Achievement Standard

Subject Reference Digital Technologies 1.11

Title Demonstrate understanding of compression coding for a chosen media type

Level 1 **Credits** 3 **Assessment** External

Subfield Technology

Domain Digital Technologies

Status Registered **Status date** 23 November 2017

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This achievement standard requires demonstrating understanding of compression coding for a chosen media type.

Achievement Criteria

Achievement	Achievement with Merit	Achievement with Excellence
● Demonstrate understanding of compression coding for a chosen media type.	● Demonstrate in-depth understanding of compression coding for a chosen media type.	● Demonstrate comprehensive understanding of compression coding for a chosen media type.

Explanatory Notes

1 This achievement standard is derived from Level 6 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/Technology-in-the-NZC/Safety-in-Technology-Education-revised-2017, 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 outcomes to which this standard relates, see the Papa Whakaako for the relevant learning area.

2 *Demonstrate understanding of compression coding for a chosen media type* involves:
  ● identifying reasons for compressing files
  ● showing how the chosen media type can be represented using bits in an uncompressed form
  ● showing how a lossless compression method works
  ● giving examples of when lossy compression is appropriate.

  Demonstrate in-depth understanding of compression coding for a chosen media type involves:
  ● exploring the relationship between lossy compression and human perception of the medium
  ● evaluating lossy and lossless compression methods.

  Demonstrate comprehensive understanding of compression coding for a chosen media type involves evaluating how real-world applications are enabled by relevant representations including lossy, lossless, compressed or uncompressed.

3 *Media types* may be chosen from images, audio, video, animation. Where video or animation is selected, the image (frames) or audio data may be used for the tasks. All tasks must be completed in the context of the selected media type.

4 Examples of *lossless compression* methods include:
  ● run length encoding
  ● huffman encoding
  ● LZW-based approaches.

5 Assessment Specifications for this achievement standard can be accessed through the Technology Resources page found at http://www.nzqa.govt.nz/qualifications-standards/qualifications/ncea/subjects/.

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