Achievement Standard

Subject Reference	Information and Communication Technology 2.2
Title	Develop and implement a one-off solution in information and communication technology

Level 2 **Credits** 6 **Assessment** Internal

Subfield Technology

Domain Technology – General Education

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This achievement standard involves the formulation of a brief, and the use of planning, to develop and implement a one-off solution to address an identified issue in information and communication technology.

Student Issue:

With growing numbers of people using computers for communications on a daily basis opportunities arise for the production of personalised soft copy gifts that could be used for instance in the place of traditional gifts. You are asked to identify a situation to develop a suitable personalised electronic gift, and a process for the ongoing personalisation of the gift to be suitable for alternative situations.

You are asked to present evidence within your complete technological practice. This means that you will have to identify a situation for the development of your initial gift, as well as develop and implement your solution for the gift.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
• Identify key factors and their implications in formulating a brief to address an identified issue.	• Prioritise key factors, explaining their implications and interactions, in formulating a brief to address an identified issue.	• Prioritise key factors, explaining their implications and interactions, in formulating a brief to address an identified issue.
• Use planning to guide ongoing development work.	• Use planning to develop, review and revise ongoing development work.	• Use planning to develop, review and revise ongoing development work and to pre-empt anticipated problems and/or overcome actual problems and/or maximise opportunities.

Achievement	Achievement with Merit	Achievement with Excellence
• Develop and implement the one-off solution to demonstrate its fitness for purpose in addressing the issue.	• Develop and implement the one-off solution to demonstrate its fitness for purpose in addressing the issue and concerns of key stakeholders.	• Develop and implement the one-off solution to demonstrate its fitness for purpose in addressing the issue and concerns of key stakeholders. Justify the viability of the solution.

Explanatory Notes

1   This achievement standard is derived from *Technology in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1995; Level 7, and *Hangarau i roto i te Marautanga o Aotearoa*, Te Tāhuhu o te Mātauranga, 1999.

2   Useful information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools*, Learning Media, Ministry of Education, 1998; and in the Health and Safety in Employment Act 1992.

3   The *issue* needs to be identified by the student from a teacher-given context. The issue may be personal to the student, or one owned by others. This issue will generate a range of needs or opportunities for technological practice.

4   *One-off solution* means a solution for which the implementation of a single constructed solution fully resolves the issue. A one-off solution is a completed product, system, or environment.

5   *Develop and implement* includes all aspects of technological practice from the identification of the issue through to the implementation and evaluation of the one-off solution. *Implement* means to locate and test the solution in its intended environment to demonstrate its fitness for purpose.

6   A *brief* is a clear description of both the desirable outcomes sought and the constraints to be met by a successful technological outcome. A brief commences with a conceptual statement of the need, issues, or opportunity being addressed, and also contains the detailed specifications against which the success or otherwise of the outcome can be tested. Ideally, the brief is fully researched and defined in advance of development of the technological outcome but often, as the development work proceeds, the knowledge and understanding of the technologist improves sufficiently that refinements (usually improvements) are made to the brief and its specifications.

7 *Planning* is used to structure technological practice into manageable stages and establish key milestone dates and expected outcomes. Planning includes such things as identifying how key resources, which may include (but are not limited to) time, expertise, materials and finance, are allocated and used efficiently during the development of a technological outcome. Planning is critical to ensure that effective consultation with stakeholders will be carried out so that all constraints and requirements are met and/or opportunities are optimised. Tools that are used for planning will depend on the nature and the stage of the technological practice being undertaken. Planning tools include such things as plans of action, Gantt charts, flow charts, block sequence diagrams, journal notes.

Planning must reflect the dynamic and evolving nature of development work due to the ongoing evaluations and subsequent modifications and/or refinements. Regular reviews of planning tools should be undertaken and required changes made to ensure remaining time and resources are allocated to achieve the desired technological outcome.

8 Evidence of planning needs to be demonstrated throughout the student's entire technological practice.

9 *Key factors* are those that contribute both directly and indirectly to a specific technological practice and may include:
- broader factors, such as legal, social, cultural, political, environmental and economic factors including consideration of global and future trends, and culture of technological innovation
- stakeholder factors, such as beliefs, ethics, values, ability to access knowledge and skills, and social position
- knowledge and skills available that may underpin the development and use of the given technology.

10 *Viability of the one-off solution* refers to the capacity to meet the specifications of the brief, address possible social and environmental impact(s), meet likely future demand, and address availability of resources for its maintenance.

11 *Key stakeholders* are those stakeholders who have a vested interest in the identified issue. Key stakeholders will value and expect a high quality solution.

Quality Assurance

1 Providers and Industry Training Organisations must be accredited by the Qualifications Authority before they can register credits from assessment against achievement standards.

2 Accredited providers and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Accreditation and Moderation Action Plan (AMAP) reference 0226