaches, processes and techniques to produce realistic design ideas.	
c) Selection and application of design strategies and knowledge of materials and/or components, processes and techniques to produce design ideas that address client/end user needs, wants and values.	
d) Design ideas show consideration and use of aesthetics, including cultural and historical influences.	
e) Decisions made in consultation with the client/end user.	

Notes:

Section C: Development of design proposals

19-25	• The rationale for design decisions is clearly documented and fully justified with constant reference being made to the design brief, specification and investigations throughout the development of their design proposal. • In the development of innovative design proposals the student will demonstrate clear evidence of originality, creativity and a willingness to take design risks. • Excellent use of a variety of modelling techniques to support ongoing development work throughout. This is supported by the use of drawings, sketches, annotations and notes showing clear evidence of design thinking. • Excellent ongoing development of design proposals, achieved through exploration of and experimentation with different materials, techniques and processes leading to an excellent quality design of a prototype for manufacture. • Comprehensive and fully detailed manufacturing specification produced which makes specific reference to relevant quality control checks and allows fully accurate interpretation by a third party. • Project management for manufacturing allows for further development of design proposals in response to ongoing evaluation, testing and full consideration of contingency planning as prototype development takes place.
13-18	• The rationale for design decisions is documented and justified with regular reference being made to the design brief, specification and investigations throughout the development of their design proposal. • In the development of their design proposals, many of which will demonstrate an innovative approach, the student will demonstrate evidence of originality, creativity and a willingness to take design risks. • Good use of modelling techniques support ongoing development work throughout, showing clear evidence of design thinking supported by the use of drawings, sketches, annotations and notes. • Good ongoing development of design proposals, achieved through exploration of and experimentation with different materials, techniques and processes leading to a good quality design of a prototype for manufacture. • A detailed manufacturing specification is produced which includes reference to relevant quality control checks and allows for mostly accurate interpretation by a third party. • Project management for manufacturing allows for some further development of design proposals in response to ongoing evaluation and testing with some consideration of contingency planning as prototype development takes place
7-12	• The rationale for design decisions is documented with some justification and reference to the design brief, specification and investigations throughout the development of their design proposal. • In the development of their design proposals, some of which will demonstrate evidence of innovation, there will be elements of originality, creativity and a willingness to take design risks. • Adequate use of modelling techniques to support development work. There is evidence of drawings, sketches, annotations and notes which can be seen to inform subsequent design thinking. • Some ongoing development of design proposals, achieved through exploration of and experimentation with different materials, techniques and processes leading to an adequate quality design of a prototype for manufacture. • An adequate manufacturing specification produced which makes some reference to quality control checks and allows partially accurate interpretation by a third party. • Project management for manufacturing allows for some further development of design proposals in response to evaluation and testing and enables the made outcome to be achieved in a realistic and achievable timescale
1-6	• The rationale for design decisions is documented but this may not always be justified and may be lacking reference to the design brief, specification and investigations during the development of their design proposal. • In the development of their design proposals the student will demonstrate little evidence of innovation, originality, creativity and willingness to take design risks. • Basic use of a single or only simple, modelling technique(s), with limited evidence that this supports any subsequent development work. There is some evidence of drawings, sketches, annotations or notes but these do not always inform their design thinking. • Basic refinement of design proposals, with only basic exploration and experimentation of different materials, techniques and processes leading to a basic quality design of a prototype for manufacture. • A basic manufacturing specification produced with limited reference to quality control checks, which may not be sufficiently detailed for a third party to interpret accurately. • Superficial evidence that project management for manufacturing allows for further development of design proposals and which may not enable the made outcome to be achieved in a realistic timescale.
0	Nothing worthy of credit.

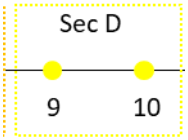
Design proposals should reflect on first concepts and take full account of the design brief and design specification. The aim should be that the development of their design proposal(s) leads to a prototype that can be manufactured by the student. In developing their proposals students will be expected to make constant reference to their design brief and design specification, to identify if further investigations are required and to carry these out. Design proposals can be demonstrated through a variety of different media, but whatever methods are chosen, they should be of a high quality befitting this level of qualification and show evidence of annotation to demonstrate their design thinking.

In the highest band, students should also demonstrate innovation by generating ideas that are different to the work of the majority of their peers or demonstrate new ways of improving existing solutions.

Modelling is seen as a key element of this assessment criteria, whether this be part modelling, practicing of manufacturing and finishing techniques, the production of scale models and material experimentation. There is also the expectation that students will produce working drawings, plans and patterns to enable successful prototype manufacturing to take place. The use of CAD is encouraged, but this should not be the only form of design communication that is used.

