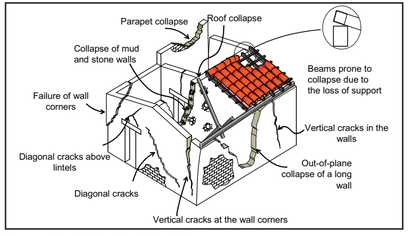
SOURCE 12: ADOBE DEFINITION

Adobe is a mud material made from local soil. Very often organic material such as grass or animal manure is incorporated for extra strength. Adobe is extremely durable in dry climates and has extensive thermal properties.

Source: Adapted from Marcial Blondet, G. V., 2003

SOURCE 13: PROBLEMS ASSOCIATED WITH TRADITIONAL ADOBE HOUSES



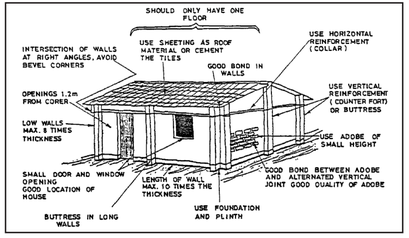
Source: Marcial Blondet, G. V., 2003

SOURCE 14: CHILEAN SEISMIC DESIGN CODE

The Chilean Seismic Design Code (CSDC) is used by the Chilean government to design, build, and rebuild houses, commercial buildings and public buildings. The building code sets out the minimum requirements for the reinforcement of buildings to withstand an earthquake. Adobe houses can be reinforced to mitigate the problems associated with traditional adobe houses. The code plans for the safety of occupants in the design of concrete commercial buildings. Important public buildings, such as hospitals, water works and power plants, use the code to increase the specifications of design so that major public services are maintained in the event of an earthquake. The building code responds to the importance of the building, the weight of the building and the expected movement of the soil foundation in an earthquake.

Source: Adapted from Ministry of Housing and Urbanism, 2010 and National Institute of Standardization, 1997

SOURCE 15: BUILDING CODES TO REINFORCE ADOBE BUILDINGS AGAINST SEISMIC MOVEMENT



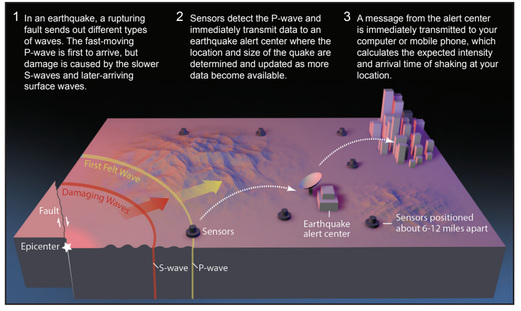
Source: Arya, A., 2005

SOURCE 16: THE ALTO RIO IN CHILE AFTER THE 2010 EARTHQUAKE

A collapsed building (the Alto Rio) lays in ruins after an earthquake in Concepcion, Chile.

Source: China Daily, 2010

SOURCE 17: HOW SHAKEALERT WORKS



Source: U.S. Geological Survey, 2015

SOURCE 18: SHAKEOUT PLUS TSUNAMI EVACUATION DRILL

Source: Southern California Earthquake Center, 2015

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6	by courtesy of Encyclopaedia Britannica Inc., copyright 2016; used with permission. *Chile earthquake of 2010.* Retrieved December 8, 2015, from Encyclopaedia Britannica: http://kids.britannica.com/elementary/art-139466/Map-depicting-the-intensity-of-shaking-experienced-during-the-Chile
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Monday 6 June 2016

