



Te Kura

TE AHO O TE KURA POUNAMU
THE CORRESPONDENCE SCHOOL

Earthquakes

Aotearoa New Zealand

IRO290



2012/1



Copyright © 2012 Board of Trustees of Te Aho o Te Kura Pounamu, Private Bag 39992, Wellington Mall Centre, Lower Hutt 5045, New Zealand. All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means without the written permission of Te Aho o Te Kura Pounamu.



In 1931 Ruth McNab was a school teacher in the Hawke's Bay. There is one day she will always remember. She tells what happened.

“It was the first day of school, February 3rd 1931. It was playtime. The children were out in the sun. I was in the classroom. Suddenly the clock on the wall flew across the room. There was a big rumbling noise like a train coming close. Everything started to move. I ran outside to get the children away from the building. The ground was rolling up and down like big waves. The children were screaming. It was hard to stand up.”

Aotearoa New Zealand

Earthquakes



What was happening?

On February 3rd, 1931, Ruth McNab and the children were feeling New Zealand's worst earthquake at 7.8 on the Richter scale. They were not hurt.

But it was different for people nearby in Hastings and Napier. Buildings fell down and people were crushed. Bridges and railway lines were broken and bent.

A huge piece of land that had been under the sea was lifted up. 256 people died.





A few minutes after the quake, fires began in Napier.

Nothing could be done. The water pipes were broken. Fire engines could not move along the road. Luckily the Royal Navy ship HMS Veronica was in port and they sent radio messages asking for help.

The HMS Veronica's radio was also used to deliver news of the disaster to the outside world.

People who had lost their homes but were not hurt went down to the beach. There was no power or sewage. Many thousands of people had to be moved out of the city.

People who lived through the quake never forgot the things they saw that day.

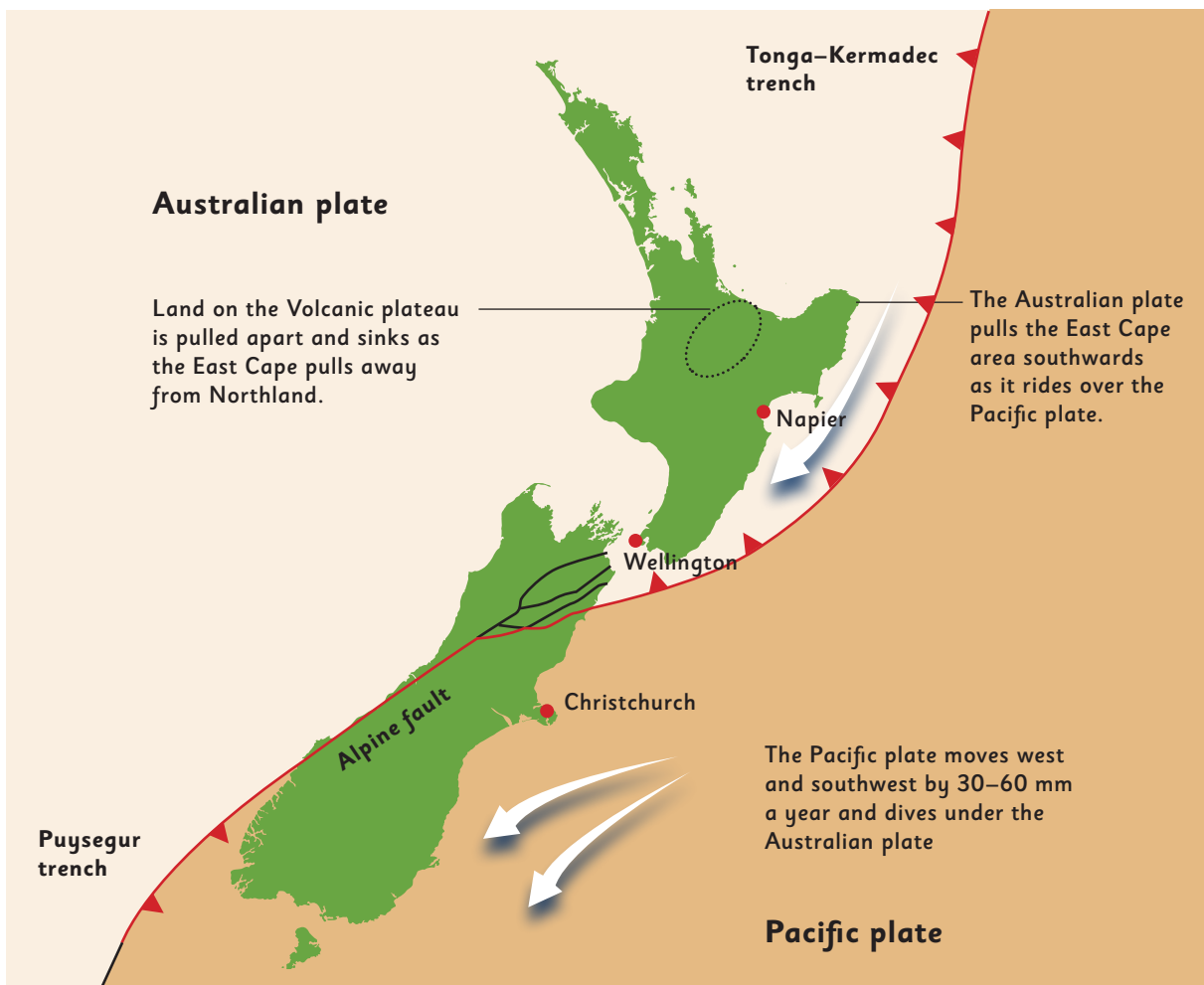




Why did the earthquake happen?

