

The New Zealand
Curriculum

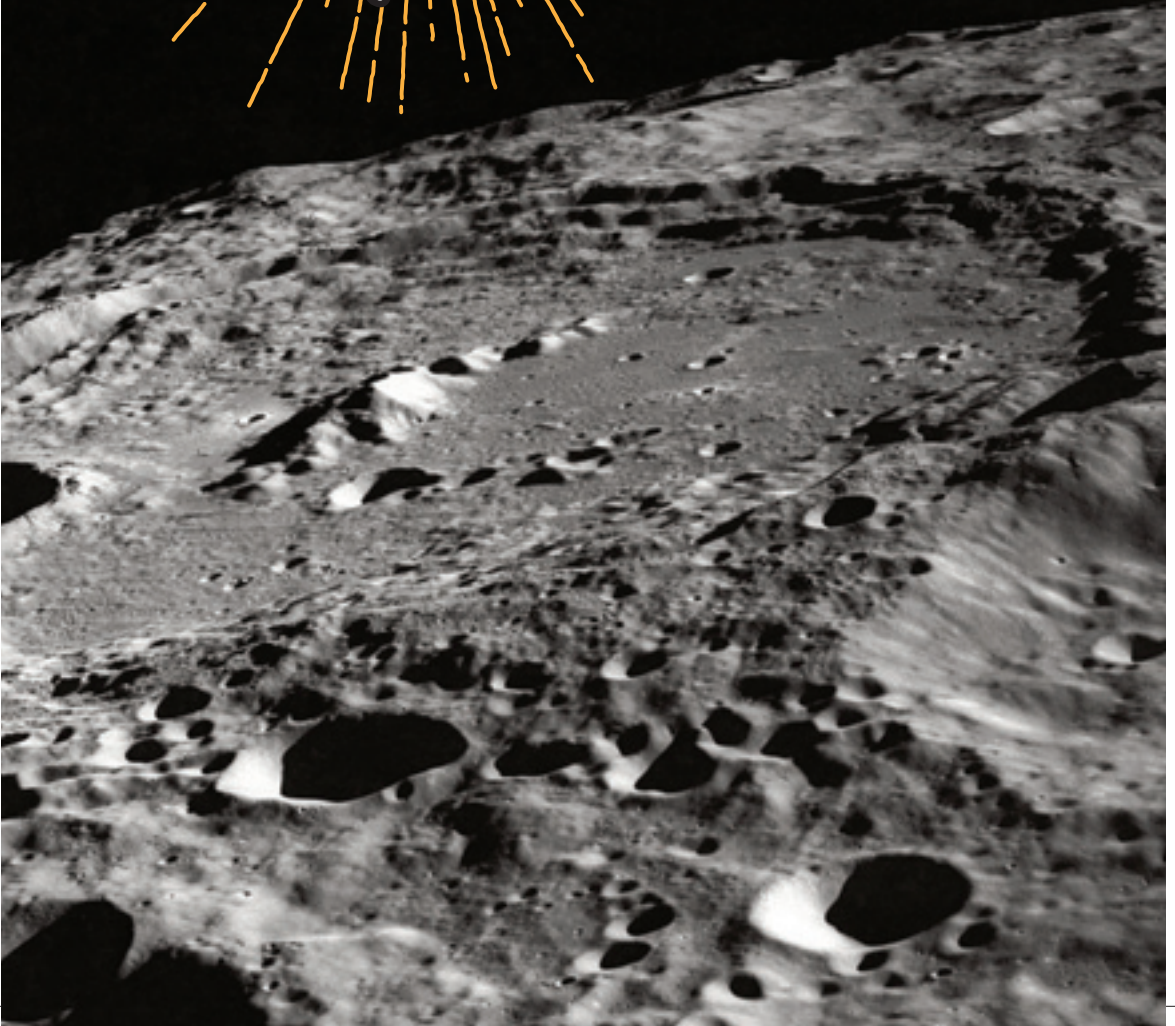
LEVEL

2



School Journal

Level 2
May 2016



TITLE	READING YEAR LEVEL
Night Light	4
Tunç Tezel: Star Man	4
Te Marama	4
Awarua: The Taniwha of Porirua	4
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This Journal supports learning across the New Zealand Curriculum at level 2. It supports literacy learning by providing opportunities for students to develop the knowledge and skills they need to meet the reading demands of the curriculum at this level. Each text has been carefully levelled in relation to these demands; its reading year level is indicated above.

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Ministry of Education

Night Light

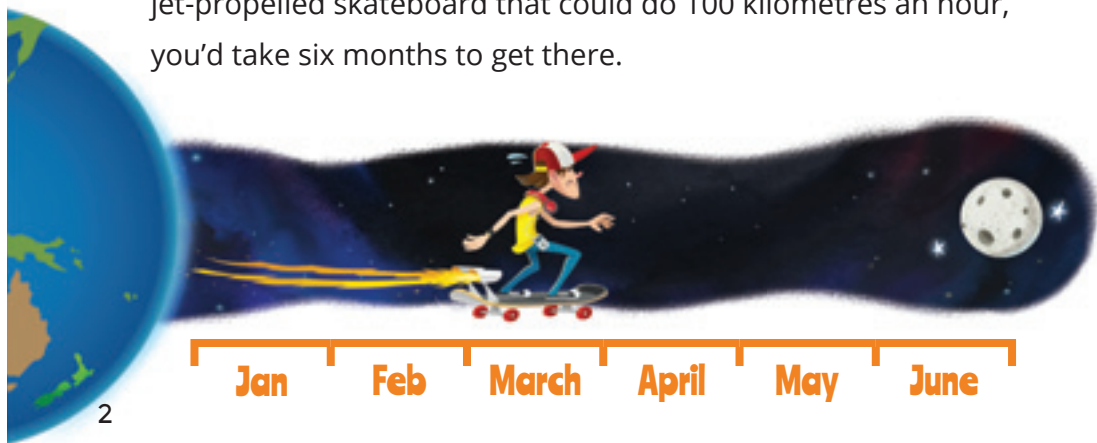
by David Hill



It's the biggest and brightest thing in the night sky. You can see it on most clear nights, and sometimes you can see it during the day. It's our moon, and it's special. Here's why.

It's near, but it's far.