It should be noted that it is not expected that the assessment criteria be seen as a linear process and that aspects from this, and other assessment criteria, might be present throughout the student's portfolio. Wherever it takes place, it is expected that this work will be rewarded.

Section D Overall 25 marks (Developing design Prototypes)



Checklist	
a) Demonstration of the application of an iterative approach to design development. This is informed by the application of knowledge of materials and the needs, wants and values of the client/end user.	
b) Modelling/simulation used to test appropriate features including proportions, scale, function, subsystems. Modelling/simulation can be achieved through the use of traditional materials, or 2D and/or 3D computer simulations.	
c) Ongoing developmental changes are informed by technical application of research, experimenting, and client/end user feedback in order to improve, refine and realise a design.	
d) Selection and skill in the use of traditional/manual graphical, digital techniques (CAD), written techniques to communicate designs.	

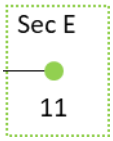
Notes:

Section D Overall 25 marks (Developing design Prototypes)

19-25	- Excellent justification provided for selection of appropriate materials and components and proposed techniques and processes, demonstrating an excellent understanding of material properties to ensure excellent quality prototype(s) that are fit for purpose. • Significant complexity or challenge is involved throughout the production of prototype(s). The student demonstrates excellent manufacturing skills combined with an excellent understanding of the need for dimensional accuracy and precision. • The student has selected and used appropriate tools, machinery and equipment, including CAM where required, and worked with a high level of skill, precision and accuracy to produce their prototype(s). • Prototype(s) fully address the design brief, satisfying all major points of the specification and take into account all amendments/ modifications to their original design proposals as necessary. • Student makes all required modifications to the prototype in a fully considered manner in light of feedback from user trials and third party feedback and as a result of testing and evaluation carried out against earlier iterations of the prototype. • Quality assurance is evident throughout and it is clear where planned quality control checks have been applied throughout the process to ensure consistency and safety. • Clear evidence throughout the manufacturing process that appropriate health and safety processes have been both considered and employed.
13-18	• Good justification provided for selection of appropriate materials and components and proposed techniques and processes demonstrating a good understanding of material properties to ensure good quality prototype(s) that are fit for purpose. • There is some complexity or challenge involved throughout the production of prototype(s). The student demonstrates good manufacturing skills combined with a generally sound understanding of the need for dimensional accuracy/precision. • The student has selected and used appropriate tools, machinery and equipment, including CAM where required, and worked with a good level of skill, precision and accuracy to produce their prototype(s). • Prototype(s) mostly address the design brief, satisfying the majority of major points of specification and takes into account some amendments/modifications to their original design proposals as necessary. • Student makes some well thought out modifications to their prototype in light of feedback from user trials and third party feedback and as a result of testing and evaluation carried out against earlier iterations of the prototype. • Quality assurance is evident at most stages in the process and it is clear where planned quality control checks have been applied to ensure consistency and safety. • There is evidence throughout the manufacturing process that appropriate health and safety processes have been both considered and employed.
7-12	• Adequate justification provided for selection of appropriate materials and components and proposed techniques and processes demonstrating an adequate understanding of material properties to ensure adequate quality prototype(s) that are mostly fit for purpose. • There is some complexity or challenge within aspects of the prototype. The student demonstrates adequate manufacturing skills combined with some understanding of the need for dimensional accuracy/precision. • The student has selected and used appropriate tools, machinery and equipment, including CAM where required, and worked with an adequate level of skill, precision and accuracy to produce their prototype(s). • Prototype(s) partially address the design brief, satisfying some of the major points of specification, but do not always take into account amendments/modifications to their original design proposals. • Student makes some superficial modifications to their prototype(s) in light of feedback from user trials and third party feedback and as a result of testing and evaluation carried out against earlier iterations of the prototype. • Quality assurance is evident at stages in the process and it is clear where quality control checks have been applied to ensure consistency and safety. • There is some evidence during the manufacturing process that appropriate health and safety processes have been both considered and employed.
1-6	• Little justification provided for selection of materials and components and proposed techniques and processes, not all of which may be appropriate, only a basic understanding of material properties demonstrated which may lead to the production of an inadequate prototype(s). • The development of the prototype(s) offers little in the way of complexity or challenge, only basic manufacturing skills are demonstrated, showing little understanding of the need for accuracy and precision. • The student has selected and used appropriate tools, machinery and equipment, including CAM where required, but has worked with only a basic level of skill, precision and accuracy to produce their prototype(s). • Prototype(s) address only few parts of the design brief, and few of the major points of specification, they do not take into account amendments/modifications to their original design proposals. • Student makes a few minor modifications to their prototype in light of feedback from user trials and third party feedback and as a result of testing and evaluation carried out against earlier iterations of the prototype. • Basic quality assurance is sporadic throughout the process and it is not always clear where quality control checks have been applied. • There is little evidence during the manufacturing process that appropriate health and safety processes have been both considered and employed.
0	Nothing worthy of credit.

