

Title	Apply a problem-solving model to familiar and unfamiliar complex composite problems		
Level	6	Credits	20

Purpose	People credited with this standard are able to: evaluate problem-solving models for familiar and unfamiliar complex composite problems, identify and analyse possible solutions; and apply a problem-solving model, implement solutions and review and evaluate the results.
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Classification	Composites > Production Composites
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Available grade	Achieved
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Guidance Information

- 1 Definitions

Complex problems are typically defined as those that include the ability to approach them from multiple, sometimes competing, perspectives and which may have multiple possible solutions.

Workplace policies and procedures refers to the documented procedures and policies providing guidelines of the tasks and activities carried out in the workplace. This typically includes relevant health and safety policies to manage risk in the workplace.
- 2 For assessment against this standard the problem must be one of complexity that requires definition, analysis, evaluation and review in alignment with the NZQA level 6 requirements.
- 3 People should be assessed against this unit standard in a real-life context using naturally occurring evidence or in simulated conditions that demand performance equivalent to that required in the real-life context.
- 4 Where naturally occurring evidence is used for assessment against this unit standard, a verifier's checklist is acceptable if accompanied by evidence that includes examples from the candidate's performance.
- 5 All work practices must meet recognised codes of practice and documented worksite health and safety procedures (where these exceed code) for personal, product, and worksite health and safety, and must meet the obligations required under the Health and Safety at Work Act 2015 and Resource Management Act 1991, and any subsequent amendments.
- 6 Range

evidence of at least one familiar problem

evidence of at least one unfamiliar problem.

Outcomes and performance criteria

Outcome 1

Evaluate problem-solving models for familiar and unfamiliar complex composite problems.

Performance criteria

1.1 Problem-solving models are evaluated in terms of their intent and purpose in accordance with workplace policies and procedures.

Range models may include but are not limited to – Fred Nickols' Four-Step Model, The IDEAL Problem-Solving Model, The Kepner-Tregoe Method, Lean Six Sigma (DMAIC) Process, The Six-Step Model, Synectic's, TRIZ, The 5 Whys.
evidence of two models is required.

1.2 Advantages and disadvantages of evaluated models are explained in terms of their intent and purpose in relation to the complex problems.

Outcome 2

Examine familiar and unfamiliar complex composite problems, and identify and analyse possible solutions.

Performance criteria

2.1 The familiar and unfamiliar complex composite problems are examined, and a suitable problem-solving model is selected in accordance with workplace policies and procedures.

Range may include – problem parameters, stakeholders, possible causes, historical influences, relevant facts, other contributing factors.
evidence of four is required.

2.2 Possible solutions to the familiar and unfamiliar complex composite problems are identified and analysed using the appropriate model.

Range analysis includes – problem identification, root cause analysis, selection of appropriate strategy.

2.3 Criteria for evaluating solutions is established to match both familiar and unfamiliar complex composite problems.

Outcome 3

Apply a problem-solving model, implement solutions, and review and evaluate the results.

Performance criteria

- 3.1 Selected problem-solving model is applied in accordance with the identified problem solutions and workplace policies and procedures.
- 3.2 Problem solution is implemented in accordance with the problem-solving model and problem requirements.
- 3.3 Implementation results are reviewed and evaluated in accordance with the applied model and workplace policies and procedures, and any changes are implemented if required, and documented for continual improvement.

Planned review date	31 December 2027
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Status information and last date for assessment for superseded versions

Process	Version	Date	Last Date for Assessment
Registration	1	25 August 2022	N/A

Consent and Moderation Requirements (CMR) reference	0136
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This CMR can be accessed at <http://www.nzqa.govt.nz/framework/search/index.do>.

Comments on this unit standard

Please contact Hanga-Aro-Rau Manufacturing, Engineering and Logistics Workforce Development Council qualifications@hangaarorau.nz if you wish to suggest changes to the content of this unit standard.