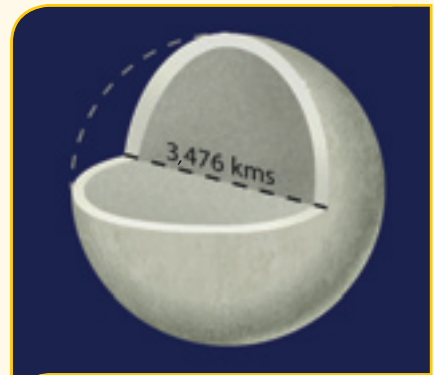
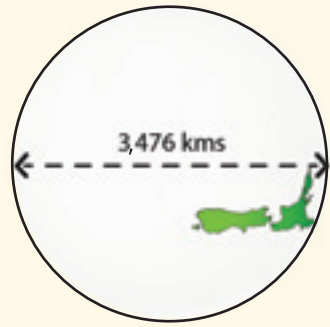
The moon is "only" 380,000 kilometres from Earth. That's four hundred times closer than the sun. But travelling to the moon would be like taking two hundred trips to Australia. Spacecraft take three days to reach the moon. If you had a jet-propelled skateboard that could do 100 kilometres an hour, you'd take six months to get there.



It's big, but it's small.

The moon's **diameter** is 3,476 kilometres. That's over twice the length of New Zealand. But the moon is about four times smaller than Earth, and four million times smaller than the sun.

Because the moon is small, its gravity is weak. If you entered a high-jump competition on the moon, you would be able to jump a lot higher than you can on Earth.



The moon is round like a ball. The moon's diameter is measured through the middle from side to side.

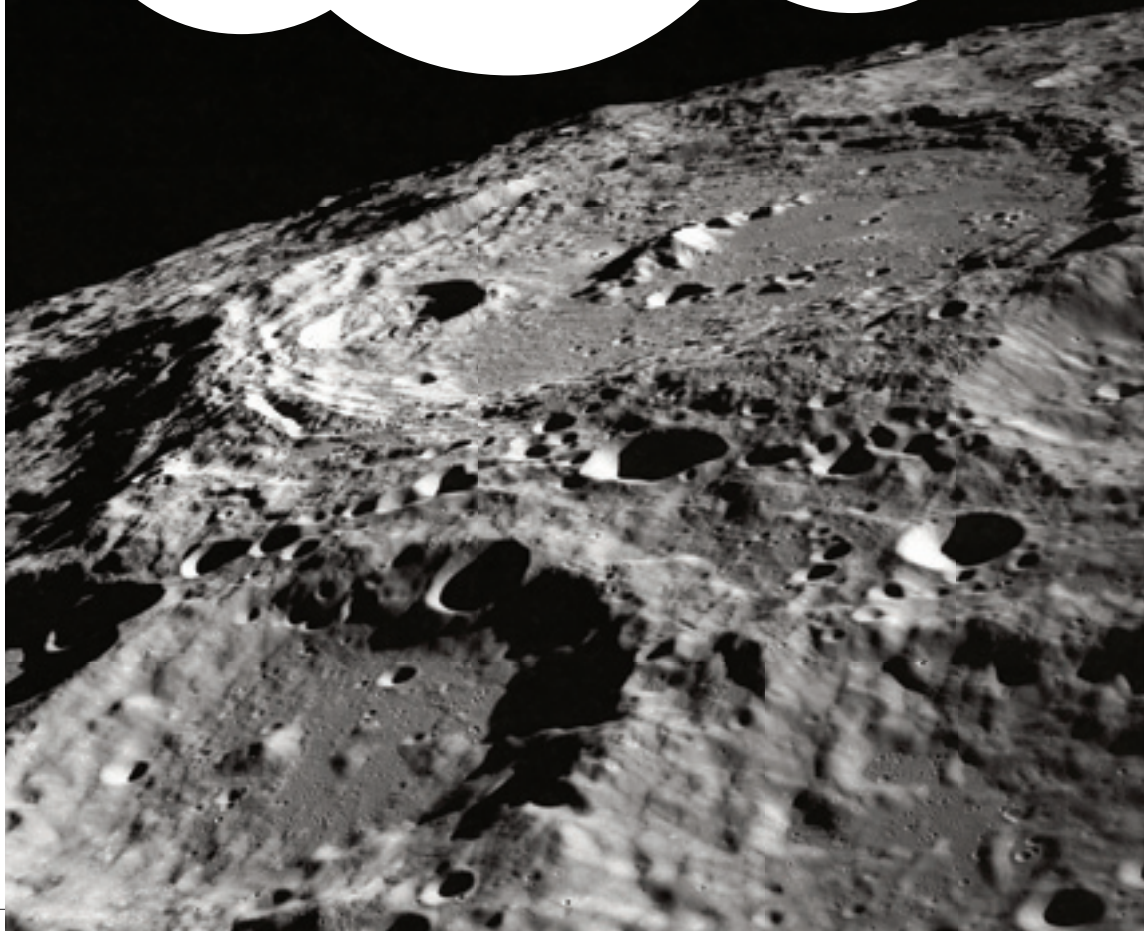
Gravity - The Invisible Force

On Earth, if you drop a book, it will fall to the ground. It won't float upwards. That's because an invisible force called gravity pulls it to Earth. Every object in the universe has gravity. Big objects, such as Earth, have stronger gravity (more pull) than smaller objects, such as the moon.

It's had a hard life.

Scientists think that about 4 billion years ago, another planet hit Earth. There was a huge explosion. The other planet was destroyed, and bits of Earth were blown into space. Some of these pieces came together to form the moon.

For millions of years after this, **meteorites** slammed into the moon, making big holes called craters. When the meteorites hit, they threw up lots of fine dust that now covers the moon's surface like dark flour.



Humans have been there.

Many spacecraft have flown past the moon, and some have landed on it. Twelve people have walked on the moon. They were astronauts from the United States. They travelled to the moon in the 1960s and 1970s to gather rock samples and do experiments.



It has no air.

The moon has no air, so there's no wind on the moon. Astronauts' footprints will last millions of years because there's nothing to blow them away.



It's bright, but it's dark.

Our moon is the second-brightest object in the sky, after the sun. It's bright enough for us to see it in the daytime. But it doesn't make its own light. It only reflects light from the sun.

It's always the same, but it keeps changing.

We see only one side of the moon. That's because it takes exactly the same time to rotate (turn around) on its axis as it does to travel once around Earth. This means that one side of the moon is always hidden from us.

It takes the moon almost twenty-eight days to go around Earth. During this time, it looks to us as if the moon is changing shape.

The new moon

We can't see the moon - it looks like a dark circle.



The waxing moon

The moon looks bigger each night.



The full moon

We see all of the moon's surface that is reflecting sunlight.

