

**Internal Assessment Resource**

**Digital Technologies & Hangarau Matihiko Level 2**

This resource supports assessment against Achievement Standard 918901

**Standard title:** Conduct an inquiry to propose a digital technologies outcome

**Credits:**  6

**Resource title:** Saving our oceans from plastic

**Resource reference:** Digital Technologies & Hangarau Matihiko 2.1A

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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. |

Achievement Standard 91890 is derived from both *The New Zealand Curriculum* and *Te* *Marautanga o Aotearoa.*

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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 standard. 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**

The assessment activity requires students to conduct a comprehensive inquiry. Their investigation will lead them to propose a digital technologies outcome.

The inquiry must focus on a digital technologies concept (for example from within the computational thinking or design and develop digital outcomes curriculum progressions). An example of a suitable inquiry might be a community issue, that can be addressed with a digital technologies outcome.

For this resource, the theme is plastic - whether it is a container, a bag or the product itself, plastic is part of our everyday lives. It isn’t that every plastic item is bad, plastic is used for medical, safety and emergency equipment. However, as our consumption of plastic mounts, so too does the danger to marine life.

Students are to conduct an inquiry that investigates how digital technologies could be used to address the issue of plastic in our oceans.

Students will decide on their own inquiry focus linked to the context, they will develop their own inquiry question(s), undertake research, evaluation, and inquiry refinement. The information gathered will then be organised, analysed and an outcome based on the inquiry will be proposed.

Students are required to collect evidence to support judgements against the assessment criteria as they conduct their inquiry and develop their proposal for a digital technologies outcome. To make this less onerous for students some teacher guidance is recommended.   
Evidence should include:

* the focusing question(s) that will lead the student inquiry
* research - evidence could be a journal, blog, presentation, showing the questions, findings, and reflections
* a brief outline of the digital technologies outcome to be developed
* a summary of their findings in relation to the inquiry question(s).

**Conditions/Ngā Tikanga**

Students should identify and agree on milestones of the inquiry with their teacher as they work through this assessment activity. It is recommended that students have at least two checkpoints with their teacher to ensure they have an opportunity to ask questions and gather feedback.

The format of the final inquiry documentation should be a concise record of the inquiry steps followed to propose the digital outcome.

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**

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.

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**Student/Akonga instructions**

**Introduction/Kupu Arataki**

This assessment activity requires you to conduct an inquiry to propose a digital technologies outcome. The focus is on saving our oceans from plastic. Throughout this process you are to meet expected inquiry milestones.

You may work with others to help generate ideas and develop those ideas. However, you are expected to show your own thinking and evidence of how you discussed and combined ideas together to propose your outcome.

Teacher note: Insert due dates and timeframes/milestones

**Task/Hei Mahi**

Decide on the focus of your inquiry from the given context of saving our oceans from plastic. The scope of your inquiry could have a global, national, or local focus. It could be how the issue of plastic is dealt with in your community or your suburb, school or home.

You are to develop 1-2 inquiry questions that have relevance to the issue of plastic, and the subsequent damage it causes to our oceans. You will need to consider how digital technologies can provide a solution.

Establish key milestones for the ongoing cycle of your inquiry and a means for monitoring your progress against these key milestones (for example, using a project management tool such as Trello, diary, stickies, online calendar).

**Questions that might help you start your inquiry:**

You might want to research the issues around plastic:

* What happens to the plastic in your community?
* How could it end up in the ocean?
* What causes it?
* Who is involved with waste plastic?
* What does our council (school or city) do about waste plastic?
* Where is it?
* Why does it happen?
* What is already being done?

Once you have identified the problem that you will tackle, you will want to consider:

* Are there existing digital technologies solutions?
* Can I develop a digital technologies outcome?

