Kennett Brothers

Support notes for teachers

EXPLORE! AOTEAROA

By Bronwen Wall

Illustrated by Kimberly Andrews
featuring historical photographs
and watercolours from all over
Aotearoa New Zealand.

Synopsis:
Over a thousand years ago early explorers navigated their way to our shores, inspiring New Zealand's spirit of adventure. Travel through *Explore! Aotearoa* with these adventurers as they pave the way for future generations.

Bronwen Wall:
Bronwen is a frequent contributor to the Ministry of Education's *Junior Journal*, *School Journal*, and *Connected* science, maths and technology journal. She has written three Ready to Read titles: *The Greatest Race on Earth*, *New Zealand Birds*, and *Wheels*. She is an avid outdoor adventurer committed to improving the health and well-being of New Zealand families.

Activities before you begin:

1. Before opening the book, look at the cover image and title. Discuss what you think this book might be about.
2. Ask students to describe what they see (caver, a diver, men exploring, a mountaineer and a sailor.)

CHAPTER ONE: ACROSS THE OCEANS WIDE

Restless genes

1. Discuss with the students why people and other animals migrate.

2. Instigate a class discussion about where the students have come from – have the students investigate the migration of their own families (perhaps their parents immigrated to Aotearoa New Zealand, or their grandparents).

3. Have the students identify their genealogy and discuss other countries they have lived in and why they might have moved to Aotearoa New Zealand / to your town.

4. What sorts of factors make people migrate to new places? (i.e. food shortage, war [both refugees and invaders] and climate change).

Vocabulary:

Immigrate	to come to another country to live permanently.
Emigrate	to leave your own country to go and live in another country.

Finding your way

1. Discuss with students how they might find their way to a new place (i.e. country or home).

2. Instigate a class discussion on the many options for finding your way (i.e. maps, compasses, stars, etc).

3. Compare the advantages of using a star compass to GPS (i.e. What happens if the batteries of a GPS device go flat?).

4. How have new inventions/technology enabled exploration?

Vocabulary:

GPS	Global Positioning System – provides a user with their geolocation anywhere on Earth.

See also

- Make your own compass https://www.wikihow.com/Make-a-Compass
- On the Move from *Connected*, level 3, *Picture This.*
- Why is the Moon Upside Down? *Connected*, level 3, 2013, *Food for Thought.*
- Star compass https://www.sciencelearn.org.nz/resources/622-the-star-compass-kapehu-whetu
- Holding a course http://archive.hokulea.com/ike/hookele/holding_a_course.html

CHAPTER TWO: THE LONGEST WALK

Diary writing

1. Discuss with the students how and why people write (i.e. stories, notes and reports). Encourage the students to think about who is the typical reader for different types of writing. Discuss the importance of writing as a form of communication.

2. Thomas kept a **diary** that gave vivid descriptions of where the team went, what they did, and what they saw. Examine the passage below as a class and discuss what Thomas learnt from his adventure:

"I believe anyone taking the trouble to read my imperfectly kept journal would consider much time has been lost, and many unnecessary delays had taken place, but I, from experience, can assure the reader to the contrary; and I affirm none can form an estimate of the many difficulties I had to encounter from the want of means, and being thrown quite on the mercy of the natives; and I consider I have accomplished a great work in having traced the only two large rivers of the West Coast from source to mouth, and maintained myself for eighteen months on the natural productions of this island."
June 15th 1848.

3. Discuss what the diary of an explorer shows (i.e. what are the themes: curiosity, bravery, strength, determination, etc.)
    - Who is Thomas Brunner writing for?
    - What does this passage convey about adventuring?

4. Examine how exploration and innovation create opportunities and challenges for people, places, and environments (use this as an opening to the next discussion topic).

The Boulder Bank

Nelson's Boulder Bank is world famous. This bank of boulders formed naturally over 10,000 years as rocks and gravel fell from bluffs up the coast and were moved south in sea currents to settle in heaps at this spit. Today, the Boulder Bank is made up of piles of rocks that have been worn smooth by the sea. In some places, the bank is up to 6 metres high (at low tide) and it stretches 13 kilometres long.

Māori were concerned when the explorers from the *Whitby* came to the area looking for new land. They thought that the settlers would ruin this amazing fishing area, so they tried to hide the Boulder Bank and encouraged the surveyors to look for land to the south.