Design prototypes need to be directly related to the design proposals and show consideration, at all stages, of how the design thinking continues to be developed and the prototype(s) refined.
It is expected that the student will demonstrate their practical skills to a high level using appropriate resources, tools, machines and equipment. During the development of their design prototype(s) the student should be encouraged to continue to experiment and to adapt their design proposals as they progress. Constant testing and evaluation is expected as forming part of this process. The use of CAM is encouraged, but this should not be the only form of manufacturing that is used. This should involve the use of specialist tools and equipment, which may include hand tools, machines or CAM.
It should be noted that it is not expected that the assessment criteria be seen as a linear process and aspects from this, and other assessment criteria, might be present throughout the student's portfolio. Wherever it takes place, it is expected that this work will be rewarded.

Section E Overall 20 marks (Analysing and Evaluating)



Checklist	
a) An analysis of the prototype is performed that includes testing against the specification.	
b) Evaluation of the prototype in meeting the needs, wants and values of the client/end user and specification.	
c) An analysis and evaluation of the impact on the environment, including life-cycle analysis of the final prototype.	

Notes:

Section E Overall 20 marks (Analysing and Evaluating)

16-20	• Comprehensive evidence of analysis and evaluation throughout the process, which has clearly informed the chosen context, client or user and the subsequent development and manufacture of the prototype. • Testing is carried out in a focused and comprehensive way with clear evidence of how the results have been used to inform the design and any modifications to the prototype. • Student has provided a well reasoned critical analysis of their final outcome which links clearly to their design brief and specification and provides full justification for the extent to which the prototype is both fit for purpose and meets the needs of the client/user. • A comprehensive critical evaluation of their final prototype, clearly identifying how modifications could be made to improve the outcome, together with a full justification for these modifications and full consideration provided for how the prototype could be developed for different production methods.
11-15	• Good evidence of analysis and evaluation at most stages of the process which has informed the chosen context, client or user and the subsequent development and manufacture of the prototype. • Testing is carried out in a focused manner with some evidence of how the results have been used either to inform the design or to make any modifications to the prototype. • Student has provided a reasoned critical analysis of their final outcome which links to their design brief and specification and provides some justification for the extent to which the prototype is fit for purpose and meets most of the client/user needs. • A good evaluation of their final prototype together with clear justification for modifications that could be made to improve the outcome and informed consideration provided for how the prototype could be developed for different production methods.
6-10	• Adequate evidence of analysis and evaluation at some stages of the process which has had some influence on the chosen context, client or user and the subsequent development and manufacture of the prototype. • Testing is carried out with minimal evidence that the results have been used to either inform the design or to make modifications to the prototype. • Student has provided an analysis of their final outcome with some links to their design brief and specification and makes reference to how the prototype is fit for purpose and meets some client/user needs. • An adequate evaluation of their final prototype together with some justification for modifications that could be made to improve the outcome as well as some consideration given to how the prototype could be developed for different production methods.
1-5	• Basic evidence of analysis and evaluation which has had limited influence upon the chosen context, client or user and the subsequent development and manufacture of the prototype. • Testing has been carried out but the results may not have been used to inform subsequent design or modifications to the prototype. • Student has provided a superficial analysis of their final outcome which may not refer to the design brief and specification and which does not address the extent to which the prototype is either fit for purpose or meets client/user needs. • Evaluation of final prototype is superficial and any suggestions for modifications are made with little if any justification and there is little or no consideration as to how the prototype could be developed for different production methods.
0	Nothing worthy of credit.

When awarding marks for this section it is vital to remember that evidence for analysing and evaluating can take place in any part of the NEA. Students should be encouraged to be constantly analysing their work and recording their thoughts in order to explain their thinking. Ongoing evaluation should be seen to be informing the decision making process, particularly being used to bring about modifications to design proposals and prototype development. Central to this is the close and regular involvement of the proposed client/user(s) making sure that the prototype is both fit for purpose and meets the requirements of the client/user(s) rather than just meeting those of the student.