To find out why the earthquake happened we have to look at where New Zealand is in the world.

The land we live on sits on top of the Earth's crust. The Earth's crust is broken into large sections called plates. New Zealand sits right where two plates meet. You can see this on the map.



The Pacific plate is pushing against the Indian-Australian plate, and in some places the edge of the Pacific plate is sliding beneath the edge of the Indian-Australian plate.

Plates slowly grind against each other over millions of years. Deep under the ground, this movement is very slow (around the speed your fingernails grow). But because the Earth's surface is hard and rocky, the plates can't slide slowly here. The slow movement of the plates makes pressure build up along giant cracks in the ground, called faults.

When the pressure is too much, the rocks slide against each other quickly and violently. When this happens we feel the ground moving and shaking. This is an earthquake.



Major earthquakes in New Zealand since the 1931 Napier Earthquake.

M 6.3, Christchurch, February 22, 2011

The city of Christchurch experienced a major earthquake centred south of the city; severe damage and casualties occurred.

M 7.1, Darfield (Canterbury), September 4, 2010

This earthquake caused severe building damage in mid-Canterbury, particularly to the city of Christchurch.

M 7.8, Dusky Sound, July 15, 2009

This earthquake in Fiordland was New Zealand's largest for nearly 80 years.

M 6.8, Gisborne, December 20, 2007

This offshore event caused buildings to collapse in the Gisborne CBD.

M 6.5, Edgecumbe, March 2, 1987

The shallow origin of this earthquake made it very destructive.

M 7.1, Inangahua, May 24, 1968

The 1968 Inangahua earthquake caused widespread damage and was felt over much of the country.

M 7.0, Wairarapa, August 2, 1942

The shock that struck the Wairarapa Region on August 2 was nearly as severe as the disastrous June 24 earthquake five weeks earlier.

M 7.2, Wairarapa, June 24, 1942

This earthquake severely rocked the lower North Island on June 24, 1942 causing extensive damage to local buildings.

M 7.6, Horoeka (Pahiatua), March 5, 1934

The 1934 Horoeka earthquake shook the lower North Island on March 5, 1934 and was felt as far away as Auckland and Dunedin.

M 7.8, Hawke's Bay, February 3, 1931

The 1931 Hawke's Bay earthquake caused the largest loss of life and most extensive damage of any quake in New Zealand's recorded history.