1. Discuss how people view and use places differently (focus on how the Māori treasured the Boulder Bank – what kind of importance does it hold today?)

2. Discuss how early Polynesian and British migrations to Aotearoa New Zealand have continuing significance for tangata whenua and communities.

3. Explore other areas of cultural importance to the Māori.

See also

- Thomas Brunner's diary

CHAPTER THREE: TO THE SUMMIT

The legend of Aoraki / Mount Cook
Aoraki is our highest mountain, but before Aoraki was a mountain, he was a god of the sky; the oldest son of Raki (Sky Father) and his first wife, Poharua te Po (Breath of Life Found in the Womb of Darkness). One legend tells how one day Aoraki and his three brothers dropped down to Earth in Aoraki's waka to visit their stepmother Papatūānuku (Earth Mother) and their many stepbrothers.

When it came time to return to their home in the heavens, Aoraki began to chant the karakia that would carry their waka back into the heavens. But he mixed up his words, and the waka tumbled from the sky back into the Southern Ocean, tipping onto its side and plunging the four brothers into the sea. They managed to haul their way up onto the side of the boat, and there they huddled, wet and cold, wondering what to do next. A bitter wind sprang up, freezing their flesh and turning it to rock and their hair to white snow. And so Aoraki stands as our highest mountain, with his brothers gathered around him as Rakiro (Mount Dampier), Rakirua (Mount Teichelmann), and Rarakiroa (Mount Tasman).

His waka became what we now know as the South Island. Its beautifully carved stern posts settled as Fiordland, and its prow the great curve from Farewell Spit to the Marlborough Sounds.

1. Discuss the difference between myths and legends as a class. Ask students to present any of their favourites or perhaps some that are culturally important to them.

2. Discuss with students how people (Māori) view and use places (like Aoraki / Mount Cook) differently. What do legends mean?

3. Explain the features of myths/legends relating to subject, purpose, and audience. Discuss with students how this myth deals with subject, purpose, and audience.

4. Relate the meanings of written texts to personal background knowledge and experience.

5. Discuss how people pass on and sustain culture and heritage for different reasons and how losing culture has consequences for people.

Sources

- Te Rūnanga o Ngāi Tahu. The Settlement: Aoraki http://ngaitahu.iwi.nz/ngai-tahu/the-settlement/settlement-offer/aoraki/
- Department of Conservation: Aoraki/Mount Cook – the ancestor of Ngāi Tahu http://www.doc.govt.nz/about-us/our-partners/maori/aoraki-mount-cook/
- Mitchell H and J. 2008. Te Tau Ihu o Te Waka a Aoraki http://www.theprow.org.nz/maori/te-tau-ihu-o-te-waka-a-aoraki/#.WS0Hj8YlEps
- Myths & Legends http://englishonline.tki.org.nz/English-Online/Planning-for-my-students-needs/Teaching-learning-sequences/English-Units-Level-3/Myths-and-Legends

CHAPTER FOUR: INTO THE BELLY OF THE EARTH

How to tell a tite from a mite

As limestone-rich water seeps and flows through cracks and crevasses in the rock, much of the carbon dioxide evaporates, leaving behind a supersaturated limestone liquid. Over thousands of years, the limestone-water concentrate drips slowly from the roofs and arches in cave systems. With each drip, the water also evaporates, leaving a thin film of limestone behind that builds up in rings around the drip point. The rings form into stalactites and stalagmites, columns, pillars, or cave crystals and coral. Together, these formations are part of a group known as 'speleothems' [say speel-ee-o-themes]. If you could see the cross-section of any speleothem, you would see that it has growth rings just like the rings in a tree trunk.

Stalactites hang down from a cave roof as spears or hollow-centred straws – You might be able to remember their name if you think that they are like a pair of **tights** that can fall down.

Stalagmites grow up from the ground into pillars – they **might** just make it to the roof one day.

Experiment:
In this interesting earth science project, you will see first-hand how cave formations, called stalactites and stalagmites, form slowly over time through the dripping and hardening of minerals. You will get to speed up the natural process and create a model of a stalactite and stalagmite using Epsom salts, a common household mineral.

