

Achievement Standard

Subject Reference	Digital Technologies 3.41		
Title	Implement complex procedures to develop a relational database embedded in a specified digital outcome		
Level	3	Credits	6
		Assessment	Internal
Subfield	Technology		
Domain	Digital Technologies		
Status	Registered	Status date	4 December 2012
Planned review date	31 December 2019	Date version published	17 November 2016

This achievement standard involves implementing complex procedures to develop a relational database embedded in a specified digital outcome.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
<ul style="list-style-type: none"> Implement complex procedures to develop a relational database embedded in a specified digital outcome. 	<ul style="list-style-type: none"> Skilfully implement complex procedures to develop a relational database embedded in a specified digital outcome. 	<ul style="list-style-type: none"> Efficiently implement complex procedures to develop a relational database embedded in a specified digital outcome.

Explanatory Notes

- This achievement standard is derived from Level 8 of the Technology learning area in *The New Zealand Curriculum*, Learning Media, Ministry of Education, 2007; and is related to the material in the *Teaching and Learning Guide for Technology*, Ministry of Education at <http://seniorsecondary.tki.org.nz>.

Further information can be found at <http://www.technology.tki.org.nz/>.

Appropriate reference information is available in *Safety and Technology Education: A Guidance Manual for New Zealand Schools*, Ministry of Education at <http://technology.tki.org.nz/Curriculum-support/Safety-and-Technology-Education>, and the Health and Safety at Work Act 2015.

This standard is also derived from *Te Marautanga o Aotearoa*. For details of *Te Marautanga o Aotearoa* achievement objectives to which this standard relates, see the [Papa Whakaako](#) for the relevant learning area.

- 2 *Implement complex procedures to develop a relational database embedded in a specified digital outcome involves:*
- designing and constructing a database with a workable table structure
 - creating queries to retrieve and modify data
 - allowing data in at least one database table to be changed from another application (e.g. spreadsheet, web page, Portable Document Format (PDF) form, student created custom desktop application)
 - applying design elements and formatting techniques to customise data input and display
 - applying data integrity and testing procedures to ensure the outcome meets the specifications
 - applying data access permissions as appropriate to the outcome.

Skilfully implement complex procedures to develop a relational database embedded in a specified digital outcome involves:

- showing accuracy in designing and constructing the table structure, applying design elements, techniques and procedures
- showing independence with regard to decision making when producing the outcome.

Efficiently implement complex procedures to develop a relational database embedded in a specified digital outcome involves:

- designing and constructing a database with a well-organised table structure (e.g. elimination of redundant data, effective data validation, effective use of data properties)
- producing the outcome in a manner that economises the use of resources (e.g. optimisation of data input, and effective use of shortcuts such as macros and buttons).

- 3 *Specified digital outcome* refers to a digital information or media outcome and its relevant specifications. The specifications must be of sufficient rigour to allow the student to meet the standard. The specifications need to be agreed prior to the outcome being made. They may be teacher-given or developed in negotiation with the student.
- 4 Examples of digital information outcomes suitable for students to develop may include: sports day management system, web based ordering system, product pricing updates, point rewards notifications, teacher mark book and automatic email notifications, music podcast management system, student course selection and confirmation systems, online product display, email PDF event (talent quests, sports registration).
- 5 The relational database design includes the table structure (fields, data types, size, keys and relationships, formatting, and validation rules), interface design, and a plan for linking data between applications.

- 6 *Complex procedures* to develop a relational database include:
- creating queries which combine data from multiple tables
 - creating queries which insert, update or delete to modify data
 - creating customised input forms
 - creating customised data displays from multiple tables (e.g. reports, PDFs, webpages, program interfaces).
- 7 Data integrity procedures may include: checking for the relevance, accuracy, and reliability of the information (e.g. formulae auditing, proof reading, spell checking).
- 8 Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-aligned-standards/Technology/Level-3-Technology>.
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Replacement Information

This achievement standard, AS91635, AS91637, and AS91642 replaced unit standard 13402 and AS90685.

Quality Assurance

- 1 Providers and Industry Training Organisations must have been granted consent to assess by NZQA before they can register credits from assessment against achievement standards.
- 2 Organisations with consent to assess and Industry Training Organisations assessing against achievement standards must engage with the moderation system that applies to those achievement standards.

Consent and Moderation Requirements (CMR) reference

0233