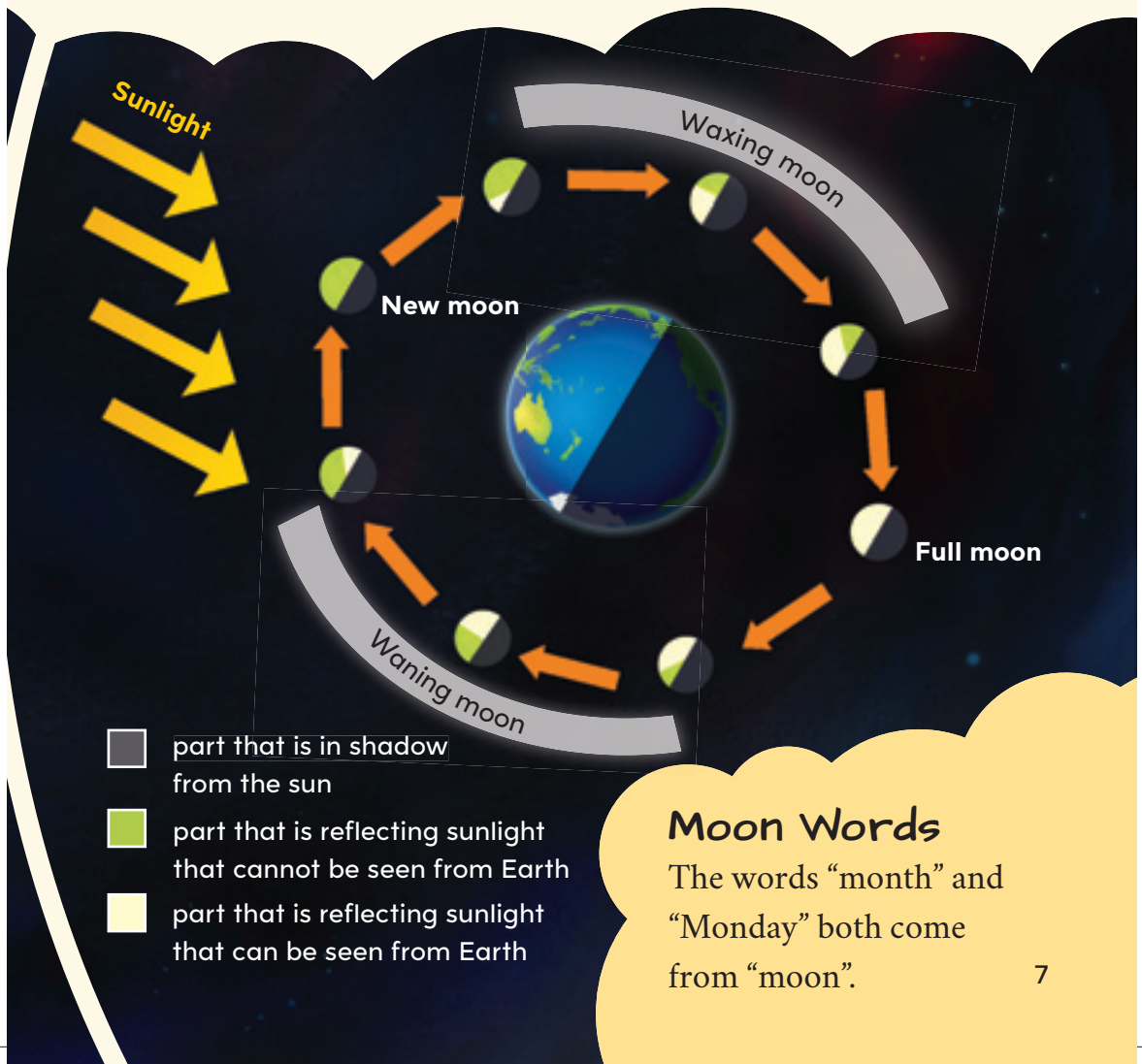


The waning moon

The moon looks smaller each night.



Why does this happen? When the moon is directly between Earth and the sun, we can't see it. That's because the side of the moon that is reflecting the sun's light is facing away from us. This is the new moon. Each day, the moon rises fifty minutes later and is at a slightly different place in the sky. So, each day, we see a little bit more of that part of the moon that is reflecting sunlight until, after two weeks, we see all of it. This is the full moon. Then we gradually see less until it becomes a new moon again.



Moon Words

The words “month” and “Monday” both come from “moon”.

It helps make the tides.

As the moon orbits Earth, its gravity pulls the surface of the oceans towards it. This helps to cause our **tides**. The sun's gravity also pulls on Earth's oceans. When the moon and the sun are in a line, their gravity combines and we get large tides (known as king tides).



There are lots of interesting stories about it.

People once thought they could see a huge human face or a rabbit's face on the moon's surface. Māori legends say a woman called Rona was grabbed by the moon. Some old stories said the moon was made of green cheese! Others said a full moon could turn people into wolves or make them go mad.



It's leaving us.

The moon is moving away from Earth by about 4 centimetres a year (as fast as your fingernails grow). As it leaves us, the moon will appear smaller. In a few billion years, it will look like just another bright star in the sky. Enjoy it while you can!



illustrations by Scott Pearson

Glossary

diameter: a straight line from one side of a circle to the other, passing through its centre

meteorites: pieces of rock or metal that have fallen from outer space

tides: daily changes in sea level (the tide comes in and goes out twice every twenty-four hours)

Te Marama

Tonight I can't sleep.
Te Marama
floods my room
with silvery light.
Outside, the moana swells
high upon the shore
– ngā tai a Kupe.

Koro fished and planted
by the phases of Te Marama.
Koro told me that she is
the tamaiti of Rangi,
sibling of Te Rā and Ngā Whetū.
Together they make
a whānau of light.

Koro always said, “Titiro whakatau! Look carefully!”
In the atarau, I remember him.

Te Marama – new, waxing, full, waning, new again.
Endlessly crossing the sky.



Kelly Joseph



GLOSSARY

atarau: moonlight

Koro: Grandad

moana: sea

ngā tai a Kupe: a king tide; high seas
(the seas of Kupe)

Ngā Whetū: the stars

Rangi (Rangi-nui): the sky father

tamaiti: child

Te Marama: the moon

Te Rā: the sun

Titiro whakatau: gaze or watch intently

whānau: family

Tunç Tezel

Star Man



Tunç Tezel

by David Chadwick

In the *School Journal*, Level 2, October 2015, there are some great photographs of stars (see “Cool Facts about a Hot Place” and “The Sons of Ma’afu”). The photos are by Tunç Tezel – an award-winning photographer from Turkey. He specialises in astrophotography – taking photos of the night sky. I asked Tunç some questions about his work.

Why did you become interested in the night sky?

I've been interested in the night sky for as long as I can remember. My elder brother Cenk encouraged me. He had some books about the planets and the stars, and he gave them to me to read.

When I was a child, I remember seeing a very bright star and a crescent moon close together in the evening sky. I think I noticed them because there is a crescent moon and a star on the Turkish flag. Many years later, I worked out that the star was the planet Venus. The moon and Venus came close together on 14 June 1983, so I would have been six years old when I saw them.

I used to read about the night sky in books and science magazines. One encyclopedia had maps of the night sky. I started to recognise some of the stars from the maps. I kept looking and learning about them as the seasons came and went.