1. Fill each jar about two-thirds full with hot tap water. Stir in as much Epsom salt that will dissolve into each jar. Set aside for about 24 hours.
2. Take about 30cm of yarn and tie one weight (such as a small pebble) on each end.
3. Choose a safe location for the stalactite and stalagmite model. Select a place where it can be observed but not bumped or moved because the formation we are creating is very delicate!
4. Place a small plate between each jar.
5. Place the ends of each string with the attached weight into the Epsom salt jars.
6. Place the jars far enough apart so that the middle of the string drapes in a "u" shape just above the plate.
7. After a few days check to see if any deposits are forming on the string or on the plate. Draw what you see every few days and label with the date, or take photos.

See also
Making a Stalactite video: https://www.youtube.com/watch?v=nYxVtYUG5bg

CHAPTER FIVE: UNDER THE WAVES

The bends

Decompression sickness or 'the bends' occurs as a result of dissolved gases forming into bubbles inside the body. It happens when deep water divers come up to the surface too quickly. When divers spend a long time breathing in deep water, the pressure from being down so deep forces the air that they breath to break down in their bodies and their blood. That's fine until they return to the surface, where the pressure is not so great. If they return too quickly, the gases (such as nitrogen) that have dissolved into their blood stream can form into bubbles. These bubbles can block the flow of blood around the body and cause damage or even death!

Decompression sickness can be prevented by returning to the surface slowly so that the pressure changes slowly, too. This gives the dissolved gases inside the body time to move from the blood back into the air in the person's lungs.

Experiment

1. Use two bottles of sugarless fizzy drink. Slowly open the cap of the first over a bucket. Allow the bubbles to fizz up to the top and some of the gas to escape. Explain that this is a diver who is taking a decompression stop.
2. Slowly unscrew the lid and allow the rest of the gas to escape. Explain this is the diver decompressing by allowing the extra gases out before he reaches the surface.
3. Pick up the second bottle and give it a little shake. Hold it over the bucket. Explain that this bottle represents a diver who took no stops on his way back up to the surface.
4. Open the cap completely and let all the gas escape.
5. Ask the students to describe what they learnt either verbally or in writing.

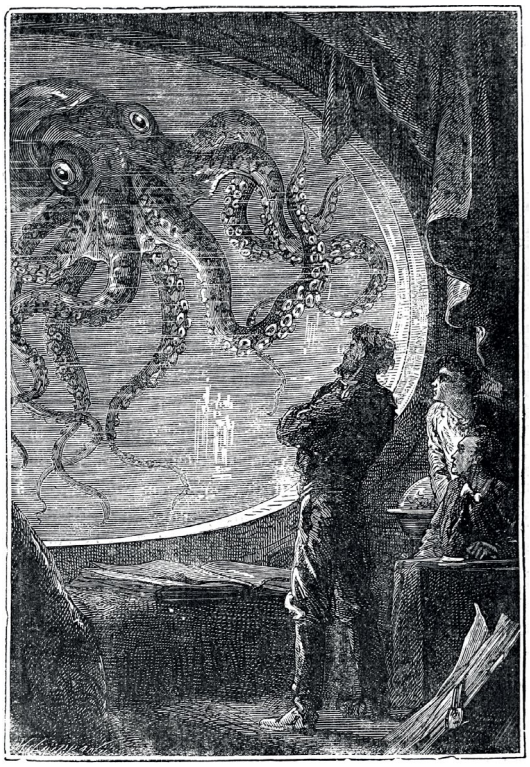
What lies below the sea

Ask the students to use the following passage from Part 1, chapter 2: The Pros and Cons of Jules Verne's *Twenty Thousand Leagues Under the Sea*, to write a creative non-fiction story about 'What lies below the sea'.

> "With its untold depths, couldn't the sea keep alive such huge specimens of life from another age, this sea that never changes while the land masses undergo almost continuous alteration? Couldn't the heart of the ocean hide the last-remaining varieties of these titanic species, for whom years are centuries and centuries millennia?"

Or write a story based on this view from inside the *Nautilus*:

1. Outline some ideas that students could use in their writing (i.e. SCUBA devices, submarines or snorkelling).
2. Encourage the students to use a range of language features (i.e. alliteration, metaphor, and symbolism) to convey meaning in their writing.
3. Encourage the students to incorporate personal experiences into their writing.



See also

The *Nautilus* http://www.vernianera.com/Nautilus/