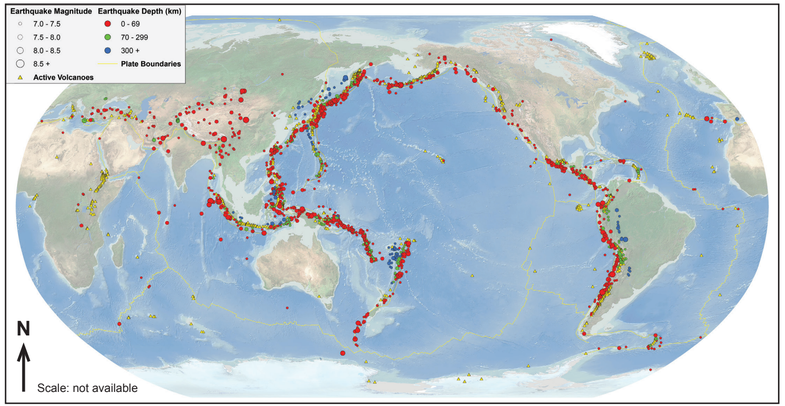
Stimulus

Geography

Year 11 — Data response test

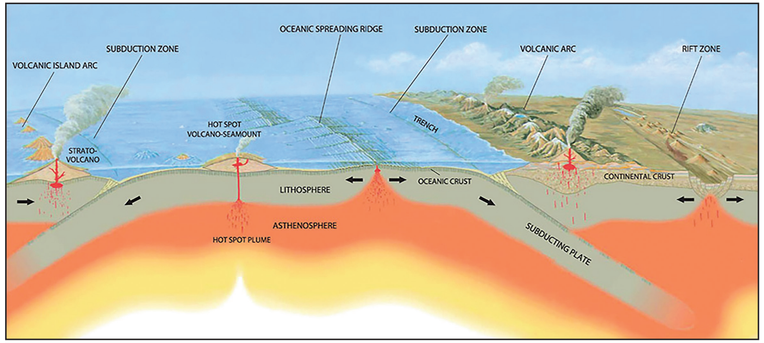
Queensland Government | QCAA Queensland Curriculum & Assessment Authority

SOURCE 1: SEISMICITY OF THE EARTH 1900–2013



Source: USGS, 2015

SOURCE 2: PLATE TECTONICS



Source: Vigil, J.F. and USGS, 1999

SOURCE 4: WATER SCARCITY AFTER 2010 EARTHQUAKE, CHILE

Residents of Concepción, Chile, draw water from a public fountain on 28 February 2010. The city's water supply was shut off following the earthquake.

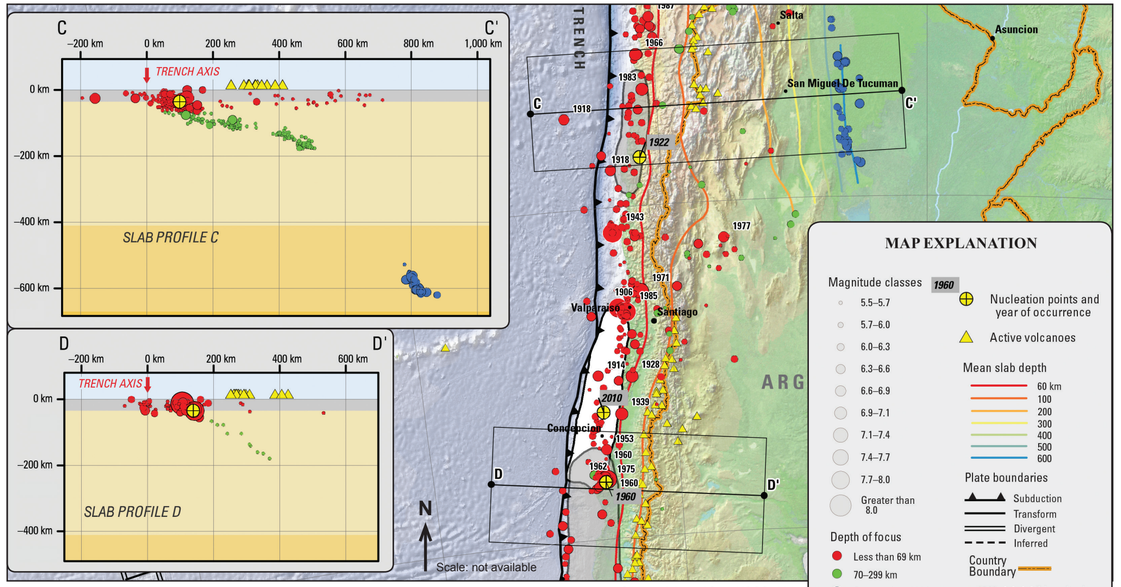
Source: Saavedra, J. L. and Reuters, 2010

SOURCE 5: IMPACT OF TSUNAMI AT TALCAHUANO HARBOUR, CHILE

Talcahuano Harbour three days after the tsunami caused by the 27 February 2010 earthquake. Shipping containers, originally stacked in the area of the red oval were displaced up to 300 metres in the direction of the arrow.

