Te Poutāhū
Curriculum Centre

Materials and Processing Technology NCEA NZC Level 1
Subject Learning Outcomes for Assessment

Companion to the Materials and Processing Technology Learning Matrix

What are the Subject Learning Outcomes and how can I use them?

Subject Learning Outcomes identify the knowledge and skills that students need to be ready for assessment. Subject Learning Outcomes are informed by the Achievement Standards. They should be used in conjunction with the full suite of NCEA materials. For guidance on assessment criteria, please also refer to the Achievement Standards, Unpacking, and External Assessment Specifications or Conditions of Assessment as appropriate.

Subject Learning Outcomes do not replace any documents. This includes the External Assessment Specifications and Conditions of Assessment. All NCEA materials need to be used to fully understand the requirements of each Achievement Standard and to plan a robust teaching, learning, and assessment programme. Subject Learning Outcomes should not be used to make assessor judgments. The Achievement Standard and the Assessment Schedule for Internal Assessment Activities are used to make such judgments.

Subject Learning Outcomes, alongside other key documents, make clear to teachers what to include in their teaching and learning programmes and what student capabilities to check for, in the lead up to assessment. Each Subject Learning Outcome does not need the same amount of teaching time.

All learning should connect with students' lives in Aotearoa New Zealand and the Pacific. Teachers or students usually select the contexts. As such, contexts are not always specified in the Subject Learning Outcomes. Examples may be provided to illustrate topics and contexts, but they are not prescriptive.

Students are entitled to teaching that supports them to achieve higher levels of achievement. Subject Learning Outcomes mainly align with outcomes for the Achieved level. However, outcomes for higher levels of achievement are also included.

The knowledge and skills in the Subject Learning Outcomes are the expected learning that underpins each Achievement Standard. Students will draw on this learning during assessment. It is important to note that assessment is a sampling process so not everything that is taught will be assessed.

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Achievement Standard 1.1 (92012): Develop a Materials and Processing Technology outcome in an authentic context (6 Credits)

What is being assessed	Subject Learning Outcomes
Use of Technological Practice	Students are able to: • use technological practice to develop and create a physical Materials and Processing Technology outcome for a person, whānau or community within an authentic context. Students will develop a brief with specifications (including physical and functional) or use a given brief with specifications to outline the 'W's and H' — the who, what, when, where, why, and how, of the development process and outcome. For higher levels of achievement, students are able to: • seek, record, and apply stakeholder feedback to guide the development and creation of the outcome • refine the given brief with specifications to guide the development and creation of the outcome.
Evaluation of Technological Practice	Students are able to: • assess the outcome against the brief with specifications to show how the outcome is fit for purpose. For higher levels of achievement, students are able to: • evaluate the outcome for the end user or user against the brief with specifications, either in the situation it has been created for or in a modelled situation • explain decisions that improve the outcome's fitness for purpose and its ability to meet the requirements of the brief with specifications.

Achievement Standard 1.2 (92013): Experiment with different materials to develop a Materials and Processing Technology outcome (6 Credits)

What is being assessed	Subject Learning Outcomes
Experimenting to explore materials	Students are able to: • investigate a variety of materials by exploring their properties for the purpose of discovery • develop and create a purposeful outcome to meet a need or opportunity for a person, whānau, or community. This involves: ○ exploring materials through experimentation. They could try transforming, or combining, or manipulating, or forming, or a combination of all four.

	○ demonstrating what they know about the properties of different materials, for example exploring the feasibility of transforming, or combining, or manipulating, or forming materials, or a combination of all four, and understand what they might be best used for. For higher levels of achievement, students are able to: • extend their understanding by carrying out ongoing investigation and analysis, incorporating iterative 'what if' questions • incorporate stakeholder feedback to guide the development of the purposeful outcome • use ongoing analysis to refine and justify the use of the chosen materials • explain decisions and reasons for choice about the selected material or materials and their properties as they develop and create a purposeful outcome.

Achievement Standard 1.3 (92014): Demonstrate understanding of sustainable practices in the development of a Materials and Processing Technology design (4 Credits)

What is being assessed	Subject Learning Outcomes
Sustainable practice in the development of a Materials and Processing Technology outcome	Students are able to: • develop a Materials and Processing Technology design. This involves investigating and applying sustainable practices. They will also apply stakeholder feedback to inform decision making and guide the application of sustainable practices during the development of the design. • discuss kaitiakitanga in the context of applying sustainable practices for the environment during the development of their design. Examples of ways students can fulfil their responsibility towards the environment include: ○ the selection of materials ○ the economic use of materials ○ the appropriate disposal of waste materials. • use a design process for a person, whānau, or community that may include: ○ ongoing research ○ developing initial concept designs ○ refining and developing the design. For higher levels of achievement, students are able to: • seek, record, and apply stakeholder feedback to refine design development • reflect on how stakeholder feedback informs design development

	• explain and evaluate decisions and reasons for choice about the sustainable practices applied to the design.

Achievement Standard 1.4 (92015): Demonstrate understanding of techniques selected for a feasible Materials and Processing Technology outcome (4 Credits)

What is being assessed	Subject Learning Outcomes
Trial, describe and select appropriate techniques	Students are able to: • investigate and trial relevant techniques during the development of a feasible outcome. This involves describing and then selecting the most appropriate techniques for the feasible outcome. For higher levels of achievement, students are able to: • compare the most appropriate techniques to inform decision making in the refinement of the feasible outcome • seek, record, and apply stakeholder feedback in decision making for the feasible outcome • analyse trialling techniques and stakeholder feedback and explain how these combine to inform and improve the feasibility of the outcome.