Matariki Resource

Linking authentic contexts with digital technologies learning

Overview

This resource provides educators (including parents) with ideas and activities for teaching the New Zealand Curriculum Technology Progress Outcomes using the context of Matariki. The activities can be adapted for use with year 1-8 students. There is lots of information available to support learning about Matariki. Te Papa have many great education resources about Matariki including Matariki Star Facts.

Contents

1 – Pūrākau - The Six Sisters
Retell a Matariki legend using the digital tool Book Creator

2 - Navigation
Learn about navigation using the stars and create your own waka using TinkerCAD

3 - Kupe and the Giant Wheke
Use a range of digital tools in response to the legend of how Kupe discovered Aotearoa

4 – Remembering Loved Ones
Create a digital carving to remember a loved one using the digital tool SculptGL

5 - Celebrating Matariki
Show how you celebrate Matariki using Cloud Stop Motion

Be sure to share whatever you make with friends and family!

If you have access to a 3D printer: 3D objects made in TinkerCAD and SculptGL can be 3D printed. Scratch projects and stop motion animations can easily be shared online. Book Creator books can be printed or shared online.

Decoded or Learners

Is our guide for learners to learn the language and concepts used in the Progress Outcomes. The documents for each area are available for you to download through the links below. The relevant outcomes are also displayed on each page of this resource.

Designing and Developing Digital Outcomes

Computational Thinking

1 Pūrākau – The Six Sisters

This activity links to the tradition of storytelling during Matariki using digital technology to retell a Matariki pūrākau (legend).

There are many pūrākau (legends) about the star cluster Matariki. One of the most popular is that the star Matariki is the whaea (mother), surrounded by her six daughters, Tupu-ā-nuku, Tupu-ā-rangi, Waipunarangi, Waitī and Waitā, and Ururangi. You can read this legend on Te Papa's website.

Retell this pūrākau, or another Matariki legend of your choosing, using Book Creator.

Book Creator is a free online e-book creator.

Download our instructions for using book creator OR

View a quick video demonstration.

This learning links to the Designing and Developing Digital Outcomes - Progress Outcome 2 in the NZ Technology Curriculum.

2

Progress Outcome

In authentic contexts and taking account of end-users, students make decisions about creating, manipulating, storing, retrieving, sharing and testing digital content for a specific purpose, given particular parameters, tools, and techniques. They understand that digital devices impact on humans and society and that both the devices and their impact change over time. Students identify the specific role of components in a simple input-process-output system and how they work together, and they recognise the "control role" that humans have in the system. They can select from an increasing range of applications and file types to develop outcomes for particular purposes.

Decoded for learners

I create, edit, save, open, share and test digital content for different purposes. I make choices from options the teacher gives me.

I know that digital devices change over time, and they make a difference to people and to society (positive and negative).

Looking at a digital device, I can identify the parts responsible for input, processing and output, and I can describe how they work together.

I know that people control digital devices.

I can use more different applications and file types to create digital content for a specific purpose.

Raranga Matihiko Weaving Digital Futures www.rarangamatihiko.com

Progression Outcomes – decoded for learners Designing and developing digital outcomes for progress outcomes 1-3

Developed by Monika Kern and Tara Fagan, Raranga Matihiko.
creative commons Attribution-NonCommercial-ShareAlike

2 Navigation

This activity teaches how the Matariki stars, as well as others, were used in traditional navigation.

The Matariki star cluster was used by tohunga kōkōrangi (expert astronomers) to guide voyaging waka great distances across the Pacific Ocean. The rising and setting points of bright, distinctive starts such as Matariki were gauged with the help of a kāpehu whetū (star compass). You can learn more about the star compass here in the Science Learning Hub.

Use Tinkercad to design a waka hourua (double hulled waka) to get you across the ocean. Then add some stars to the sky to help you navigate.