Source: www.geonet.org.nz/earthquake/historic-earthquakes



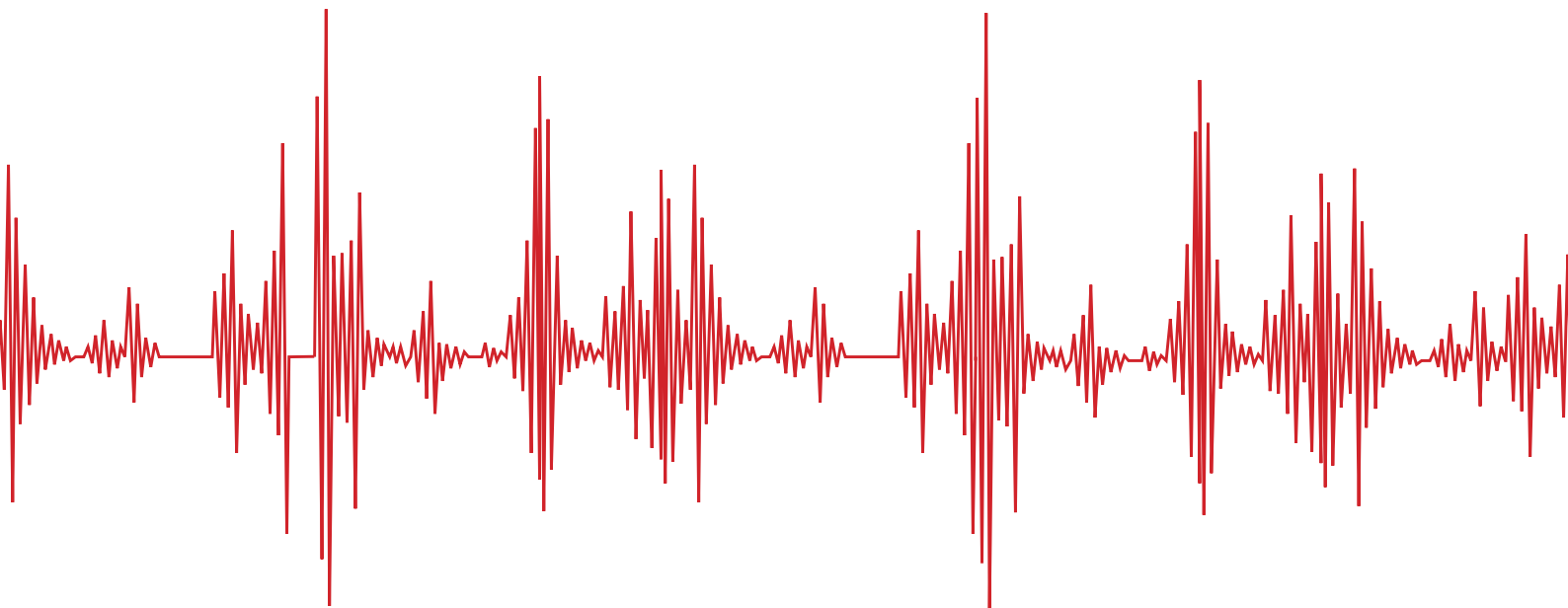
Extra for experts

If you want to find out more about this, visit the Te Ara website – www.teara.govt.nz/en/earthquakes/1/2/2

We measure the size of an earthquake using the Richter scale. This is known as its magnitude.

A Californian seismologist (earthquake researcher), Charles Richter, developed his scale as a way of comparing one earthquake with another.

Countries like New Zealand that sit on the edges of two plates have earthquakes often. Some of these earthquakes can hardly be felt. Some of them are much bigger and more dangerous.



Earthquakes can happen at any time of the day or night. You may be at home or at school. Everyone needs to know what to do if there is an earthquake.

What to do if an earthquake starts

If you are inside:

- drop, cover and hold on
- get under a bed or table or stand in a door way
- stay away from windows or anything heavy that might fall on you.

If you are outside:

- try to get into an open space
- keep away from buildings, high walls and power lines
- if you can't get away from buildings stand in a doorway.

What to do when a big earthquake stops:

- check to see if it is safe to move
- get help to put out any fires
- turn off the electricity and gas
- turn on your radio and listen for messages about what to do
- stay calm.

Survival

Be ready to survive.

1. Have a family plan. Decide what you will do if you are in different places.
2. Know how to turn off your water, gas and electricity.
3. Know where your nearest civil defence post is.
4. Know where else you can go to get help.

Makesure you have a survival kit and that everyone knows where it is.

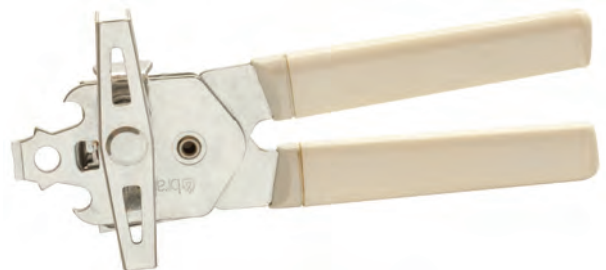


Survival kit

Have you got?

- A battery powered radio and spare batteries.
- A first aid kit and a first aid book.
- Emergency blanket.
- Enough canned food for 3 days and a can opener.
- Enough water for 3 days. Each person needs at least 3 litres per day.
- Water purification tablets.
- A torch and some spare batteries, some light sticks or some candles and matches or a lighter.
- Rubbish bags and toilet paper.
- Hand sanitiser.
- Gas cooker and a spare gas cylinder.





If you have to leave home take these things with you:

- blankets
- towels
- spare clothes
- toilet items
- family documents
- water
- essential medicines
- money.





Leave a message in your window when you go so people will know where to find you.

Name

This address is

We left at am/pm Date

We have gone to

The address is

Contact phone number

A separate workbook accompanies this reading booklet.

You can choose to complete activities after reading each section of the booklet or at the completion of the whole booklet.

You are encouraged to read the booklet several times to increase your comprehension.

Every effort has been made to acknowledge and contact copyright holders. Te Aho o Te Kura Pounamu apologises for any omissions and welcomes more accurate information.

Extract: Text only. Ruth McNab remembers the Napier earthquake 1931, from Robert McGregor, Publications Limited, Napier, New Zealand, 1989. Extract only.

Bigstock images © Bigstockphoto.com
Earthquake cracked road 30858467
LCD TV 6242222
Racing bike 6128078

Alexander Turnbull Library images
Buildings ruined by the 1931 earthquake, Napier 1931. 1/2-048342-F
Fireman in Hastings Street, Napier, 3 February 1931. 1/2-139885-F
Post Office, Hastings, damaged by earthquake 1931. 1/4-017239-F
People looking at damaged Grand Hotel, Hastings. 1/2-139759-F
Damage at Napier Wharf 1931. 1/2-135770-F
Shell truck on earthquake ruined road 1931. 1/2-135767-F

Istock images © Istockphoto.com
Water bottle 13787612
Towels 9784977
Documents 8189045
Clothes 14281373
First aid kit 11913327
Emergency kit 18424047

Text extract: Major New Zealand earthquakes since 1931 from www.geonet.org.nz/earthquake/historic-earthquakes
GeoNet content is © by GNS Science. Used by permission

All other photos: © Te Aho o Te Kura Pounamu.

