

Non-examined assessment criteria

Teachers must mark students' work using the following assessment criteria grids. Please refer to the 'General Marking Guidance' provided in the CAB for further information on how to apply these assessment criteria grids accurately.

1 – Investigate

Please refer to the information given on *pages 55 to 56* relating to the content outlined for this grid.

Level	Mark	1.1 Investigation of needs and research (AO1 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> Evidence of limited investigation and identification of partially relevant design possibilities, which are partially justified in relation to the contextual challenge. Basic assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with limited appropriate reference to form and function. Superficial evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.
Level 2	4–6	<ul style="list-style-type: none"> Evidence of adequate investigation and identification of some relevant design possibilities, which are mostly justified in relation to the contextual challenge. Mostly developed assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with some appropriate reference to form and function. Some developed evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.
Level 3	7–8	<ul style="list-style-type: none"> Evidence of developed investigation and identification of relevant design possibilities, which are fully justified in relation to the contextual challenge. Developed assessment of user needs and wants and the requirements of the prototype in response to the contextual challenge, with fully appropriate reference to form and function. Fully developed evidence of links between the design requirements and the research undertaken in relation to the contextual challenge.

Level	Mark	1.2 Specification (AO1 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Basic design brief that demonstrates a simplistic response to the contextual challenge, addressing some of the investigated needs and wants of the user. • Limited range of specification points that are basic and partially measurable, based on a superficial investigation of research in relation to the contextual challenge. • Basic justification of the performance requirements for the product in relation to the contextual challenge.
Level 2	4–6	<ul style="list-style-type: none"> • Generally sound design brief that demonstrates a coherent response to the contextual challenge, addressing many of the investigated needs and wants of the user. • Mostly developed range of specification points that are realistic and mostly measurable, based on a mostly relevant investigation of research in relation to the contextual challenge. • Generally sound justification of the performance requirements for the product in relation to the contextual challenge.
Level 3	7–8	<ul style="list-style-type: none"> • Fully sound design brief that demonstrates a realistic response to the contextual challenge, addressing most of the investigated needs and wants of the user. • Fully developed range of specification points that are realistic, technical and measurable, based on a fully relevant investigation of research in relation to the contextual challenge. • Fully sound justification of the performance requirements for the product in relation to the contextual challenge.

2 – Design

Please refer to the information given on *pages 56 and 57* relating to the content outlined for this grid.

Level	Mark	2.1 Design ideas (AO2 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Basic selection and use of design strategies to inform decisions to generate a limited range of simplistic design ideas in response to the contextual challenge. • Limited consideration for the user needs and specification parameters. • Ideas demonstrate a basic understanding of some materials and processes.
Level 2	4–6	<ul style="list-style-type: none"> • Generally appropriate selection and use of design strategies to inform decisions to generate a range of design ideas in response to the contextual challenge. • Generally sound consideration for the user needs and specification parameters. • Ideas demonstrate a generally sound understanding of relevant materials, processes and techniques.
Level 3	7–8	<ul style="list-style-type: none"> • Fully appropriate selection and use of design strategies to inform decisions to generate a wide range of design ideas in response to the contextual challenge. • Fully sound consideration for the user needs and specification parameters. • Ideas demonstrate a fully sound understanding of relevant materials, processes and techniques.

Level	Mark	2.2 Review of initial ideas (AO3 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Superficial analysis of design ideas in response to the contextual challenge, which considers basic factors and makes limited connections between elements of the design. • Basic evaluation of design ideas leading to a limited refinement and development of designs, demonstrating a limited understanding of design considerations.
Level 2	4–6	<ul style="list-style-type: none"> • Generally developed analysis of design ideas, leading to appropriate refinement and development of designs, which considers appropriate factors and makes mostly relevant connections between elements of the design. • Competent evaluation of design ideas leading to appropriate refinement and development of designs, demonstrating a mostly sound understanding of design considerations.
Level 3	7–8	<ul style="list-style-type: none"> • Fully developed analysis of design ideas leading to effective refinement and development of designs, which considers comprehensive factors and makes fully relevant connections between elements of the design. • Effective evaluation of design ideas leading to considered refinement and development of designs, demonstrating a fully sound understanding of design considerations.