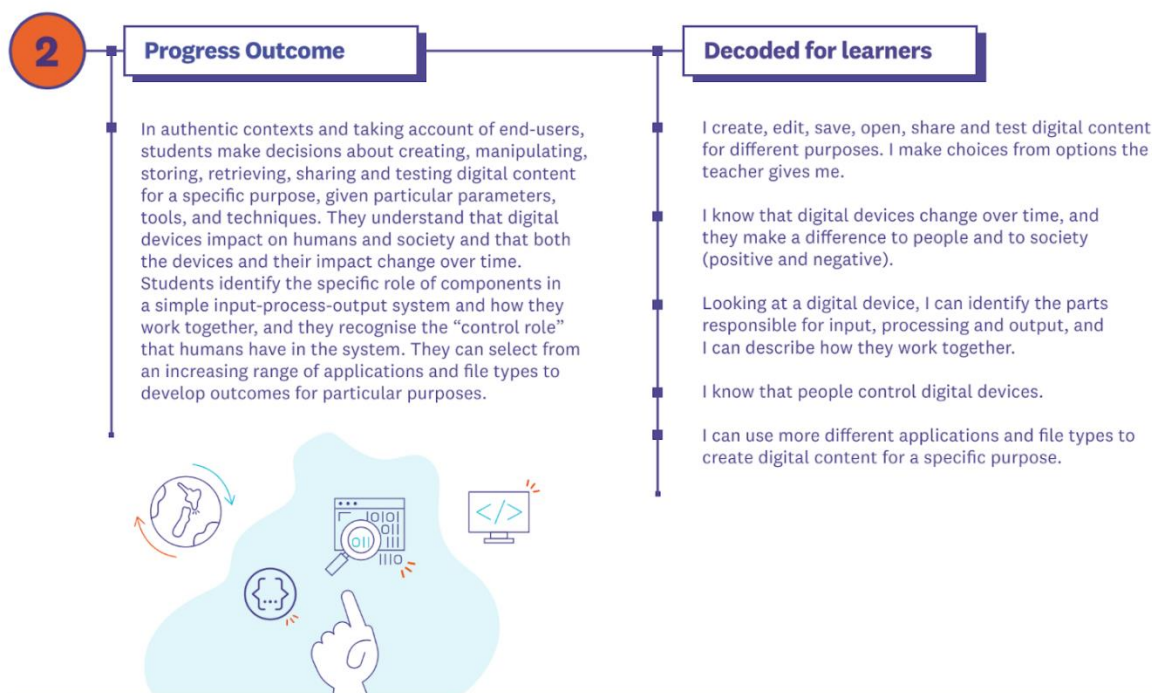Tinkercad is a free, online tool for 3D Computer Assisted Design, something like an architect might use.

Watch our introductory video Introducing Tinkercad or Ko Tinkercad Tēnei OR

Download our Tinkercad instructions.

Want to fold your own paper waka hourua? Follow these instructions.

This learning links to the Designing and Developing Digital Outcomes - Progress Outcome 2 in the NZ Technology Curriculum.

2 Progress Outcome

In authentic contexts and taking account of end-users, students make decisions about creating, manipulating, storing, retrieving, sharing and testing digital content for a specific purpose, given particular parameters, tools, and techniques. They understand that digital devices impact on humans and society and that both the devices and their impact change over time. Students identify the specific role of components in a simple input-process-output system and how they work together, and they recognise the "control role" that humans have in the system. They can select from an increasing range of applications and file types to develop outcomes for particular purposes.

Decoded for learners

I create, edit, save, open, share and test digital content for different purposes. I make choices from options the teacher gives me.

I know that digital devices change over time, and they make a difference to people and to society (positive and negative).

Looking at a digital device, I can identify the parts responsible for input, processing and output, and I can describe how they work together.

I know that people control digital devices.

I can use more different applications and file types to create digital content for a specific purpose.

Matariki Resource

Linking authentic contexts with digital technologies learning

3 Kupe and the Giant Wheke

This activity links to the traditions of storytelling and remembering our tūpuna during Matariki using digital technology to respond to the legend of Kupe and the Giant Wheke.

The legend of Kupe and the Giant Wheke tells how Kupe chased a giant wheke (octopus) across the ocean and discovered Aotearoa. Read the legend here.