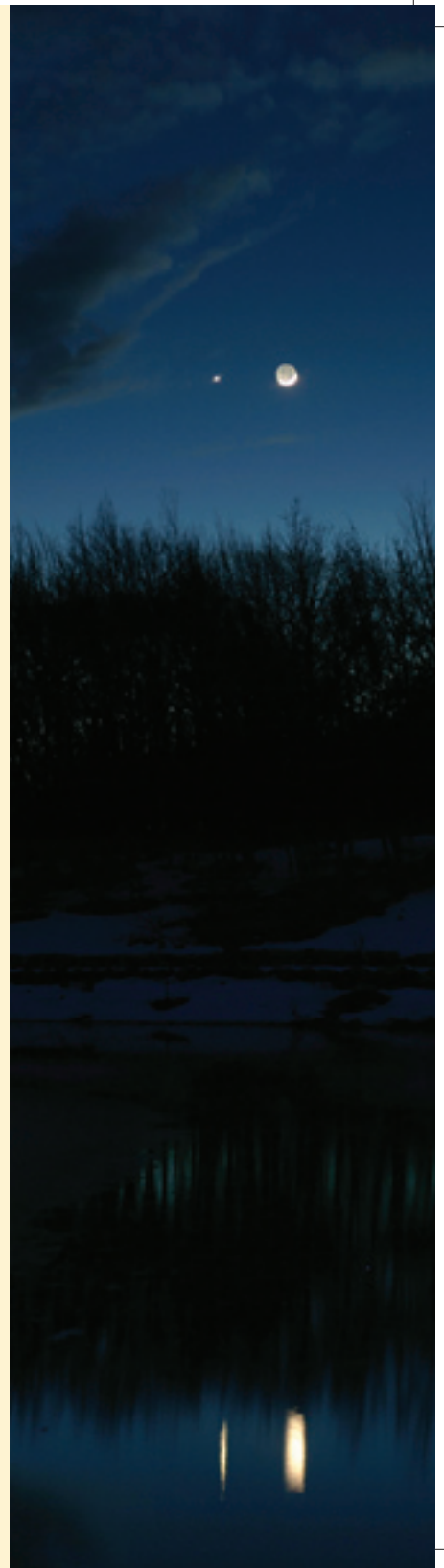


When did you start taking photos of the night sky?

Once I could recognise some of the stars, I tried taking pictures of them using my father's old camera. I didn't have a tripod, so I put the camera on a small table outside and used books to make the camera point upwards. In early 1993, I bought my first camera and started taking pictures regularly.

Why do you include scenes of nature in many of your photos?

When I started, I took photos of the sky only. But then I began to include things such as trees and mountains in the frame because they tell you more about the place where the photo was taken. I also think that the sky looks better if you see it against a familiar scene from our world.




You take lots of photos of eclipses. Why are you so interested in them?

When I was reading about the night skies, I learnt that during a total solar eclipse, the sun is completely hidden from view. I thought everything would go dark and the stars would be shining at midday. I thought, “How cool is that?”

Later, I learnt that it’s not completely dark during an eclipse. The corona of the sun can still be seen around the outside of the moon. I thought that would be even better – I wanted to see that for sure! Luckily, Turkey had a total solar eclipse in 1999 and another in 2006, and I saw both of them.



Eclipse



Sometimes your photos show the way the stars and planets move. How do you take those photos?

Sometimes I take several pictures of exactly the same scene over a period of time. That shows the movements of the stars and the planets really clearly. Another way to show movement is to leave the camera's shutter open for a long time.

Do you belong to any photography groups?

Yes, I belong to The World at Night (TWAN). It's a group of photographers from all around the world. We take photos of the world's most beautiful and well-known places with a background of stars and planets. The photos show that no matter where we live, we all see the same sky. I think that helps people to understand each other more and to work for a better, more peaceful planet.



Movement



Cook Islands



The night sky over Lake Salda, Turkey

Have you been to the Pacific and New Zealand?

I came to New Zealand in 2010. I stayed in Auckland for a few days, and then I drove down to Taupō to take some pictures of the night sky.

After that, I went to the Cook Islands to see a total solar eclipse, which I knew was going to take place on 11 July that year. I really liked New Zealand and the Cook Islands, and I hope to return there one day.

What differences did you notice between Turkey and New Zealand?

New Zealand is a lot like my homeland. The plants and trees look similar, and the climate also feels familiar. But when the sun goes down and it gets dark, it's really different. The southern stars and the bright, southern part of the Milky Way come up. They are always hidden from view in Turkey. I think the New Zealand night sky is more interesting.

Do you have any advice for young astronomers and photographers of the night sky?

Reading about the subject is still the most important thing. You should also find out if there are any astronomy groups in your area. They can help you. When you meet with other people who are interested in the same thing, it makes learning new stuff more enjoyable.



Tutulemma

Every day, the sun's path across the sky changes slightly. If you took a photo of the sun at the same time and from the same place every few days for a whole year, you would see that the sun seems to go in a figure of eight (called an analemma).

Tunç did just that – and he also included a total eclipse of the sun in his photo. It took a lot of careful planning. He started taking the photo in 2005 and finished it in 2006. His brother Cenk helped by taking some of the pictures. Tunç called the photo “Tutulemma”. (Tutulma is the Turkish word for eclipse.) The photo made him very well known around the world.

AWARUA

THE TANIWHA OF PORIRUA

by Wiremu Grace



Awarua was a taniwha who lived in Porirua Harbour many hundreds of years ago. In those days, the harbour was very deep, and the hills around it were covered with trees.

Awarua would often swim out into Te Moana o Raukawa to find food, but she would always return to the harbour. It was her home.

Sometimes the taniwha would chat with Rereroa the albatross. Awarua loved to hear Rereroa talk about the things she saw when she was flying across the ocean. The albatross could fly for days, using her great wings to glide on the wind. Awarua wished she could fly like that, too.



“You are my good friend, Rereroa,” said Awarua one day. “Will you teach me to fly?”

Rereroa looked at her own wings. Then she looked at her friend’s wings. “They are very small,” she thought. “It will be impossible to teach her to fly.”

But Rereroa didn’t want to say that to Awarua. “I don’t have time,” she said instead. “I have to keep flying and catching food to live! I couldn’t stay in one place long enough to teach you.”

“I will feed you,” Awarua said quickly. “I have lots of fish stored in my pātaka.”

So Rereroa reluctantly agreed to teach the taniwha to fly.



On the first day of flying lessons, Awarua was nervous.

