



Takahē Maths

by Julie Ellis

illustrated by Isobel Te Aho-White

About the author

Julie Ellis is a very experienced writer in the field of education. Julie has a number of works published by Learning Media, New Holland, Reed Education and others.

About the illustrator

Izzy Joy is a young but experienced illustrator. “My personal artwork is definitely about connecting people with each other and with nature ... uplifting people, especially young women, and raising understanding and compassion toward people that are struggling in life” Izzy remarks. Izzy’s works include *The Story of Rangi and Papa* (Zine) and *Io Wahine* (Zine).

Synopsis

Julie Ellis weaves a story about the takahē, once thought to be extinct. She begins the story before the arrival of humans to Aotearoa New Zealand and develops it with the effects migration, introduced animals and pests and land development had on the takahē population. The latter part of the story introduces the conservation efforts to save this native bird population. All through the story the author places math equations which show changes in takahē numbers in a practical way for children to understand.

Note:

While Maths maybe a central theme to this story it lends itself to wider integrated studies. Maths (Numeracy, Geometry, Measurement), Literacy, Science & Technology and Social Science (i.e people movement). There are many ways The Arts can also be integrated into this story. The ideas listed below are in no way definitive. Depending on the learning space, teachers may wish to allow children to choose an independent line of study or alternatively guide them along a certain learning path. The choices are endless. Using knowledge of their children teachers can select, modify and recreate any of the following suggestions.



TEACHERS
NOTES

Pre-work

- Before reading the book look at the cover and discuss what the story might be about. Hide parts of the cover and reveal a little at a time. What clues do we get?
- Introduce the book 2 pages at a time (double spread) without reading the text. Record what the children notice.
- Read the book aloud.
- As a class or in groups write a brief synopsis of the book, eg written text or in flow chart.
- Brainstorm or mind map all ideas children have about the story. This will help to later identify areas of interest for further study.

Learning Areas

Maths

- Discuss what the maths is in the story. What do the numbers represent? Do you see any other areas of maths in the illustrations? (geometry, patterns, measurement, statistics).
- Write number problems using animals other than takahē
- Recognise numbers as words – make a matching game eg 25 – twenty five (Memory or Snap).
- Research interesting number facts about other New Zealand birds or animals eg population, weight, family size, number of eggs/young and present in an interesting way e.g. poster/storyboard/Fun Facts Quiz cards/booklet.
- Measurement – activities about measures of weight, height.
- Statistics – record data and create graphs e.g. children's favourite animals, favourite foods, favourite stories.

Literacy

- Reading – locate other books about New Zealand's native animals and books which include math features. Read and write a brief book review.
- View one of the selected websites listed on the inside back cover. Give it a rating and write a brief summary giving reasons why others should view it, or why not.
- Writing – this may take many forms as children record their findings in their area of investigation. It is linked to all topics but examples could be:
 - email or write to Dept of Conservation for information about a particular native animal.
 - write an opinion – what can I/we do to help New Zealand endangered animals? Or what are the benefits or negatives for introducing new species to our native animals? These opinions to be presented to the class using visual aids such as slide show.

- Poetry – examples might be:
 - Acrostic for the word takahē or another native animal.
 - A-Z about the takahē.
 - Five Ws Poem – Line 1 tells what the poem is about, line 2 tells what it is doing, line 3 tells when it does this, line 4 tells where it does it and line 5 tells why it happens.

Sciences

- Discuss the terms 'native' and 'introduced,' in reference to animals. Make a list of New Zealand animals – each as either native or introduced. Which group appears larger?
- Choose one native animal and create an information sheet / poster / booklet or slide presentation about it. Be sure to discuss what essential information is required and that the presentation should include where to find the information.
- Investigate the takahē further – what is happening to the takahē today? (Refer below: web links)
- Find out more about Dr Orbell (refer pages 12-15) or other New Zealand scientists who have assisted in native bird recovery such as Dr Merton and the saving of the Chatham Island Black Robin.
- Investigate any other programmes that have helped other New Zealand native animals (e.g. kiwi recovery).
- What is it like to be a DOC ranger? How do they help? (Refer to web links below). Investigate where takahē are now, or where they have been relocated to. Highlight and label locations on a map of Aotearoa New Zealand.

Technology

- Make a list of the different technologies in the story and their uses.
- Create a design for something which may help our native animals, e.g. temporary homes, safe traps, new tracking devices. Give an oral and written explanation of its uses and benefits. Make a model of the item you have designed if possible.

https://www.massey.ac.nz/massey/about-massey/news/article.cfm?marticle_uuid=B3D8DF3E-DF14-4F1A-A481-D5A07E002A77 – this is an easy-to-read article on the use of drones in tracking New Zealand relocated birds.

<https://www.otago.ac.nz/hekitenga/features/otago043357.html> – this is about tracking the albatross.

Social Studies

- Discuss why you think the first immigrants did not protect the takahē? How could they have done things differently? What can we learn from this story about protecting our environment and why it is important?
- Discuss and investigate ways in which we can help protect our native birds at school.
- Investigate your local community history. Has anything similar occurred? What happened? Record in some way to share with your class.
- Write an opinion piece for the newspaper about why you think it is important to look after our native animals.

The Arts

- Visual art - Drawings of takahē –pastel/paint/crayon/collage/mixed media
- Drama – depict a scene/s from the book.
- Dance – create a takahē dance.
- Create a bookmark to accompany the book.
- Create your own rare bird or animal and its environment.

Helpful Websites

<https://www.doc.govt.nz/nature/native-animals/birds/birds-a-z/takahe/>

<https://www.doc.govt.nz/parks-and-recreation/places-to-go/toyota-kiwi-guardians/take-action/>

<https://www.doc.govt.nz/our-work/takahe-recovery-programme/>

<https://www.nzbirdsonline.org.nz/> – information on New Zealand birds

<https://www.nzgeo.com/> – easy search button and information on New Zealand animals

https://www.youtube.com/watch?v=8_qV_Y976s0
– takahē on Mana Island: Meet the locals, interview with ranger. This will also link to other interviews regarding other New Zealand native birds. Excellent resource.

<https://www.youtube.com/watch?v=5uQ1hEWY09M>
– Monitoring the endangered takahē, Motutapu Island, Auckland Zoo

<https://easyscienceforkids.com/all-about-new-zealand/>
– easy search button for any aspect of New Zealand.

<https://www.visitzealandia.com/About#Wildlife> – has a bird section with great information

<https://www.aucklandzoo.co.nz/animals/takahe> – includes a video of the release on Rotoroa Island.

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