Visit 'Coding with Kupe' to complete digital tasks to do with the legend of Kupe and the Giant Wheke.

This learning links to Designing and Developing Digital Outcomes Progress Outcome 2 and Computational Thinking Progress Outcome 3 in the NZ Technology Curriculum.

2 | **Progress Outcome**

In authentic contexts and taking account of end-users, students make decisions about creating, manipulating, storing, retrieving, sharing and testing digital content for a specific purpose, given particular parameters, tools, and techniques. They understand that digital devices impact on humans and society and that both the devices and their impact change over time. Students identify the specific role of components in a simple input-process-output system and how they work together, and they recognise the "control role" that humans have in the system. They can select from an increasing range of applications and file types to develop outcomes for particular purposes.

Decoded for learners

I create, edit, save, open, share and test digital content for different purposes. I make choices from options the teacher gives me.

I know that digital devices change over time, and they make a difference to people and to society (positive and negative).

Looking at a digital device, I can identify the parts responsible for input, processing and output, and I can describe how they work together.

I know that people control digital devices.

I can use more different applications and file types to create digital content for a specific purpose.

3 | **Progress Outcome**

In authentic contexts and taking account of end-users, students decompose problems into step-by-step instructions to create algorithms for computer programs. They use logical thinking to predict the behaviour of the programs, and they understand that there can be more than one algorithm for the same problem. They develop and debug simple programs that use inputs, outputs, sequence, and iteration (repeating part of the algorithm with a loop). They understand that digital devices store data using just two states represented by binary digits (bits).

Decoded for learners

I can look at a problem and can figure out the steps to solve it. I use this solution to code algorithms for computer programs.

I can predict what my computer program will do based on the code it receives.

I understand there can be different algorithms that solve the same problem.

In my code I will use inputs, outputs, sequence and repeat loops (iteration).

I debug my computer program so it works correctly.

I know that computers use bits to store data.

Kupe carved by Ngatihine iwi. Waka shelter, Waitangi Treaty Grounds.

Matariki Resource

Linking authentic contexts with digital technologies learning

4 Remembering Loved Ones

This activity links to the Matariki tradition of remembering those who have passed away. *

During Matariki we often take time to reflect on the year that has passed. This might include remembering someone who has passed away. You can commonly find photographs or carvings of tūpuna (ancestors) at a marae. You probably also have photos of loved ones who have passed away somewhere at home.

You can make your own digital carving, using SculptGL, to represent someone who has passed away. This will help to keep their memory alive. You might even choose to do this for a pet. Include shapes and images that remind you of them.

SculptGL is a free, digital sculpting web app. You might think of it as 'digital clay'.

Watch our introductory video Introducing SculptGL or Ko SculptGL tēnei OR
Download our SculptGL guide.

SculptGL

This learning links to the Designing and Developing Digital Outcomes - Progress Outcome 1 in the NZ Technology Curriculum.

If you are doing this activity with a class this may be a sensitive topic for a child who has recently lost someone special to them, please keep this in mind.

Carving depicting Rāhiri the tupuna of the Ngapuhi iwi. Te Whare Rūnunga, Waitangi Treaty Grounds.

5 Celebrations

This activity links to the tradition of coming together with whānau and friends during Matariki.

There are many ways in which you might celebrate Matariki with your whanau and friends. You might have your own ideas or family traditions. Matariki traditions can be different for different iwi. Some ideas about how you might celebrate can be found here on the Te Papa website.

