

Student activity:

Cut out these cards and sort them into different categories:

1. Causes and background information 2. Impacts 3. Responses

1. An earthquake struck New Zealand's south island on 22 February 2011 at 12.51pm	2. Hospitals survived the earthquake and medical teams organised treatment for victims	3. The epicentre was 10 km away from Christchurch, which is the second highest populated city in New Zealand
4. Liquefaction occurred, when the ground shakes and causes water (and often mud) to rise to the surface	5. Cars and buses were reported to be crushed by falling debris	6. 27000 chemical toilets were flown into the area as sanitation and sewerage works were damaged
7. New Zealand has very strict building codes which limit damage during earthquakes	8. Land that was damaged by liquefaction cannot be built on again	9. The earthquake was felt across the south island and in some parts of the north island
10. High-rise buildings constructed within the last 30 years generally survived the earthquake	11. Water supplies were restored to 70% of households within one week	12. New Zealand is located on the plate boundary between the Australian and Pacific plates
13. Electricity was restored to 80% of household within five days, and to 95% of households within two weeks	14. The government declared a national state of emergency which remained in place until 30 April 2011	15. Building damage was widespread because the 2010 earthquake had already weakened building structures
16. The Christchurch area of New Zealand also suffered an 7.1 magnitude earthquake in September 2010	17. Over half of deaths occurred in the six storey Canterbury Television (CTV) building when it collapsed and caught fire	18. Search and rescue teams came from New Zealand, Australia, UK, USA, Japan, Taiwan, China and Singapore
19. The earthquake caused shaking that lasted for 12 seconds	20. Liquefaction produced 400000 tonnes of silt	21. Satellite imagery was used to co-ordinate the recovery of New Zealand



<p>22. The 2011 earthquake was of smaller magnitude than the 2010 earthquake, but was more destructive for many reasons:</p> <ul style="list-style-type: none"> • Epicentre closer to Christchurch • Struck in the middle of the day • More liquefaction causing greater damage to infrastructure 	<p>23. The Australian police joined forces with New Zealand police to enforce cordons, organise evacuations, help with search and rescue, traffic control and prevention of looting</p>	<p>24. The New Zealand Defence Force provided equipment, transport, evacuation, food and water aid to 1000 homeless people as a result of the earthquake</p>
<p>25. Electricity companies worked around the clock to restore power to areas that were cut off</p>	<p>26. Although many buildings did not collapse during the earthquake, they were demolished because they were unsafe</p>	<p>27. Christchurch International Airport was unaffected by the earthquake, but was closed as a precaution</p>
<p>28. The earthquake was a shallow-focus earthquake with a depth of 5 km</p>	<p>29. A full emergency response plan was in place within two hours of the earthquake happening</p>	<p>30. The Australian Government donated NZ\$6.7 million to the Red Cross appeal</p>
<p>31. The New Zealand Red Cross launched an appeal to raise funds to help victims</p>	<p>32. Landslides in some suburbs caused serious damage to buildings</p>	<p>33. The plate boundary moves in two ways, destructive (convergent) and conservative (transform)</p>
<p>34. Communication companies worked to restore telephone lines</p>	<p>35. 185 people were killed in total</p>	<p>36. Approximately 2000 people were treated for minor injuries</p>
<p>37. Local people helped with the cleaning up of their local areas</p>	<p>38. Bottled water was provided as water supplies were cut off</p>	<p>39. 10000 houses would need to be re-built</p>
<p>40. Road and bridges were severely damaged in places</p>	<p>41. The earthquake was magnitude 6.3 on the Richter scale</p>	<p>42. Christchurch cathedral lost its spire</p>



Teacher answers:

Causes and background information

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10. High-rise buildings constructed within the last 30 years generally survived the earthquake	15. Building damage was widespread because the 2010 earthquake had already weakened building structures	17. Over half of deaths occurred in the six storey Canterbury Television (CTV) building when it collapsed and caught fire
20. Liquefaction produced 400000 tonnes of silt	26. Although many buildings did not collapse during the earthquake, they were demolished because they were unsafe	27. Christchurch International Airport was unaffected by the earthquake, but was closed as a precaution
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Responses:

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