

## Curriculum Links

### Health: Healthy Communities and Environments

Students will investigate the effects that major earthquakes have had on New Zealand's environment in a historical context and the consequences for affected communities.

### Science: Planet Earth and Beyond

Students will gain an understanding of the causes of earthquakes, where they are most likely to occur, the amount of earth movement they cause and what earthquakes have created on the surface of the earth.

### Social Sciences: Continuity and Change

Students will learn the actions to take during an earthquake; the dangers they face both inside and outside; and how Drop, Cover and Hold will help protect them from injury. Students will gain an understanding that there are prior actions families can take and plans they can make to help them prepare for and minimise the effects of an earthquake.

Collect student ideas – anything at all that they know, or felt, saw, smelled or heard during an earthquake. If they haven't experienced one, get them to imagine these things. Use these ideas as a writing prompt for students to come up with a story about an earthquake.

## Past events

Look at the photos in this Stuff article showing the before and after of the 2011 Christchurch earthquake.

<http://www.stuff.co.nz/national/christchurch-earthquake/4705106/Photos-Before-and-after-the-Christchurch-earthquake>

Focus on the comparison pre- and post-quake as to how the damage to the city has impacted on peoples lives. Identify the consequences to everyday life of damage to infrastructure such as roads, sewerage or water.

In groups, have students research and report back on a historical earthquake. The Get Ready website has a list of historical events in New Zealand.

<https://getready.govt.nz/historical-emergencies/>

- *Where and when was it?*
- *What were the impacts for people?*  
*Get Ready has a list of common potential impacts of an emergency:*  
<https://getready.govt.nz/impacts-team/>
- *What were the impacts on the environment and the affected community?*
- *Were there any other hazards caused by this earthquake? e.g. tsunami, landslides*

## What happens in an earthquake?



Get students to discuss their ideas about earthquakes.

How many students in the class have felt an earthquake?

- *Where were they and what were they doing at the time?*
- *How big was it and how long did it last?*
- *What did they do during and after the earthquake?*
- *Was there any damage caused by the earthquake?*



# What causes an earthquake?

Play the following videos to the class to learn about tectonic plates, which cover the earth like a jigsaw puzzle.

<https://video.nationalgeographic.com/video/101-videos/00000144-0a2d-d3cb-a96c-7b2d6cd80000>

<https://www.youtube.com/watch?v=aQTfFCMYE14>

Find out how the movement of tectonic plates can create mountains, earthquakes and volcanoes, depending on which way the plates are moving.



Have students discover and discuss the following.

- *The names given to the plates, the ways they move past each other and how quickly they move.*
- *What happens when they get stuck and can't move past each other (what happens and what does this cause).*
- *The reasons why some locations (places) have more and larger earthquakes.*
- *The predictability or unpredictability of earthquakes.*
- *The serious effects earthquakes can have on people and their lives.*
- *How earthquakes are measured.*

## Earthquakes in Māori tradition

From the earliest times in New Zealand history, earthquakes and eruptions were recorded, both as eye witness accounts and as myths and legends.

Māori are kaitiakitanga of the land of Aotearoa and, as such, protect and guard the land no matter what form it takes. As tangata whenua, Māori have been involved in all of the emergency events in Aotearoa.

The Te Ara website has information on earthquakes in Māori tradition.

<https://teara.govt.nz/en/historic-earthquakes/page-1>

- *Invite iwi historians to visit your classroom to share local legends and accounts of emergency events in your area.*
- *Work with your students and their whānau to develop an understanding of the landscape of your local area. Learn Māori place names, especially for maunga and awa. Explore how the land may have changed over time and how this has affected the people who live there.*
- *Rūaumoko is the god of earthquakes and volcanoes. Explore his role in stories from different areas and compare different versions of the same story and the reasons and traditions behind them.*

In addition to exploring a Māori perspective, look to the stories and traditions of all of the students in your class. What other experiences, stories and perspectives can they bring?

## Before, during and after an earthquake

Print out or project the 'Drop, Cover, Hold Right Action Factsheet' pdf from the Get Ready website.

- *What do you do if you are inside a building and how does this help protect us?*
- *What do you do if you can't drop?*
- *Identify spots around the classroom where it would be safe to Drop, Cover and Hold.*
- *What do you do if you're outside?*
- *What causes most earthquake-related injuries?*
- *Why is it not safe to run outside during an earthquake?*
- *What should you do if an earthquake is Long or Strong? Why?*

Discuss with students what they think they can do with their families to help prepare for an earthquake.

Encourage students to make a plan with their family on Get Ready.

<https://getready.govt.nz/plan/>

Discuss with students what they should look out for after an earthquake.

Get Ready has a list of things to do and look out for after an earthquake.

<https://getready.govt.nz/earthquakes/#e559>