Achievement Standard

Subject Reference	Information and Communication Technology 3.7
Title	Demonstrate techniques in information and communication technology
Level	3
Credits	4
Assessment	Internal
Subfield	Technology
Domain	Technology – General Education
Registration date	18 January 2006
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This achievement standard involves demonstrating techniques when developing an information and communication technology (ICT) outcome(s).

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
• Demonstrate techniques when developing an ICT outcome(s).	• Demonstrate complex techniques when developing an ICT outcome(s).	• Demonstrate a combination of complex techniques that lead to a high quality ICT outcome(s).

Explanatory Notes

1 This achievement standard is derived from *Technology in the New Zealand Curriculum*, Learning Media, Ministry of Education, 1995, Level 8; and *Hangarau i roto i te Marautanga o Aotearoa,* Te Pou Taki Kōrero, Te Tāhuhu o te Mātauranga, 1999.

2 Appropriate reference information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools,* Learning Media, Ministry of Education, 1998; and the *Health and Safety Code of Practice for State Primary, Composite and Secondary Schools,* Learning Media, Ministry of Education, 1993.

3 *Techniques* in ICT refer to things such as:
- database programmes
- CAD programmes
- 3 dimensional (3D) modelling programmes
- webpage design programmes

- graphic enhancement programmes
- animation of 2 dimensional (2D) and 3D models
- video/picture capturing, enhancement and reproduction technologies
- sound recording/creating technologies
- producing a website or multi-media CD with effective navigation tools embedded to manage a range of data inputs, eg pictures, text, sound, animations, movies
- developing a multiple layout database incorporating scripts and/or calculations to aid the navigation or data summary/presentation
- using macros in a package interacting with data from an external database or source, eg another file or data logging device
- advanced computer programming, eg programming to control environment responsive systems
- producing a print media solution containing original graphics and text to a commercial standard, and suitable for commercial printing
- developing computer simulations
- creating complex 3D models, eg each 3D model includes a combination of elements such as multiple textures, animations to show function or form.

4 *Technique* refers to a combination of skills carried out in a particular order for a particular purpose. The selection of techniques is context specific. *Complex techniques* require a combination of techniques carried out in a particular order for a particular purpose.

5 A *high quality ICT outcome* is one that is fully fit for purpose, and in addition displays attributes that show a combination of complex techniques have been implemented successfully. 'Fit for purpose' is a term used to judge the ability of the ICT outcome to serve its purpose to 'do the job' within the intended location, where the 'job to be done' is clearly defined by the brief. Referring to 'fit for purpose' in its broadest sense within technology education, extends this usage to include the determination of the fitness of the practices involved in the development of the ICT outcome, as well as the fitness of the ICT outcome itself, for the identified purpose. Exploration of relevant codes of practice, legal requirements and understandings of ethical and cultural ways of practising, will therefore be important aspects of establishing 'fit for purpose'. In demonstrating 'fit for purpose' the student is expected to incorporate and evaluate feedback from relevant stakeholders.

6 Techniques in ICT may be demonstrated in the production of models, prototypes, one-off solutions or products from multi-unit production.

7 Techniques performed need to be performed in keeping with relevant codes of practice that include:

- legal responsibilities including:
  - Acts (eg Fair Trading Act 1986, Consumer Guarantees Act 1993, Health and Safety in Employment Act 1992, Privacy Act 1993, Employment Relations Act 2000, Resource Management Act 1991, Hazardous Substances and New Organisms Act 1996)
  - Standards (eg ISO standards – 9000, 14000 series, Standards New Zealand (SNZ) standards)

- ethical responsibilities including:
  - professional (eg stipulated by codes of ethics developed by professional associations)
  - cultural and/or religious (eg in keeping with the accepted practices of cultures and religions)
- moral responsibilities driven by the beliefs and values of the technologist.

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