

Teacher Resource

Episode 3 23rd February 2016

Earthquake Anniversary



FOCUS QUESTIONS

- 1. Where in New Zealand was the earthquake in 2011?
- 2. What magnitude was the earthquake?
- 3. Describe the damage the earthquake caused.
- 4. There are still whole suburbs in Christchurch known as red zones. What does that mean?
- 5. Why did the kids in the BtN story need to leave their school?
- 6. What might happen to their old school? Why?
- 7. Why are parents and students unhappy about what might happen?
- 8. Describe the earthquake that happened in Christchurch recently.
- 9. How do the students prepare for earthquakes at their school?
- 10. What do you understand more clearly since watching the BtN story?



ACTIVITY

Negotiate with students how many activities they complete from each section.



REMEMBER / UNDERSTAND

After watching the BtN *Earthquake Anniversary* story, respond to the following questions:

- What did you SEE in this video?
- What do you THINK about what you saw in this video?
- What did you LEARN from this story?
- How did this story make you FEEL?
- What was SURPRISING about this story?



KEY LEARNING

Students will develop a deeper understanding of how earthquakes impact on people and places. They will also investigate what tectonic plates are and how they work.



Design and Technologies – Years 3 and 4

Recognise the role of people in design and technologies occupations and explore factors, including sustainability that impact on the design of products, services and environments to meet community needs

Science - Year 6

Sudden geological changes and extreme weather conditions can affect Earth's surface (ACSSU096)

Scientific knowledge is used to solve problems and inform personal and community decisions (ACSHE100)

Science - Year 9

The theory of plate tectonics explains global patterns of geological activity and continental movement (ACSSU180)

Geography - Year 8

Causes, impacts and responses to a geomorphological hazard



Glossary

Create a glossary of word associated with earthquakes. Ask students to write what they think each word means then swap definitions with a partner and ask them to add to or change the definition. Check them using a dictionary or other source.

Keywords	My definition	Dictionary definition
earthquake		i i
epicentre		i i
Magnitude		
Richter scale		
Plate tectonics		

Christchurch earthquake, 2011

Watch the BtN NZ Earthquake story to get a better understanding of what happen in Christchurch on February 2011 then answer the following questions:

- Describe the devastation the earthquake caused.
- What magnitude was the earthquake in 2011?
- Why do a large number of earthquakes happen on the 'Ring of Fire'?



NZ EARTHQUAKE



APPLY / ANALYSE

Earthquake-proof buildings

Students will investigate what makes a building earthquake-proof.

Some questions to consider include:

- Which buildings around the world have survived earthquakes? For example, the Hagia Sophia in Istanbul, Turkey. What are the features of the structure that make it able to withstand earthquakes?
- What are the design features of an earthquake-proof building?





- Does Australia have a building code about earthquake-proof buildings?
- What is being done in Christchurch to make buildings earthquake-proof? Find out more about the `Cardboard Cathedral' built in Christchurch when the original cathedral was badly damaged in the earthquake.

Students can present their research findings as an interactive poster, illustration or oral presentation.



Cardboard Cathedral

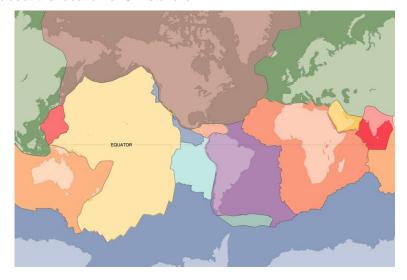
Tectonic Plates

Investigate what tectonic plates are and how they work. Some questions to investigate include:

- What is the top layer of the earth called?
- What are tectonic plates?
- Where do most earthquakes occur?
- What are the edges of tectonic plates called?
- What are the types of tectonic plate movement?
- What does the` Ring of Fire' have to do with plate tectonics?

Using this map of tectonic plates template locate and label the 15 major tectonic plates. Locate NZ on the map. What do you notice about the location of Christchurch?

- 1. Eurasian plate
- 2. Australian plate
- 3. Filipino plate
- 4. North American plate
- 5. Juan De Fuca plate
- 6. Pacific plate
- 7. Cocos plate
- 8. Nazca plate
- 9. Caribbean plate
- 10. South American plate
- 11. Scotia plate
- 12. African plate
- 13. Arabian plate
- 14. Indian plate
- 15. Antarctic plate



Map: http://en.wikipedia.org/wiki/List_of_tectonic_plates#/media/File:Plates_tect2_en.svg



EVALUATE / CREATE

Earthquakes Q & A

Make a list of questions you have about earthquakes that you would like to ask a seismologist or geologist. Use the internet to find answers to your questions. Visit the following websites and see which questions are answered.

ABC Science – Ask an Expert!

http://www.abc.net.au/science/expert/realexpert/earthquakes/

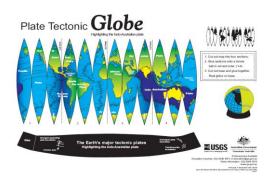




http://www.ga.gov.au/scientific-topics/hazards/earthquake/basics

Make a model

Students create a model using the <u>map template</u> and a tennis ball to help them visualise the Earth's major tectonic plates. The model shows major plate boundaries, boundary types and highlights the Indo-Australian tectonic plate.



Source: Geoscience Australia



Behind the News – NZ Earthquake http://www.abc.net.au/btn/story/s3148193.htm

Behind the News – Ring of Fire http://www.abc.net.au/btn/story/s2709798.htm

BBC – How Earthquakes happen http://news.bbc.co.uk/2/hi/in_depth/4126809.stm

Scholastic - Earthquake Rocks New Zealand http://www.scholastic.com/browse/article.jsp?id=3755744&grade=78

ABC Science – Ask an Expert! http://www.abc.net.au/science/expert/realexpert/earthquakes/

Geoscience Australia – Earthquake Basics http://www.ga.gov.au/scientific-topics/hazards/earthquake/basics



Subscribe to our weekly newsletter for an update on upcoming BtN stories and other useful and relevant teacher information. Visit the BtN website and go to the Teachers page to join up.

Encourage your students to be active and informed citizens by watching our 10 minute news program each day. Go to the BtN homepage and click on the 3News link.



