

**Internal Assessment Resource**

**Digital Technologies & Hangarau Matihiko Level 3**

This resource supports assessment against Achievement Standards 91900 and 919031

**Standard title:**  91900 Conduct a critical inquiry to propose a digital technologies outcome (6 credits)

91903 Use complex techniques to develop a digital media outcome (4 credits)

**Credits:** 10

**Resource title:** You’re a teacher now!

**Resource reference:** Digital Technologies & Hangarau Matihiko 3.1B\_3.4B

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| This resource:   * Clarifies the requirements of the achievement standard * Supports good assessment practice * Should be subjected to the school’s usual assessment quality assurance process * Should be modified to make the context relevant to students in their school/kura environment and ensure that submitted evidence is authentic |

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| Date version published by Ministry of Education | December 2018 Version 1  To support internal assessment from 2019 |
| Authenticity of evidence | Teachers/kaiako must manage authenticity for any assessment from a public source, because students may have access to the assessment schedule or student exemplar material.  Using this assessment resource without modification may mean that students’ work is not authentic. The teacher may need to change figures, measurements or data sources or set a different context or topic to be investigated or a different text to read or perform. |

1Achievement standards 91900 & 91903 are derived from both *The New Zealand Curriculum* and *Te* *Marautanga o Aotearoa.*

**Internal Assessment Resource**

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**Teacher/Kaiako guidelines**

The following guidelines are supplied to enable teachers/kaiako to carry out valid and consistent assessment using this internal assessment resource.

Teachers/kaiako need to be very familiar with the outcome being assessed by the achievement standards. The achievement criteria and the explanatory notes contain information, definitions, and requirements that are crucial when interpreting the standard and assessing students/ākonga against it.

**Context/Te Horopaki**

This resource focuses on the opportunity to investigate flipped learning/e-Learning and how existing/emerging technologies can support and enhance learning

**“You have the opportunity to create an educational resource, what will you teach?”**

Possible student outcome topics that could be developed based on their inquiry could be:

* Edison robots - developing a resource to help teach 5 lessons within a primary school environment.
* Micro:bit or adafruit playground - getting students interested in electronics and programming using small all-in-one boards.
* Digital media - developing a series of web videos showing different skills and techniques to be able to create an outcome.
* 3D printing - what is it about, how does it work, how can students create an outcome using different techniques in Tinkercad.

Students should be encouraged to explore a range of digital technologies topics that they may produce an education resource about. The inquiry broad focus should be on an aspect of how existing/emerging technologies can support and enhance learning. When they are developing their outcome, they can use a range of digital media tools and techniques depending upon their individual focus. Their outcomes may require a differentiated approach. Printed resources, video resources or interactive resources may need to be developed to support the context.

This activity requires students to:

* Conduct a comprehensive critical inquiry to propose a digital technologies outcome.
* Apply complex techniques to develop a refined digital media outcome.

This is an integrated assessment activity supporting a project approach that assesses against two achievement standards.

**Conditions/Ngā Tikanga**

It is recommended that students should have multiple checkpoints with their teacher as they work through this assessment activity to ensure they have an opportunity to ask questions and gather feedback.

Conditions of Assessment related to this achievement standard can be found at <http://ncea.tki.org.nz/Resources-for-Internally-Assessed-Achievement-Standards>

**Resource requirements/Ngā Rauemi**

The list of resources for this standard will depend on the teaching and learning programme. As an overview, students will need access to appropriate digital media components and equipment which could include:

* Inquiry - Students will need access to the web, digital devices and information from a variety of sources, such as: current or historical news articles or stories, and/or notes from textbooks, radio segments. Community contacts and relevant industry/businesses could also be used as a reference source.
* Digital media – Students will need access to image manipulation, illustration and layout software i.e. Adobe Photoshop, InDesign, Illustrator, Inkscape, Scribus, GIMP or similar.