Make a stop motion animation showing one way we can celebrate Matariki. Have fun making for finding props to use for your animation. This is a great activity to do with a partner or small group.
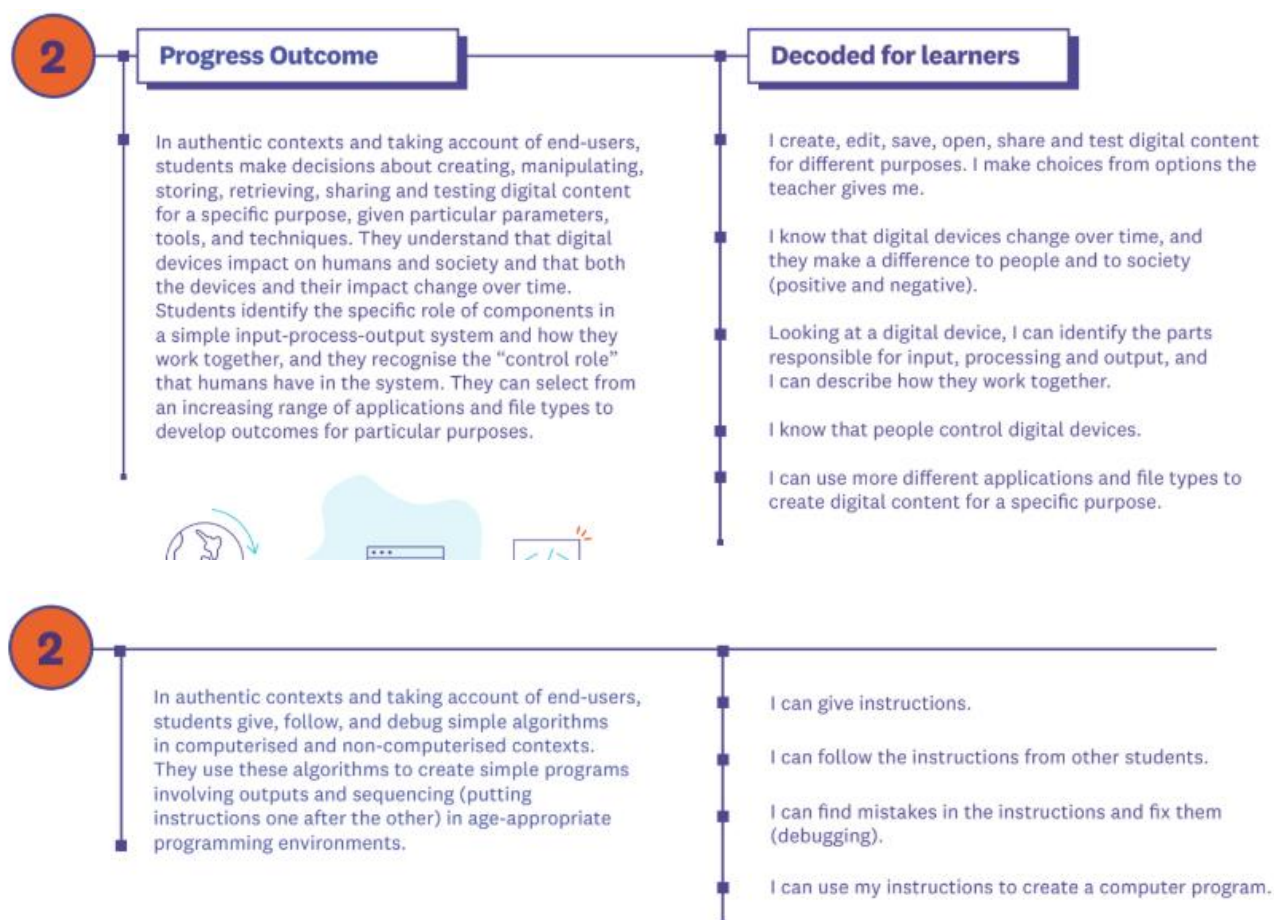
Cloud Stop Motion is a free cloud-based stop motion animation package.

Download our Cloud Motion guide OR

Watch this Cloud Stop Motion Tutorial on YouTube.

This learning links to Designing and Developing Digital Outcomes Progress Outcome 2 and Computational Thinking Progress Outcome 2 in the NZ Technology Curriculum.