1. You are to undertake research and gather information that broadens your understanding of plastic and the damage it causes in our oceans. Your research should attempt to answer your inquiry questions. Be concise, and constantly evaluate the relevance and usefulness of the research to your inquiry.
2. Investigate how we might use digital technologies to improve the situation.
3. You need to organise and analyse this information, and give explanations of any challenges, differing implications and relevant perspectives (e.g. citizens, councils, your peers, media etc) and how these may or do impact on the focus of your inquiry.
4. Propose a digital technologies outcome that responds to your inquiry questions.
5. Throughout the inquiry process you should reflect on your findings and how your digital technologies outcome helps. Keep track of your questioning processes and discuss the impact of your findings in relation to the initial inquiry question(s) and the impact that your proposed outcome will have on the situation.
6. Write a brief outline of the digital technologies outcome you propose to develop. This can be a partially developed or a completed outcome.
7. Analyse the implications and perspectives that impact on the proposed outcome. Discuss the impact of the findings in relation to the inquiry question(s) and the proposed outcome.
8. Present your conclusions in relation to the inquiry question(s) and the proposed outcome.

You are going to be assessed on how well you manage and conduct your digital technologies inquiry. This will include how you have used your findings, drawn insightful conclusions throughout the process, and how these findings have been included in the proposed outcome.

Submit your final evidence of the digital technologies inquiry. You will be assessed on the quality of your ideas, not the length of your response. Discuss with your teacher how much evidence you need to produce.

This evidence could then support the development of the proposed digital outcome as part of another assessment.

**Assessment schedule/Mahere Aromatawai: Digital Technologies & Hangarau Matihiko 91890 – Saving our oceans from plastic**

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| **Evidence/Judgements for Achievement/Paetae** | **Evidence/Judgements for Achievement with Merit/Kaiaka** | **Evidence/Judgements for Achievement with Excellence/Kairangi** |
| Conduct an inquiry to propose a digital technologies outcome.  The student has:   * decided on an inquiry focus linked to using digital technologies to save the oceans from plastic. * developed inquiry question(s) to propose an outcome to the inquiry, linked to using digital technologies to save the oceans from plastic. * undertaken research and gathered, organised and analysed information   **For example (partial evidence):**  The student has researched ways in which digital technologies are used for helping with environmental issues and analysed their application to plastics in the ocean. They looked at existing systems, information, what and where plastic/recycling/waste/ocean damage etc. occurs and have put all information into a format that is organised and shows analysis.   * proposed a digital technologies outcome to the inquiry   **For example (partial evidence):**  Ideas could be websites, posters, systems, tracking, using QR codes, 3D printed items, mobile app or a VR system.   * summarised the findings   **For example (partial evidence):**  The student has written a brief outline summarising their findings in relation to the inquiry question(s).   * established and met agreed milestones   **For example (partial evidence):**  The student showed evidence of using an ongoing cycle of inquiry and reflection and this was documented using an online tool (e.g. Trello).  *The examples above are indicative samples only* | Conduct an in-depth inquiry to propose a digital technologies outcome.  The student has:   * analysed the implications and perspectives that impact on the proposed outcome   **For example (partial evidence):**  The student has analysed how environmental apps use gamification to promote engagement with the issue. They have researched the student population within the school and have determined that the majority have mobile devices and use games regularly. They have decided to include a gamification aspect in the outcome to increase usage of an app.   * discussed the impact of the findings in relation to the inquiry question(s) and the proposed outcome   **For example (partial evidence):**  The student discussed how another related environmental app that was developed to track trapping of stoats and used gamification, increased the usage of the app which led to further funding for setting the traps. They discussed the importance of this aspect in their own proposed app to ensure a high level of app usage to positively impact the level of plastic usage/recycling at the school.  *The examples above are indicative samples only* | Conduct a comprehensive inquiry to propose a digital technologies outcome.  The student has:   * drawn insightful conclusions about the findings in relation to the inquiry question(s) and the proposed outcome   **For example (partial evidence):**  *“...although the deputy principal liked the idea of rewarding students who use the system…. several of the student groups suggested…..as a result the idea will now include…..this addition will help to really get the message across.*  *..it should be an effective strategy because…..this approach should be successful because…..”*  *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.