**Internal Assessment Resource**

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**Student/Akonga instructions**

**Introduction/Kupu Arataki**

This assessment activity requires you to:

* Conduct a critical inquiry to propose a digital technologies outcome
* Apply complex techniques to develop a digital media outcome

You are going to be assessed on how comprehensively you conduct the digital technologies inquiry and the complex techniques used to develop a refined digital media outcome.

This is an integrated assessment activity supporting a project approach that assesses against two achievement standards.

You may work with others to generate ideas. However, you will be expected to show your own thinking and evidence of how you discussed and combined ideas together to write and submit your own work.

Teacher note: Insert due dates and timeframes

**Task/Hei Mahi**

Imagine that you are the teacher of your class and you have an opportunity to create a fun and effective resource for your classmates (or for another class, year level or kura) to use in their learning.

You have the opportunity to create an educational resource, what will you teach? What might your resource cover? What might it look like? How will it engage the other students? What format will it take?

Follow the framework below:

**Inquiry question/s**:

* Decide on an inquiry focus and develop question/s that will guide your inquiry and development of your digital media outcome. For example, what aspect of digital technologies do students need to learn more about (e.g. 3D printing)? How can existing/emerging technologies support and enhance learning? Think about the topic you will be teaching and the end users (age group, school level, etc.).

**Managing project timelines**

* Plan and design your timeframe with key milestones and inquiry progressions. Share this with your teacher. You will need to provide evidence of using your plan to guide and manage your inquiry.

**Find out, research**

* Undertake research to gather background information and ideas from reliable, expert sources.

**Make meaning, organise, analyse**

* Analyse your gathered information. Within your analysis you also need to:
  + compare and contrast different perspectives that relate to the inquiry focus
  + critique any sources used and evaluate their potential for bias and inaccuracies
  + decide how this information will inform your digital media outcome.

**So what?**

* Establish a refined inquiry focus.

**Take action**

* Propose a digital media outcome to the inquiry focus
* Explain any relevant risks and ways to mitigate these risks.

For example, access to resources, incorrect functionality or content, scope of the proposed outcome, time requirements, device compatibility, excessive screen time, accessibility issues.

**Reflection, evaluation**

* Evaluating and reporting on the findings from the digital technologies idea or solution in relation to the inquiry question(s). Make sure your evaluation makes links to:
  + critiquing the accuracy, relevance, reliability, and/or significance of the findings
  + discussing possible future opportunities relating to the inquiry focus and explaining the possible impacts of these opportunities
  + considering possible issues relating to the inquiry focus and suggesting areas for improvement, extension, and/or follow-up
  + evaluating the strengths and weaknesses of the proposed digital technologies outcome.

**Develop a digital media outcome**

1. Apply the appropriate tools and techniques efficiently to meet the purpose and end user requirements.

Take screenshots of development and clearly annotate tools and techniques being used.

You must use at least two complex techniques in the development of your outcome. Conference with your teacher regarding the techniques you plan to use to develop your digital media outcome to ensure they are at the correct level of complexity. Examples of complex techniques include:

* + non-core functionality
  + sophisticated digital effects
  + integrating industry standards or guidelines
  + responsive design for use on multiple devices
  + integration of original media types
  + dynamic data handling and interactivity
  + automation through scripts.

1. You must apply the appropriate data integrity and testing procedures and use this to improve the quality of the outcome.

You should provide evidence of the tests you performed, and any modifications you have made based on testing and/or feedback from end-users.

1. Apply user experience principles relevant to the purpose of the outcome to improve the quality of the outcome.

Provide evidence of the user experience principles you have applied and annotate how the application improved your outcome. This should include feedback from end-users.

