4- Evaluate

4.1 Testing and Evaluation (AO3 6 marks)

Exemplars of 4.1 Testing and evaluation
Use this live link to view the latest exemplar materials for this assessment grid.

Stage	What students need to do:	
4.1 Testing and evaluation	4.1a	Analyse the prototype against the product specification by conducting a variety of tests under realistic conditions, to ensure fitness for purpose.
	4.1b	Analyse the results of the prototype testing.
	4.1c	Evaluate whether the prototype meets the product specification.
	4.1d	Evaluate the sustainability of the final prototype by carrying out a life cycle assessment (LCA), in order to assess its impact on the environment.

What the NEA content requires students to do:

4.1a Analyse the prototype against the product specification by conducting a variety of tests under realistic conditions, to ensure fitness for purpose.
Students are required to test their final prototype with the user/client or user group. Each test will be focused on a measurable point from the specification and must include the performance criteria.

4.1b Analyse the results of the prototype testing.
Students are required to analyse how their prototype performed against the measurable specification points. This analysis should be a discussion about how each test did or did not validate the prototype.

4.1c Evaluate whether the prototype meets the product specification.
Students are required to critically judge if their prototype met, partially met, or did not meet each specification point. There is no loss of credit where a prototype fails to meet criteria but has attempted to.

4.1d Evaluate the sustainability of the final prototype by carrying out a life cycle assessment (LCA) in order to assess its impact on the environment.
Students are required to carry out an LCA based on their final made prototype. Prototypes specifically designed with sustainability criteria, will be able to reference to this in the LCA.

Level	Mark	4.1 Testing and evaluation (AO3 6 marks)
	0	No rewardable material.
Level 1	1–2	• 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 measureable criteria.
Level 2	3–4	• 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 measureable criteria.
Level 3	5–6	• 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 measureable criteria.

How this assessment grid differentiates student evidence of testing and evaluation.
Testing and evaluation evidence will be differentiated by the following factors:

1. Has the student carried out and evidenced 3-4 valid tests against measurable criteria from their specification, including the criteria relating to performance?
2. Has the student carried out a full analysis against all of the specification criteria or not?
3. Has one or more real users been involved during testing and review work to confirm the suitability of the prototype?
4. Does the LCA consider technical factors such as impact of materials, processes, techniques, and assembly choices for the final prototype?

Audio or video evidence are best suited to capturing real time testing and review work engaged with a user and can support evidence relating to 3.2 Quality and Accuracy, where a judgement is made about the functionality of the final prototype.

Evidence relating to future improvements or modifications to the prototype is not a requirement therefore not credit worthy.

Advice for scaled outcome projects.
Students should conduct an LCA in relation to their final made outcome, not for the full-sized outcome.