Source: Pacific Earthquake Engineering Research Centre, 2010

SOURCE 3: LOCATION, MAGNITUDE AND DEPTH PROFILES FOR CHILEAN EARTHQUAKES 1900–2013



Source: Adapted from USGS, 2015

MAP EXPLANATION

Magnitude classes
5.5–5.7
5.7–6.0
6.0–6.3
6.3–6.6
6.6–6.9
6.9–7.1
7.1–7.4
7.4–7.7
7.7–8.0
Greater than 8.0

1960 Nucleation points and year of occurrence

Active volcanoes

Mean slab depth
60 km
100
200
300
400
500
600

Plate boundaries
Subduction
Transform
Divergent
Inferred

Country Boundary

1911 8.0-8.2 Magnitude earthquake location

1935 7.5-8.2 Magnitude earthquake location

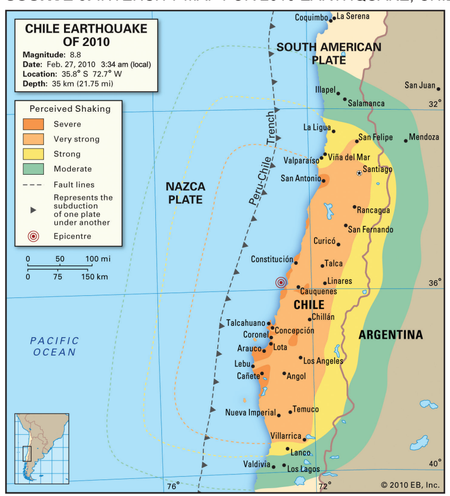
Depth of focus
Less than 69 km
70–299 km
Greater than 300 km

Aftershock zones*

Rupture zones*

*Aftershock zones for large earthquakes represent the area over which significant aftershock activity was observed in the immediate vicinity of the main shock, within tectonic environments coupled to the main shock system.

SOURCE 6: INTENSITY MAP FOR 2010 EARTHQUAKE, CHILE



Source: Encyclopaedia Britannica, 2010

SOURCE 7: INSURANCE CLAIMS MADE ON PROPERTY DAMAGED BY 2010 EARTHQUAKE, CHILE

Property type	*Number of claims*	*Amount (in $ millions)*
Residential	189,451	1,256
Automotive	4,678	22
Commercial	24,276	1,334
Industrial	2,840	1,423
TOTAL	**221,245**	**4,035**

Insurance claims and amounts paid, as of December 2010; total estimated loss is expected to reach $8.5 billion.

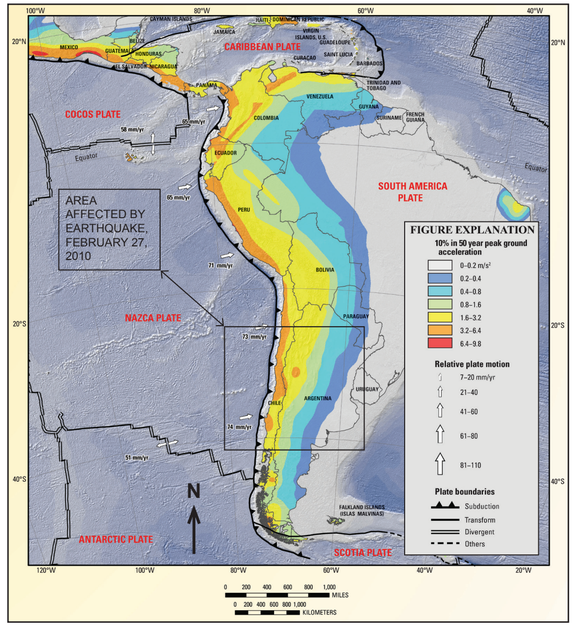
Source: Rios, E., 2011

SOURCE 8: POPULATION WITH MOBILE PHONE OWNERSHIP, CHILE

91%

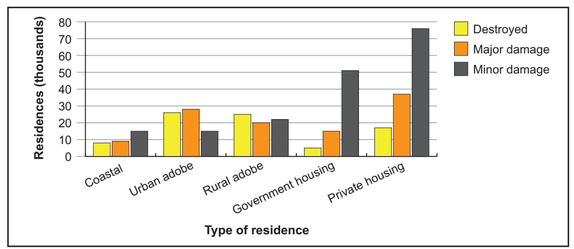
Source: Adapted from: Pew Research Center, 2014

SOURCE 9: SEISMIC HAZARD AND RELATIVE PLATE MOTION



Source: USGS, 2015

SOURCE 10: RESIDENTIAL PROPERTIES AFFECTED BY 2010 EARTHQUAKE, CHILE



Residential damage estimates for affected regions of Chile as of March 2010.

Source: Elnashai, A. S., et al., 2010

SOURCE 11: STATISTICS FOR 2010 EARTHQUAKE, CHILE

No. of people affected	No. of injuries	No. of deaths	Estimated total cost of damage	No. of residential buildings affected	No. of adobe houses affected	Length of roads damaged or destroyed	No. of hospitals affected	No. of fishing boats destroyed	No. of uninsured houses affected	% Reduction of Chile's GDP
12 880 000 or 75% of population	>12 000	>525	US$30 billion	370 051	135 433	1553 km	130	710	180 600	18%

Source: QCAA, 2015