1. Address any relevant implications as you develop your outcome. Explain, either through photos and annotations, or through written description how you have addressed the relevant implications listed below. Be concise in your descriptions. Examples of relevant implications:
   * social
   * cultural
   * legal
   * ethical
   * intellectual property
   * privacy
   * accessibility
   * usability
   * functionality
   * aesthetics
   * end-user considerations
   * health and safety.
2. Show evidence of using an iterative methodology to make improvement throughout the design, development and testing process to ensure your outcome is of high quality. For example, if you are making a website, show evidence of how you tested and improved your initial layout, then your menu system, the website’s responsive design for different screen sizes, etc.
3. Show evidence of the application of efficient tools and techniques when producing your outcome. For example, show evidence of how you have:
   * used version control tools to manage iterations
   * applied robust asset management techniques and backup procedures
   * used storyboards, run-sheets or flow-diagrams, etc. to efficiently manage production of the outcome
   * have demonstrated efficient software techniques as appropriate to the media.

**Assessment schedule/Mahere Aromatawai: Digital Technologies & Hangarau Matihiko 91903 – You’re a teacher now!**

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| **Evidence/Judgements for Achievement/Paetae** | **Evidence/Judgements for Achievement with Merit/Kaiaka** | **Evidence/Judgements for Achievement with Excellence/Kairangi** |
| Use complex techniques to develop a digital media outcome.  The student has:   * applied appropriate tools and techniques to meet the purpose and end user requirements   The student has developed a functional digital media outcome that meets the requirement of the end-users (group of learners).  The student is able to demonstrate the teaching resource in action, working and meeting the intended results.  For example:   * an interactive e-book * a series of video tutorials * a series of printed tutorials * an educational computer game * an online learning environment. * applied appropriate data integrity and testing procedures   The student may show evidence of:   * testing for content accuracy * testing and editing effects * testing code functionality * testing the outcomes on different devices * testing with end-users for usability * applied user experience principles relevant to the purpose of the outcome   The student has referred to their research and applied appropriate user experience principles for the digital media type and for enhancing educational engagement (e.g. provide feedback, appropriate challenge/reward, appropriate length and pace).   * addressed relevant implications   Student is able to address relevant implications in their outcome such as:   * aesthetically, socially and culturally appropriate for classroom use * legal, ethical, intellectual property or privacy concerns * the outcome is accessible, usable and functions as intended, meeting end-user requirements * student identifies sustainability and future proofing of the outcome * any health and safety issues have been discussed.   *The examples above are indicative samples only* | Use complex techniques to develop an informed digital media outcome.  The student has:   * used information from testing procedures to improve the quality of the outcome   The student is able to test and show reliability in their digital media outcome. This may include a selection from:   * Tested that the sequence of the lessons was presented in the correct order and made changes to improve the flow. * Tested that the help menu was accessible from all pages of the tutorial and added an object that always linked to the help screen. * Tested with end-users and adjusted the animation or film frames/transitions/skins to enhance end user experience. * Tested with visually impaired users to ensure the font size and style is clear. * applied user experience principles to improve the quality of the outcome * edited the video tutorials to shorten the duration, so they are easily completed during a lesson * added more feedback to improve engagement and reduce learner frustration * used buttons to allow for end-user control and interaction * web design has intuitive interaction between user and content on multiple device outputs * interactive forms elements are easily identified and work as intended * animation/film uses complex transitions, multiple tracks and post processing that create a high level of visual appeal.   *The examples above are indicative samples only* | Use complex techniques to develop a refined digital media outcome.  The student has:   * made iterative improvements throughout the design, development and testing process to produce a high-quality outcome   The student shows evidence of ongoing iterative design, development and testing within the process of constructing the digital media outcome. The student is able to show:   * multiple instances of development and testing that lead to a high-quality outcome with no apparent errors, is aesthetically appealing to the end-users and meets the educational objectives * testing in the outcome's intended location (and with the learner group) to determine the outcome is fit for purpose has led to improvements. * used efficient tools and techniques in the outcome’s production   **For example (partial evidence):**  The student has used version control tools to manage iterations. They have applied robust asset management techniques and backup procedures. They have used storyboards, run-sheets or flow-diagrams, etc to efficiently manage production of the outcome. They have demonstrated efficient software techniques as appropriate to the media.  *The examples above are indicative samples only* |

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the achievement standard.