2 | **Progress Outcome** | **Decoded for learners**

In authentic contexts and taking account of end-users, students make decisions about creating, manipulating, storing, retrieving, sharing and testing digital content for a specific purpose, given particular parameters, tools, and techniques. They understand that digital devices impact on humans and society and that both the devices and their impact change over time. Students identify the specific role of components in a simple input-process-output system and how they work together, and they recognise the "control role" that humans have in the system. They can select from an increasing range of applications and file types to develop outcomes for particular purposes.

I create, edit, save, open, share and test digital content for different purposes. I make choices from options the teacher gives me.

I know that digital devices change over time, and they make a difference to people and to society (positive and negative).

Looking at a digital device, I can identify the parts responsible for input, processing and output, and I can describe how they work together.

I know that people control digital devices.

I can use more different applications and file types to create digital content for a specific purpose.

2

In authentic contexts and taking account of end-users, students give, follow, and debug simple algorithms in computerised and non-computerised contexts. They use these algorithms to create simple programs involving outputs and sequencing (putting instructions one after the other) in age-appropriate programming environments.

I can give instructions.

I can follow the instructions from other students.

I can find mistakes in the instructions and fix them (debugging).

I can use my instructions to create a computer program.

Matariki Resource

Linking authentic contexts with digital technologies learning

Websites and Links

Matariki Star Facts
https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/matariki-maori-new-year/whare-tapere/matariki-star-facts

Legend of *Matariki and the six sisters*
https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/matariki-maori-new-year/whare-tapere/six-sisters

The Star Compass Kapehu Whetu
https://www.sciencelearn.org.nz/resources/622-the-star-compass-kapehu-whetu

Fold a paper Waka Hourua
https://drive.google.com/drive/folders/1kil7G6wzny0jB6od81C6yR29Xivuk6z-

Legend of *Kupe and the Giant Wheke*
http://eng.maturangamaori.tki.org.nz/Support-materials/Te-Reo-Maori/Maori-Myths-Legends-and-Contemporary-Stories/Kupe-and-the-Giant-Wheke

Coding with Kupe
https://sites.google.com/rarangamatihiko.com/tetuhiwaeherekiakupe/te-k%C4%81inga?authuser=0

Ideas how to celebrate Matariki at home
https://www.tepapa.govt.nz/discover-collections/read-watch-play/maori/matariki-maori-new-year/how-to-celebrate-matariki-home

Curriculum Links

Digital Technology in the New Zealand Curriculum
https://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Technology/Progress-outcomes

Decoded for Learners series
* Designing and Developing Digital Outcomes
https://drive.google.com/file/d/1i0nsh56Tjykr2fWxTCulFANG4piooF-H/view?usp=sharing
* Computational Thinking
https://drive.google.com/file/d/1GqRiNky8lgMid1J9Hwwz8hqk0FRVCDPU/view?usp=sharing

Digital Tools, Instructions and Tutorials

Book Creator
Website:	https://bookcreator.com/
Instructions:	https://drive.google.com/open?id=1ygHXphQeUIhcNALTiRL8UZfgmVYG4Sb3
Video Tutorial:	https://drive.google.com/open?id=1AI1oc23sghCoq_6lKJ8Chf69OJAnBrc-

Tinkercad
Website:	https://www.tinkercad.com/
Instructions:	https://drive.google.com/file/d/1TNCVHFfdP3WGM4MHfVZmxayB22ih0rOk/view?usp=sharing
Video Tutorial:	https://www.youtube.com/watch?v=BCqWHoekVmM and https://www.youtube.com/watch?v=U1rOiqTbm8M

SculptGL
Website:	https://stephaneginier.com/sculptgl/
Instructions:	https://drive.google.com/file/d/1fo1TFnNWabob3p58c_t6rBQsCzUS2XgM/view?usp=sharing
Video Tutorial:	https://www.youtube.com/watch?v=-B8vP-_uU3g and https://www.youtube.com/watch?v=-yooqyExr8I

Cloud Stop Motion
Website:	https://cloudstopmotion.com/
Instructions:	https://drive.google.com/file/d/1aeDBgEC7IaRbtqRVkWlFRS2DyGlguRnS/view?usp=sharing
Video Tutorial:	https://youtu.be/pJIUYd2BhwQ