Level	Mark	2.3 Development of design ideas into a chosen design (AO1 4 marks AO2 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> Limited use of research to inform ongoing developmental changes. Basic refinements of design ideas and a design solution that partially meets the design specification, informed by the basic application of technical knowledge of materials and a limited application of modelling/simulation techniques. Chosen design idea shows superficial technical details of some materials and components that could be interpreted by a third party.
Level 2	4–6	<ul style="list-style-type: none"> Some appropriate use of research to inform ongoing developmental changes. Some sound refinements of design ideas and a design solution that generally meets the requirements of the design specification, informed by the generally sound application of technical knowledge of materials and/or processes and the mostly appropriate application of modelling/simulation techniques. Chosen design idea shows generally appropriate application of calculations to determine some material quantities and technical details of most materials and components that could be interpreted by a third party.
Level 3	7–9	<ul style="list-style-type: none"> Generally appropriate use of research to inform ongoing developmental changes. Generally sound refinements of design ideas and a design solution that mostly meets the requirements of the design specification, informed by the mostly sound application of technical knowledge of materials and processes and the fully appropriate application of modelling/simulation techniques. Chosen design idea shows mostly appropriate application of calculations to determine most material quantities and technical details of materials, processes and components that could be interpreted by a third party.
Level 4	10–12	<ul style="list-style-type: none"> Fully appropriate use of research to inform ongoing developmental changes. Fully sound refinements of design ideas and a design solution that fully meets the requirements of the design specification, informed by the fully sound application of technical knowledge of materials and processes and the effective application of modelling/simulation techniques. Chosen design idea shows fully appropriate application of calculations to determine all material quantities and technical details of materials, processes and components that could be interpreted by a third party.

Level	Mark	2.4 Communication of design ideas (AO2 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Basic selection and partially appropriate use of graphical techniques to communicate design ideas. • Basic selection and partially appropriate use of computer-aided design (CAD) techniques to communicate design ideas. • Basic selection and partially appropriate use of written techniques to communicate design ideas.
Level 2	4–6	<ul style="list-style-type: none"> • Relevant selection and generally appropriate use of graphical techniques to communicate design ideas. • Relevant selection and generally appropriate use of computer-aided design (CAD) techniques to communicate design ideas. • Relevant selection and generally appropriate use of written techniques to communicate design ideas.
Level 3	7–8	<ul style="list-style-type: none"> • Considered selection and fully appropriate use of techniques to communicate design ideas. • Considered selection and fully appropriate use of computer-aided design (CAD) techniques to communicate design ideas. • Considered selection and fully appropriate use of written techniques to communicate design ideas.

Level	Mark	2.5 Review of chosen design (AO3 6 marks)
	0	No rewardable material.
Level 1	1–2	<ul style="list-style-type: none"> • Superficial analysis of the refinements made to the chosen design in response to the contextual challenge, which considers a limited range of factors and makes partially appropriate connections between elements of the design. • Basic evaluation of the refinements made to the chosen design, with limited reference to feedback made by others, and the consideration of the materials and components.
Level 2	3–4	<ul style="list-style-type: none"> • Generally developed analysis of the refinements made to the chosen design in response to the contextual challenge, which considers a generally relevant range of factors and makes mostly appropriate connections between elements of the design. • Competent evaluation of the refinements made to the chosen design, with mostly sound reference to feedback made by others, and the consideration of the materials, components and manufacturing techniques.
Level 3	5–6	<ul style="list-style-type: none"> • Fully developed analysis of the refinements made to the chosen design in response to the contextual challenge, which considers fully appropriate factors and makes fully appropriate connections between elements of the design. • Effective evaluation of the refinements made to the chosen design, supported by fully sound reference to feedback made by others and the consideration of the materials, components and manufacturing techniques.

3 – Make

Please refer to the information given on *page 58* relating to the content outlined for this grid.

Level	Mark	3.1a Manufacture – selection of materials (AO2 8 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none">• Basic selection of materials that are generally appropriate for the chosen prototype.• Show limited understanding of the material properties of the materials used in the prototype.
Level 2	4–6	<ul style="list-style-type: none">• Considered selection of materials that are mostly appropriate for the chosen prototype.• Show a generally sound understanding of material properties of the materials used in the prototype.
Level 3	7–8	<ul style="list-style-type: none">• Effective selection of materials that are fully appropriate for the chosen prototype.• Show a fully sound understanding of material properties of the materials used in the prototype.