**Assessment schedule/Mahere Aromatawai: Digital Technologies & Hangarau Matihiko 91900 – You’re a teacher now!**

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| **Evidence/Judgements for Achievement/Paetae** | **Evidence/Judgements for Achievement with Merit/Kaiaka** | **Evidence/Judgements for Achievement with Excellence/Kairangi** |
| Conduct a critical inquiry to propose a digital technologies outcome.  The student has:   * decided on an inquiry focus and developed specific inquiry question(s)   For example:  Student shows evidence of developing an inquiry question through research they undertook around the topic.   * undertaken research to gather background information and ideas * analysed gathered information   For example:  Student shows a portfolio of evidence around their topic, e.g. has used OneNote to gather and store evidence of talking to experts/teachers and reading relevant research on learning modes and has provided analysis of this research.   * established a refined inquiry focus * proposed a digital technologies outcome to the inquiry focus   For example:  Student showcases their topic of inquiry and how it has changed from their initial stages. They then develop an outcome proposal based on their findings, that uses their digital technologies skillsets.   * explained relevant risks and ways to mitigate these risks   For example:  Student explains how they addressed the risks associated with the proposed outcome. For example, has identified there may be an issue with device compatibility so has investigated what devices are used in the environment and has finalised their outcome so that it functions as intended.   * reported on the findings in relation to the inquiry question(s) and proposed outcome   For example:  Student has reflected on their inquiry question and their research and linked this to their proposed outcome. They have provided evidence of how digital tools can be used to enhance and enrich the learning and has proposed using short video tutorials to teach a particular software skill.  *The examples above are indicative samples only* | Conduct an in-depth critical inquiry to propose a digital technologies outcome.  The student has:   * compared and contrasted different perspectives that relate to the inquiry focus   For example:  Student shows that they looked at a number of perspectives and can evidence this in their investigation stages. They compared and contrasted research on how students learn using traditional means verses using digital tools.   * discussed possible future opportunities relating to the inquiry focus and explained the possible impacts of these opportunities * evaluated the strengths and weaknesses of the proposed digital technologies inquiry outcome   For example:  Student shows that they have taken their findings and explored future opportunities, and they have considered their impacts. They discussed the possibility of translating their resource into other languages (such as Te Reo Māori) for a wider range of learners. They are able to identify the deeper strengths and weaknesses of their proposal rather than simplistic surface comments. They discussed how the tutorials could date quickly and need constant updating with the pace of change in Digital Technologies and ways in which they have built in the ability to update content.   * effectively managed milestones and inquiry progression   For example:  The student showed evidence of using an ongoing inquiry that includes reflection and this was documented using an online tool (e.g. Trello).  The student was able to effectively set goals and the inquiry progressed forward in a planned and organised way.  *The examples above are indicative samples only* | Conduct a comprehensive critical inquiry to propose a digital technologies outcome.  The student has   * critiqued any sources used and evaluated their potential for bias and inaccuracies   For example:  Student critiques their sources to confirm they were relevant, and what perspectives they were developed for e.g. *"I used a resource for my inquiry from a commercial app development company. While it had relevant points for the use of software in educations, they may be bias toward promoting use of their own software. Their information needs to be backed up by research from a not-for-profit software company."*   * considered possible issues relating to the proposed outcome and suggested areas for improvement, extension, and/or follow-up   For example:  They considered how best to manage translation of their resource into different languages, so that it was both accurate and easy to maintain. They suggested that having software-based translation was more efficient than manual translation, but still would need a human checking for accuracy. They also considered scalability of options for storage of the resource if it was to be used with a larger group of learners.   * critiqued the accuracy, relevance, reliability, and/or significance of the findings.   For example:  Student has critiqued the accuracy/relevance/reliability and/or significance of the findings they have discovered.  The student has compared a range of sources with differing opinions and evaluated the accuracy, relevance or reliability of evidence from differing viewpoints.  *The examples above are indicative samples only* |

Final grades will be decided using professional judgement based on a holistic examination of the evidence provided against the criteria in the achievement standard