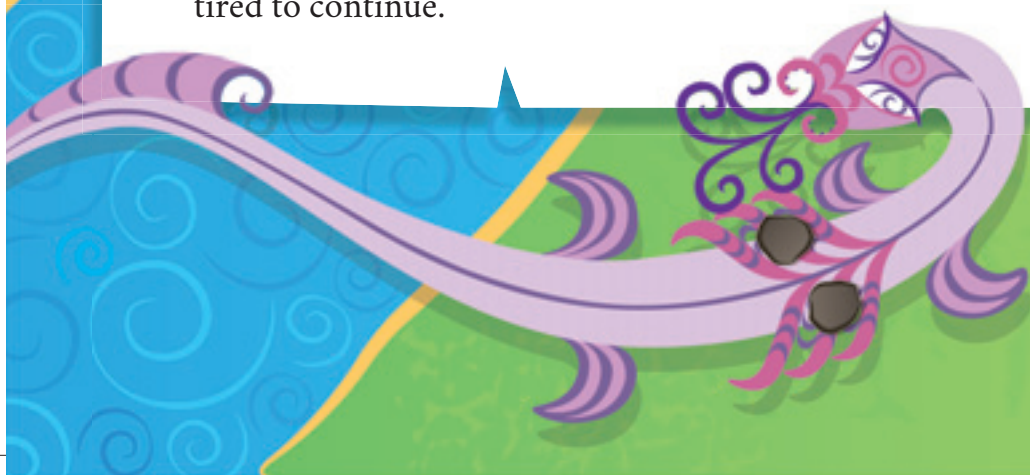
“Flying takes a lot of practice and a lot of time,” said Rereroa. “First you must make your wings stronger. Follow me and copy what I do.”

Rereroa set off. She went right around the harbour, paddling her feet and slowly flapping her wings but without taking off. Awarua followed her. By the time they got back to where they had started, Awarua was exhausted.

“That was harder than I thought,” said the taniwha. “My small wings feel very weak.”

“Albatross chicks are the same when they are learning to fly,” Rereroa replied. “You will need to keep training so that your wings get stronger.” Rereroa picked up two large stones. “Put these on your wings,” she said to Awarua. “Then raise your wings above your head until the tips touch.”

Awarua did what her friend asked, but it was very hard with the weight of the stones. After ten flaps, she was too tired to continue.





“We’ll start again tomorrow,” said Rereroa. “Now we need to eat to build up our strength.”

“Good,” said Awarua, and she led Rereroa to the pool that was her pātaka. When Rereroa saw all the kaimoana that Awarua had stored there, she was amazed. The taniwha scooped up a wingful of fish and offered them to Rereroa. The albatross politely took a few. Then she watched with astonishment as Awarua swallowed the rest in one huge gulp.

Awarua was about to grab another wingful of fish when Rereroa stopped her. “You’re in training now, so you must watch your diet. You won’t be able to stay in the air if your body is too heavy.”

Sadly, Awarua put back the second lot of fish.



Over the next few weeks, Awarua trained every day. Soon she was speeding across the surface of the water and lifting her weighted wings easily. At last, Rereroa said it was time for the taniwha to try her first take-off.

The two friends went to the southern end of the harbour. First, Rereroa told Awarua to stretch her wings to warm up her muscles. Then she told the taniwha to turn and face towards Whitireia, the local maunga.

“Remember your training and everything I’ve taught you,” Rereroa said. “Now, give it your best shot!”

Awarua took a deep breath and set off. Slowly she gathered speed until she was skimming across the top of the water. She heard Rereroa shouting in her ear. “Push down on your wings and fly!”



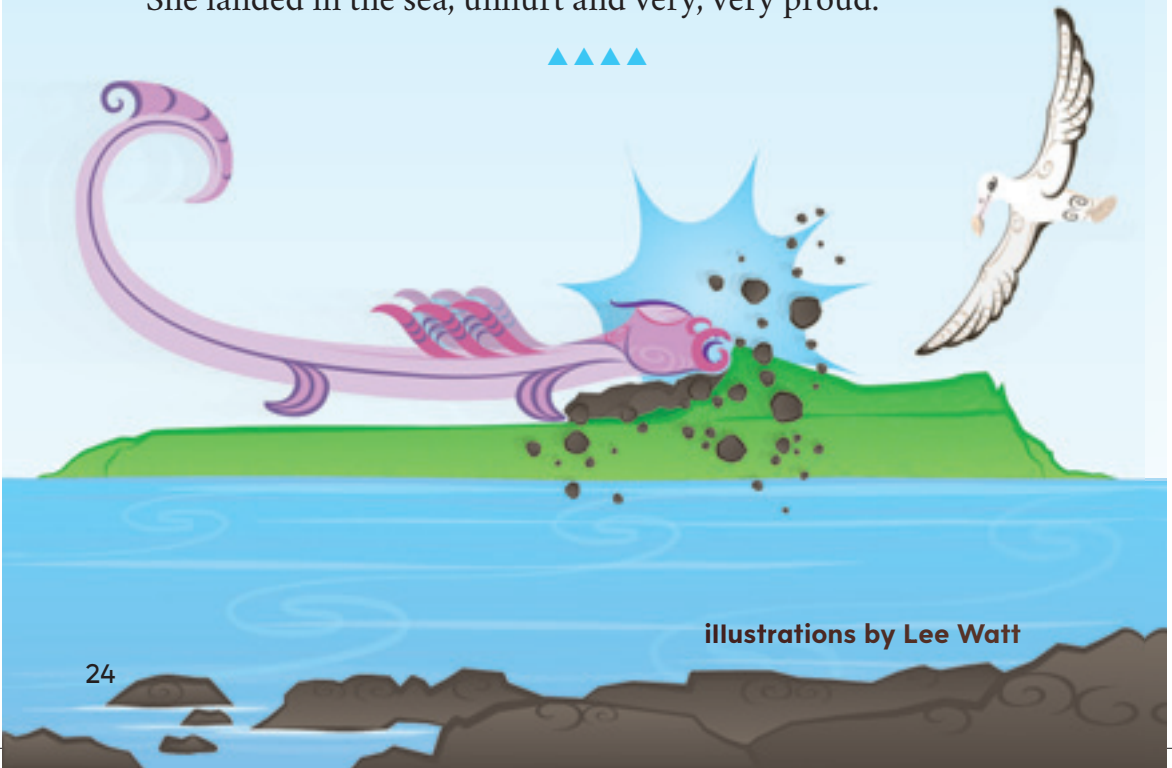
Awarua knew she was nearing the other side of the harbour, so she raised her head and pushed all her energy into her wings. The next moment, she was in the air. But Whitireia was straight ahead of her. Flapping her wings furiously, Awarua tried to gain more height, but it was too late! With a huge thump, she smashed into the side of the maunga.

Luckily, the trees softened the impact. Awarua emerged from a pile of broken branches with a huge smile on her face. “Did you see? Did you see me fly?” she screeched excitedly.

Awarua wanted to try again immediately. Rereroa wasn't sure it was a good idea, but her friend kept pleading. Finally, Rereroa gave in.