Level	Mark	3.1b Manufacture – skills and processes (AO2 16 marks)
	0	No rewardable material.
Level 1	1–4	<ul style="list-style-type: none"> • Produce a prototype that demonstrates basic making skills. • Basic selection of materials, fixtures, components and fittings, which are generally appropriate for the chosen prototype. • Simplistic use of tools, equipment and techniques for the manufacture of the prototype. • Demonstrate an adequate degree of safe working practice for self and others.
Level 2	5–8	<ul style="list-style-type: none"> • Produce a prototype that demonstrates generally competent making skills. • Generally considered selection of materials, fixtures, components and fittings, which are mostly appropriate for the chosen prototype. • Generally competent use of tools, equipment and techniques for the manufacture of the prototype. • Demonstrate a generally high degree of safe working practice for self and others.
Level 3	9–12	<ul style="list-style-type: none"> • Produce a prototype that demonstrates mostly competent making skills. • Mostly considered selection of materials, fixtures, components and fittings, which are fully appropriate for the chosen prototype. • Mostly competent use of tools, equipment and techniques for the manufacture of the prototype. • Demonstrate a high degree of safe working practice for self and others.
Level 4	13–16	<ul style="list-style-type: none"> • Produce a prototype that demonstrates fully competent making skills. • Fully considered selection of fixtures, components and fittings, which are entirely appropriate for the chosen prototype. • Fully competent use of tools, equipment and techniques for the manufacture of the prototype. • Demonstrate a sustained high degree of safe working practice for self and others.

Level	Mark	3.2 Quality and accuracy (A02 12 marks)
	0	No rewardable material.
Level 1	1–3	<ul style="list-style-type: none"> • Produce a simplistic prototype that partially meets the end user needs in relation to a basic design problem. • Produce a prototype that meets limited aspects of the design specification. • Show a basic understanding of the need for accuracy.
Level 2	4–6	<ul style="list-style-type: none"> • Produce a generally functioning prototype that adequately meets the end user needs in relation to a partially demanding design problem. • Produce a prototype that meets some aspects of the design specification. • Show a partially sound understanding of the need for accuracy.
Level 3	7–9	<ul style="list-style-type: none"> • Produce a mostly functioning prototype that mostly meets the end user needs in relation to a generally demanding design problem. • Produce a prototype that mostly meets the design specification. • Show a generally sound understanding of the need for accuracy.
Level 4	10–12	<ul style="list-style-type: none"> • Produce a fully functioning prototype that fully meets the end user needs in relation to a demanding design problem. • Produce a prototype that fully meets the design specification. • Show a fully sound understanding of the need for accuracy.

4 – Evaluate

Please refer to the information given on *page 58* relating to the content outlined for this grid.

Level	Mark	4.1 Testing and evaluation (AO3 6 marks)
	0	No rewardable material.
Level 1	1–2	<ul style="list-style-type: none">• Superficial analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a partially considered approach to testing against measurable criteria.• Basic evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing partially appropriate conclusions from testing against measurable criteria.
Level 2	3–4	<ul style="list-style-type: none">• Generally developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a generally considered approach to testing against measurable criteria.• Competent evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing generally appropriate conclusions from testing against measurable criteria.
Level 3	5–6	<ul style="list-style-type: none">• Fully developed analysis of the prototype developed in response to the contextual challenge, taking into account the end user and product specification, and showing a fully considered approach to testing against measurable criteria.• Effective evaluation of the prototype, taking into account the intended purpose of the prototype, including its sustainability through a life cycle analysis and drawing fully appropriate conclusions from testing against measurable criteria.

Security and backups

It is the centre's responsibility to keep the work that students have submitted for assessment secure.

Secure storage is defined as a securely-locked cabinet or cupboard. As students are producing prototypes, secure storage is defined as a classroom studio or workshop that is locked or supervised from the end of one session to the start of the next.

The rules on storage also apply to electronic data. For example, centres should collect memory sticks for secure storage between sessions or restrict student access to specific areas of the centre's IT network.

For materials stored electronically, centres are strongly advised to use firewall protection and virus-checking software, and to employ an effective backup strategy, so that an up-to-date archive of students' evidence is maintained.

Further information

For up-to-date advice on teacher involvement and administration of non-examination assessments, please refer to the Joint Council for Qualifications (JCQ) document *Instructions for conducting non-examination assessments (new GCE and GCSE specifications)* available on the JCQ website: www.jcq.org.uk

Assessment Objectives

Students must:		% in GCSE
AO1	Identify, investigate and outline design possibilities to address needs and wants	10
AO2	Design and make prototypes that are fit for purpose	30
AO3	Analyse and evaluate: <ul style="list-style-type: none"> design decisions and outcomes, including for prototypes made by themselves and others wider issues in design and technology 	20
AO4	Demonstrate and apply knowledge and understanding of: <ul style="list-style-type: none"> technical principles designing and making principles 	40
Total		100%

Breakdown of Assessment Objectives

Component	Assessment Objectives				Total for all Assessment Objectives
	AO1 %	AO2 %	AO3 %	AO4 %	
Component 1	0	0	10	40	50%
Component 2	10	30	10	0	50%
Total for GCSE	10%	30%	20%	40%	100%