

3- Manufacture

3.1a Manufacture – selection of materials (AO2 marks)

3.1b Manufacture – skills and processes (AO2 16 marks)

Exemplars of 3.1a Manufacture – selection of materials

Use [this live link](#) to view the latest exemplar materials for this assessment grid.

Exemplars of 3.1b Manufacture – skills and processes

Use [this live link](#) to view the latest exemplar materials for this assessment grid.

Stage	What students need to do:
3.1 Manufacture	<p>3.1a Production of a prototype that meets the requirements of the design brief and product specification, showing a wide range of making skills with precision and accuracy.</p> <p>3.1b Selection and application of:</p> <ul style="list-style-type: none"> a material b range of tools, including marking-out tools, hand tools and machinery c range of techniques d fixtures, templates, jigs and/or patterns e components f surface treatments and finishes <p>used in the manufacture of the prototype.</p> <p>3.1c Demonstration of safe working practice, for themselves and others.</p>

What the NEA content requires students to do:

3.1a Production of a prototype that meets the requirements of the design brief and product specification, showing a wide range of making skills with precision and accuracy.

Students are required to conclusively communicate how they intend to manufacture the prototype. The complexity of making skills exemplified, the precision and accuracy of the making achieved, and the demand of the overall make task, should be GCSE appropriate.

3.1b Selection and application.

Students are required to make and evidence decisions in relation to tools, equipment, and techniques and show their application when making the prototype. This includes decisions relating to fixtures, components, and the fittings which will be off the shelf parts.

GCSE Design and Technology – NEA Guide

3.1c Demonstration of safe working practice.

Students are required to evidence their ability to carry out practical activity using safe working practices that account for both themselves and for others. Others will include other students and teachers in the workshop. This will be through photographic evidence as the most appropriate method to formulate and support a judgement.

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.

How this assessment grid differentiates student evidence of manufacture.

Selection of materials evidence differentiates based upon one page (depending on the complexity of the prototype being made) of independent materials selection information that is generated by the student (i.e. not copied from another source). This should account for:

1. All of the materials to be used for the prototype (not just those which form the majority of the making task) and their *material properties*.
2. Sufficient material information to source each *material stock form* prior to the manufacture.
3. An outline of the materials' *working properties* that justify their selection for the prototype.

Evidence of authentic material selection will/could already be in the development work (i.e. annotation exploring material, process and technique options) and complement this evidence. Generic material information duplicated from existing sources (textbooks, web sources, generative AI, etc) will receive no credit.

For guidance on generative AI, please refer to JCQ guidance using the following links:

[AI Use in Assessments: Protecting the Integrity of Qualifications](#)
[Information for candidates Coursework assessments](#)

Advice for scaled outcome projects.

If the student has committed to the manufacture of a scaled model as the prototype during the development, material selection evidence relating to the making of a scaled model will be evident in both the development evidence and selection of material evidence.

If the student has committed to the manufacture of a scaled model as the prototype after the development, material selection evidence relating to a scale model will only be evident in the selection of material evidence, with full scale materials considered in all previous evidence.

GCSE Design and Technology – NEA Guide

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 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 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 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.

How this assessment grid differentiates student evidence of manufacture.

Skill and process evidence will require sufficient photographic or video evidence that shows all of the making that the student has carried out, to support a marking judgement for grid 3.1b during moderation. Students must make the chosen design they developed, as this will allow for testing against the specification. High level evidence will:

1. Include authentic photographic evidence of the skills and processes students are applying through the use of tools, equipment, and techniques to the making of the prototype (supported by annotation of what they are seeking credit for).
2. Include evidence of decision making around final choices for fixtures, components, and fittings in photographs (supported by annotation explaining the decision process).
3. Include evidence of accounting for safe working practice as consistently as possible throughout the stages of making (supported by annotation explaining the students actions and how these account for themselves and others in the workshop environment). A holistic

GCSE Design and Technology – NEA Guide

judgement of photographic evidence should be taken in relation to awareness of safe working practice.

Important note:

It is invalid to credit skills that are not shown through photographic evidence involving the student (if making by a teacher or technician has occurred, this should be acknowledged in the CAB).

Advice for scaled outcome projects.

If the student has committed to the manufacture of a scaled model as the prototype after they have completed their development, review of development and materials selection, it is important that students take the following actions:

1. Ensure material, process, and technique choices are appropriate to scaled model making (i.e. materials with appropriate functional and aesthetic qualities to suit working to a much smaller set of measurements).
2. Ensure that scaled making remains sufficiently complex in level of demand, to avoid the limitations that scale “modelling” can have in relation to process and technique application.
3. Ensure there is the inclusion of an updated list of specification criteria, which relate to a scaled outcome and not a full-scale prototype. (The changes to the criteria will help the student carry out authentic testing by a user/client or user group in 4.1).
4. Ensure that the specification criteria re-written for a scaled outcome will permit suitably rigorous testing of aspects of performance and function of the prototype for evidence in 4.1.