“All right,” said Rereroa, “but this time, flap your wings hard right from the start. That way, you'll take off earlier and get over Whitireia.”

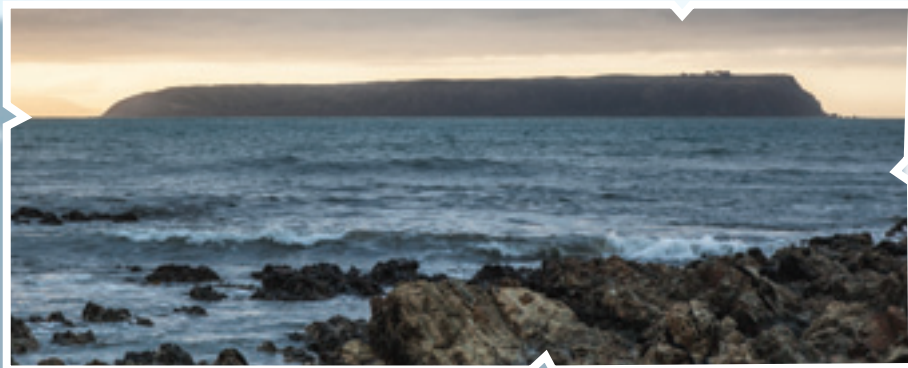
Awarua did as her friend suggested, and this time she got over the mountain easily. She closed her eyes and gave a huge whoop of joy. She was so excited she didn't see Mana Island in front of her. The taniwha ploughed into it with a mighty crash and slid right along the island, taking the top of it with her. She landed in the sea, unhurt and very, very proud.



illustrations by Lee Watt

Awarua continued to practise her flying. She never could travel the long distances that Rereroa could, but she was happy just being able to lift off into the sky.

Today, if you look at Whitireia, you will see the valley where the taniwha crashed. And if you look at Mana Island, you will see that its top is very flat. These features are the result of what happened all those years ago when Awarua the taniwha learnt to fly.

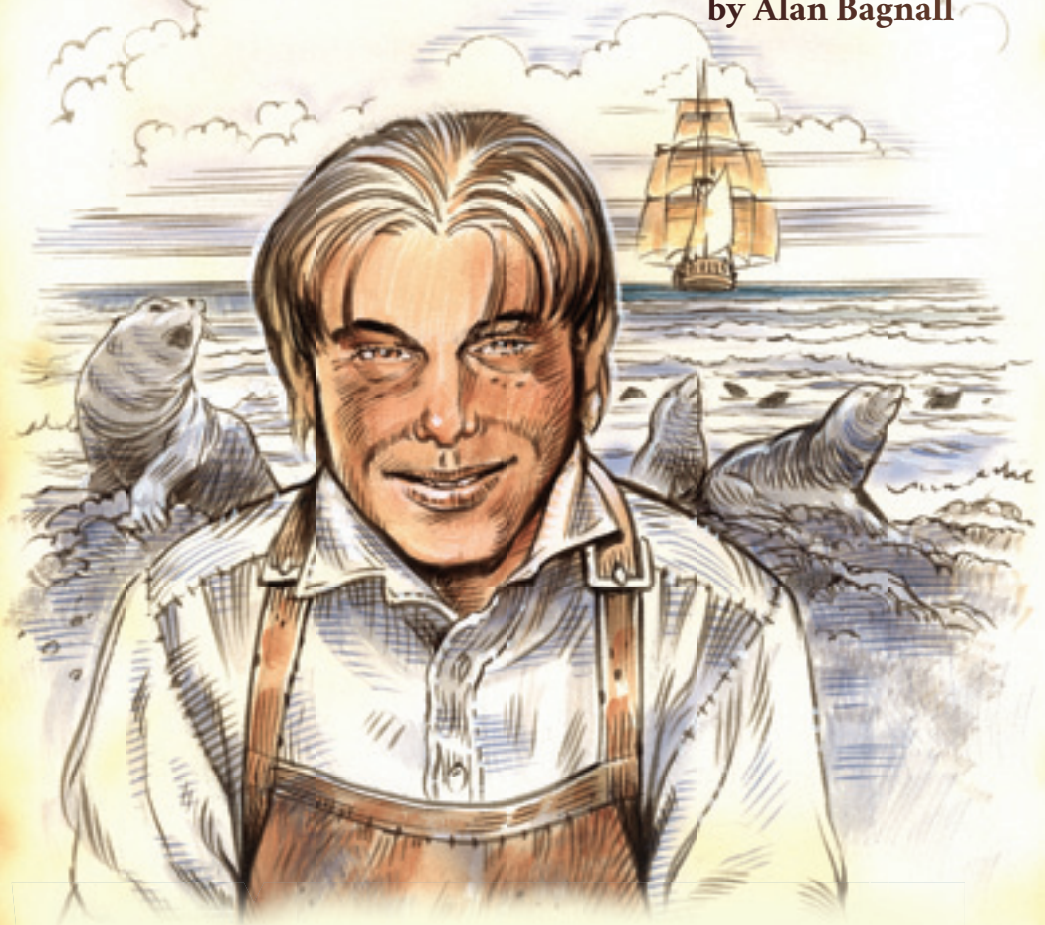


GLOSSARY

kaimoana:	seafood
maunga:	mountain
pātaka:	larder, storeroom
Te Moana o Raukawa:	Cook Strait

My Name Is Davy Lowston

by Alan Bagnall



*My name is Davy Lowston, I did seal, I did seal.
My name is Davy Lowston, I did seal.
Though my men and I were lost,
Though our very lives 'twould cost,
We did seal, we did seal, we did seal.*

This story is about a true event. In 1810, a group of men were left on some remote islands to catch seals – but the ship that was meant to pick them up never returned. Davy Lowston was one of those men. We don't know a lot about him. The author has based this story on what we do know, but he has imagined many of the details.

My name is Davy Lowston. New Zealand's oldest folk song is about me. My story is true, and I'll tell it as it happened. I didn't keep a diary because I never learnt to read or write, but this is what I remember.

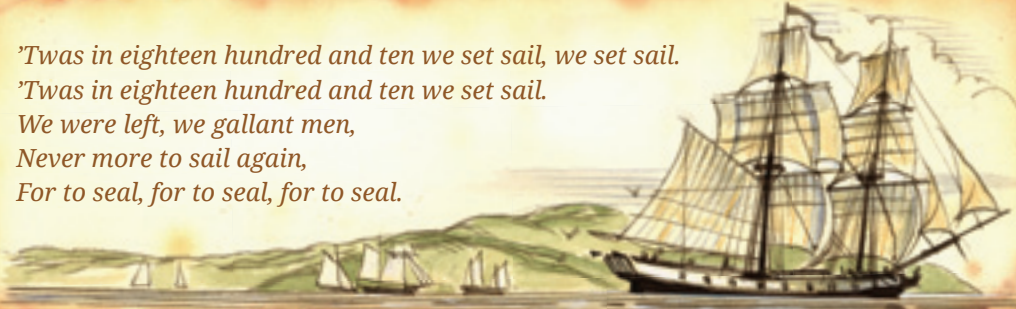
I grew up in the crowded city of London. One evening, while I was walking on the London docks, two men grabbed me. They pulled me onto a whaling ship and locked me in a cabin. There was nothing I could do. They didn't let me out until the ship had left port.

The whaling ship sailed to the South Pacific. It was a hard voyage, but I learnt a lot. By the time we arrived in Port Jackson, Sydney Harbour, I knew all about hunting and killing whales.

Still, I hated the whaling life, so while we were in Sydney, I crept ashore in the middle of the night and hid until the ship left port again. I was free, but I had no money. What could I do?

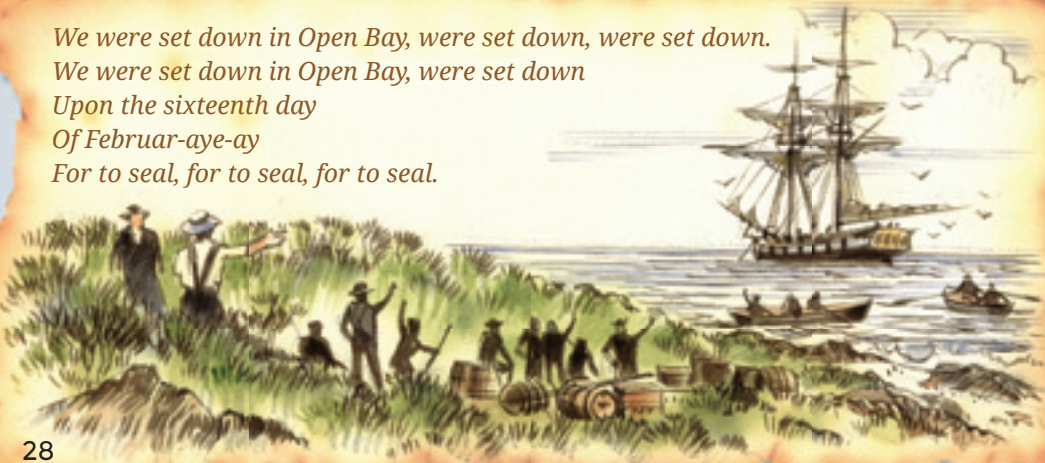
Then I heard that the captain of the **brig** *Active* was looking for sealers. Sealskins and whale oil were worth a lot in those days. Rich people wore sealskin coats to keep warm, and whale oil was used to light street lamps. So, I joined the *Active*, and we set sail for New Zealand.

*'Twas in eighteen hundred and ten we set sail, we set sail.
'Twas in eighteen hundred and ten we set sail.
We were left, we gallant men,
Never more to sail again,
For to seal, for to seal, for to seal.*



Ten of us landed on the rocky shore of the Open Bay Islands off the south-west coast of the South Island. The islands were bare except for a few patches of scrub, and they were surrounded by wild, stormy ocean. They were home for thousands of seals and screeching sea birds.

*We were set down in Open Bay, were set down, were set down.
We were set down in Open Bay, were set down
Upon the sixteenth day
Of Februar-aye-ay
For to seal, for to seal, for to seal.*

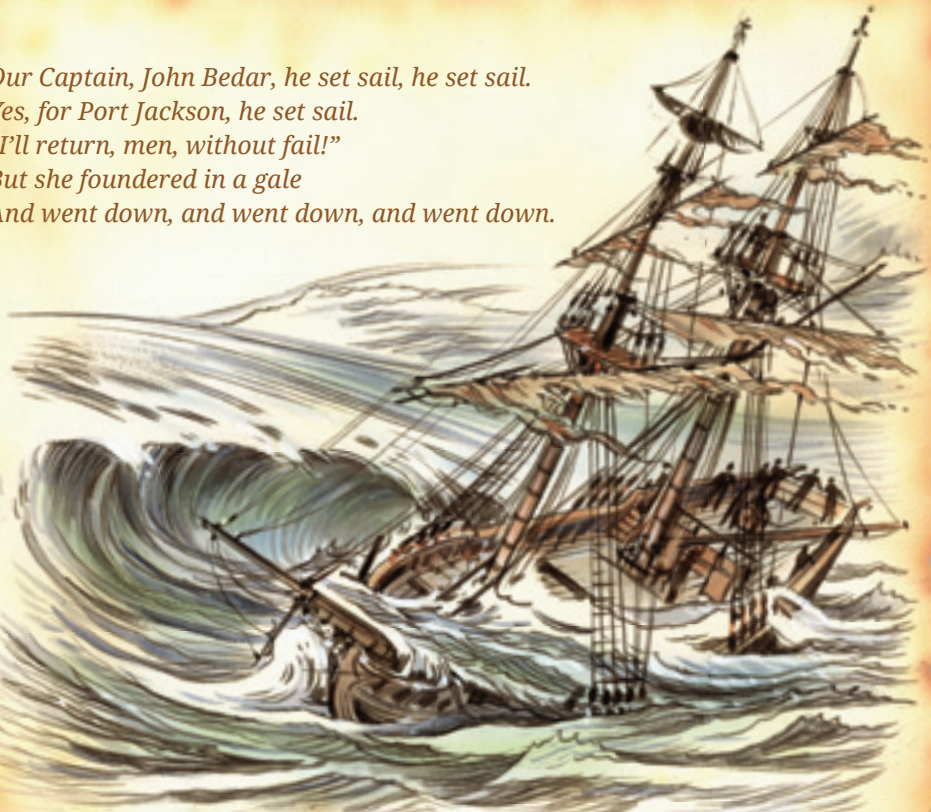


The captain promised he would be back soon with food and other supplies. Then he left for Sydney.

The Open Bay Islands were often swept by rain and sleet. There was little protection from the cold and the wind, so we built huts for shelter. They were tiny, with walls of stone and roofs made from tussock grass.

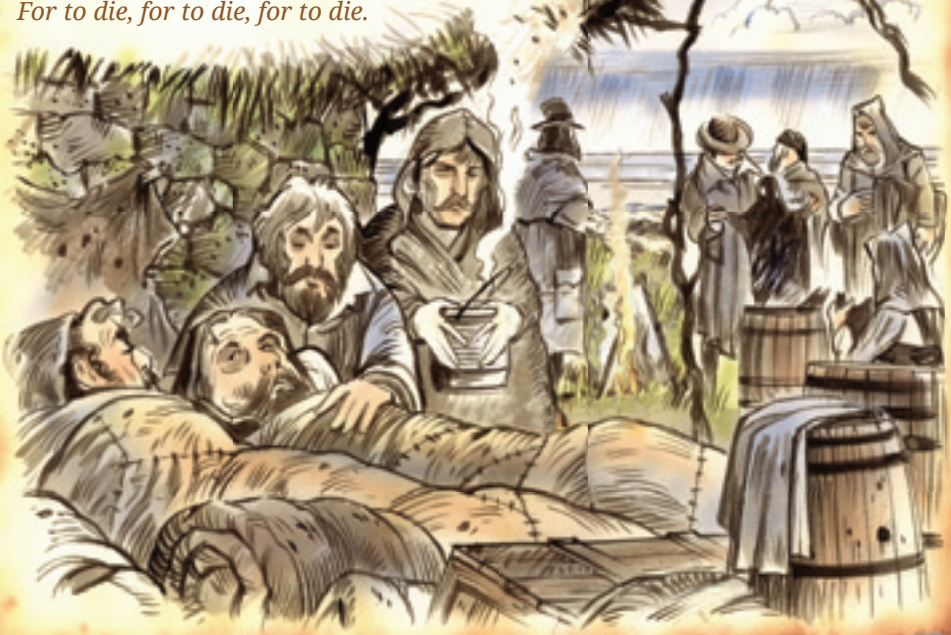
Our team worked hard. We killed and skinned ten thousand seals. Every day we kept a lookout for the *Active*, but in vain. We didn't know that the ship had run into a terrible storm and sunk on the way back to Australia.

*Our Captain, John Bedar, he set sail, he set sail.
Yes, for Port Jackson, he set sail.
"I'll return, men, without fail!"
But she foundered in a gale
And went down, and went down, and went down.*



We were left on those bleak islands for three years and ten months. Mostly we ate seal meat, but as time went by, we killed most of the seals. It became harder and harder to get enough to eat. Sometimes we ate fern roots, but there weren't many of them, and they tasted terrible. Some of us became very sick.

*We cured ten thousand skins for the fur, for the fur.
Yes, we cured ten thousand skins for the fur.
Brackish water, putrid seal,
We did all of us fall ill
For to die, for to die, for to die.*



At last, during our fourth summer, we saw a sail on the horizon. We quickly lit a fire and threw some green branches onto it. We were lucky. The sailors on the **schooner** *Governor Bligh* saw the smoke, and we were rescued. We would not die on those terrible islands after all!

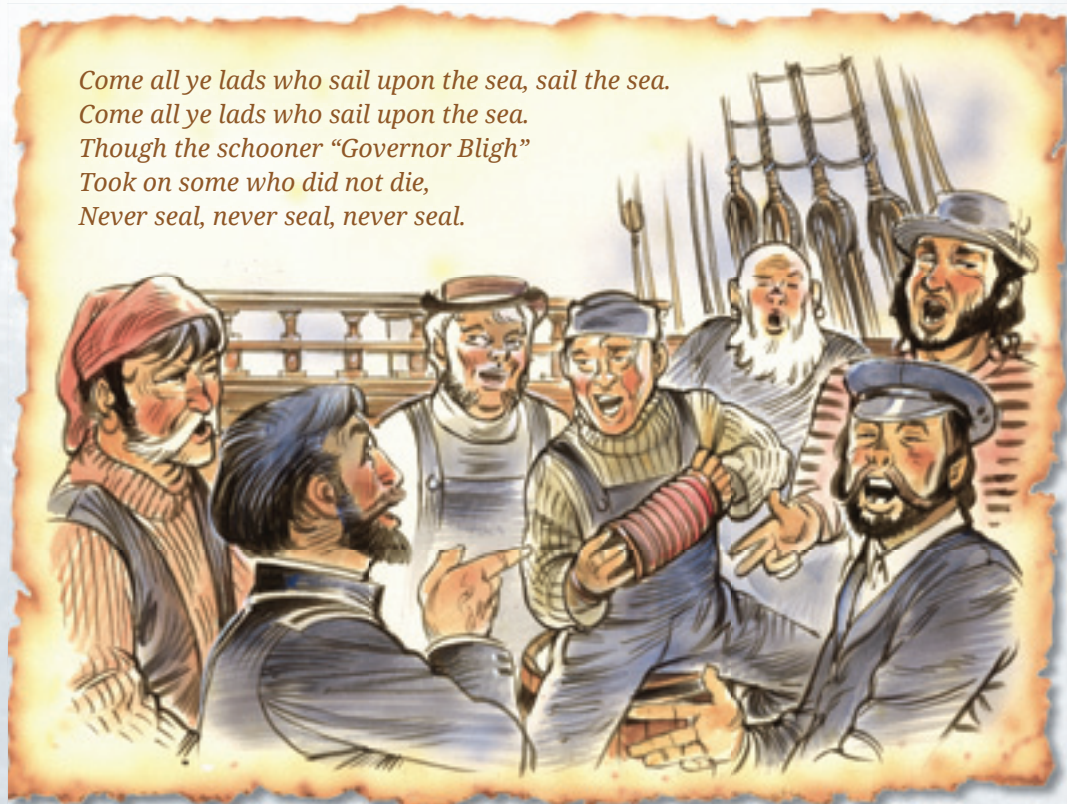
The *Governor Bligh* took us back to Sydney. We had been gone so long that everyone thought we'd died. Suddenly our story was in the newspapers, and we were famous.

But a lot of people in Sydney were like me. They had come from the slums of London, and they couldn't read. They relied on the town crier for their news. The town crier was a man with a loud, booming voice. He walked the streets, ringing a bell and shouting out the latest stories: "Hear ye! Hear ye! Sealing party returns from the dead!"

The town crier made our story into a kind of chant. An American whaling ship was docked at the wharf, and the crew heard the town crier's chant. They liked it so much that they began to sing it to the tune of a popular song. They changed my name from Lowrieston to Lowston to make it fit better. They also said that some of us died. It wasn't true, but it made a better story!

Those American whalers spread the song all around the Pacific. When I heard that it had arrived in New Zealand, I knew our story would be remembered long after we had gone.

*Come all ye lads who sail upon the sea, sail the sea.
Come all ye lads who sail upon the sea.
Though the schooner "Governor Bligh"
Took on some who did not die,
Never seal, never seal, never seal.*



Davy Lowston - the song

The song "Davy Lowston" has been recorded by many singers and musicians. You can listen to it on the audio version of this text at www.schooljournal.tki.org.nz

Perhaps you could learn it. Then "Davy Lowston" will be sung by yet another generation of New Zealanders, two hundred years after it all happened.

GLOSSARY

brig: a sailing ship with two masts

schooner: a sailing ship with the tallest mast at the back

illustrations by Spike Wademan

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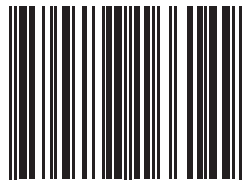
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