**Responding to earthquake risk in China**

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| **OBJECTIVES** | | | |
| **Achievement Objectives:**  Understand that natural and cultural environments have particular characteristics and how environments are shaped by processes that create spatial patterns.  Understand how people interact with natural and cultural environment and that this interaction has consequences. | | **Year Level: 11**  **Curriculum level: 6**  **Unit Duration**: 4-5 weeks | |
| **INTEGRATION INTO OTHER LEARNING AREA** | | | |
| **Values:**  Excellence  Innovation, inquiry, and curiosity  Diversity  Equity  Community and participation  Integrity  Respect | **Key Competencies:**  [Thinking](http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies#thinking)  [Using language, symbols, and texts](http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies#language)  [Managing self](http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies#managing)  [Relating to others](http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies#relating)  [Participating and contributing](http://nzcurriculum.tki.org.nz/The-New-Zealand-Curriculum/Key-competencies#participating) | | **Principles:**  [**High expectations**](http://nzcurriculum.tki.org.nz/Principles/High-expectations)   [**Cultural diversity**](http://nzcurriculum.tki.org.nz/Principles/Cultural-diversity) [**Inclusion**](http://nzcurriculum.tki.org.nz/Principles/Inclusion)   [Learning to learn](http://nzcurriculum.tki.org.nz/Principles/Learning-to-learn) [Community engagement](http://nzcurriculum.tki.org.nz/Principles/Community-engagement)  [**Future focus**](http://nzcurriculum.tki.org.nz/Principles/Future-focus) |
| **Unit Focus: AS 1.1**  Demonstrate the geographic understanding of environments that have been shaped by extreme natural events. | | **Context:**  Earthquakes in China  Sichuan 2008  Sichuan 2014 | |
| **Conceptual Understandings:**   * People’s interaction with the environment has made them more vulnerable to the impacts of earthquakes. * Natural and cultural features of an environment are changed by earthquakes * People and groups have responded in ways to minimise the effects of earthquakes. * Processes have altered the natural and cultural environment. | | **Geographic Concepts:** Location, Process, Interaction, environment, change  **Additional Concepts:** vulnerability,effects, decision making, response, | |

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| **Case Study one: Sichuan/Wenchuan earthquake May 12, 2008** |

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| **Section One:**  **Conceptual understandings**  Environments have natural and cultural features.  People’s interaction with the environment has made them more vulnerable to the impacts of earthquakes. | |
| **Geographic Concepts: location, environment** | **Resources** |
| Activity 1  Provide each student with a small slip of paper. Tell students to record their answer to each of the questions below on their named slip. This will help you to access students prior knowledge and misunderstandings surrounding earthquakes and will inform your decisions around teaching and learning for this unit.   1. What do you know about what causes earthquakes? 2. What do you know about how earthquakes affect people and/or the land? 3. What do you know about how people respond to earthquakes? | A small slip of paper for each student |
| Activity 2  Provide students with a copy of resource ---.  In this activity, guide students to use all features of a resource rather than going directly to the text.  Direct students to Map 1 on the resource first. Have students describe the location of Sichuan Province in relation to Beijing and Shanghai in 2-3 sentences. They might use terms such as: proximity, distance, inland, coastal and compass directions. If you notice students not using these terms you may need to stop and model this to students or prompt them.  Next, direct students to Map 2 on the resource. Students are to describe the distribution of cities and counties within Sichuan Province. They might use terms such as: distance, location, proximity and concentrated. You may need to explain these terms and model the use of one first.  Now direct students to the written text on the resource. As students read the text ask them to highlight in one colour features that are natural and in another colour features that are cultural. You may need to clarify these terms first.  Have students sketch Sichuan Province in their books. On their sketch tell them to locate, shade and annotate the natural features. Key natural features could include: the mountain range, plateau, basin Yangtze river and its main tributaries. | Activity 2 resource  Access to an Atlas |
| Activity 3  At this point you might like to emphasise that Sichuan Province is in an active tectonic zone. A power point resource is available with this unit. You could show the slide that illustrates the plates that Sichuan Province sit on and ask them to add this to their sketch. Earthquake processes will be explored in later activities so you do not need to go in-depth at this stage.  Students complete a word map for the concept: *Vulnerable*. To complete the word map they will draw on the information and learning from the previous activity and their prior knowledge. | Activity 3 task |

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| **Section Two:**  **Conceptual understanding**  Natural and cultural features of an environment are changed by earthquakes | |
| **Geographic concepts: environment, location, change, interaction** | **Resources** |
| Activity 4  There are a multitude of videos available from you tube that illustrate the effects of the Sichuan 2008 earthquake on people and the environment. Some links have been identified in the column to the right.  Watch a selection of video to illustrate the effects of earthquakes on Sichuan Province. As students watch the video, have them list the effects they see in their books. | You tube links:  <https://www.youtube.com/watch?v=IvDuf9zVPOk>  <https://www.youtube.com/watch?v=TJBYxxQwTZo>  <https://www.youtube.com/watch?v=qBRrEl6DzEc>  <https://www.youtube.com/watch?v=78h-BpSkk1w> |
| Activity 5  Explain the terms: economic, social and environmental.  The text provides additional effects to those in the videos. In small groups students use the text and sort the effects into three categories. Economic, social and environmental. Tell students that some effects can be placed into more than one category depending on your thinking. Groups can present their categories to each other with explanation about why they have placed some in particular categories.  Individually have students return to the list they have in their books from watching the video. Have students do the same categorisation as they have just done.  Have students consider the questions below   * What effects are more severe? * Have people been affected the same way? | Activity 5 resource |
| Activity 6  Model how to make a sketch from a photograph or image paying attention to the importance of annotation.  From the previous activities students are to pick one environmental change that has occurred due to the earthquake. They to draw an annotated sketch to describe the change. A short description should accompany the sketch to highlight 1-2 flow on effects of the change.  Use the same resource as for activity 5. | Activity 5 resource |
| Activity 7  Concept triangles help students to make links between important concepts. The resource provides several concept triangles for students to use and make connections.  Model to students the process of connected concepts and the thinking involved. Then have students complete the other concept triangles.  A good statement will include each concept and will demonstrate the student is making connections rather than a student writing a single statement for each statement. By adding an example or piece of evidence from the Sichaun earthquake students are also making connections to the evidence to support their idea.  An **example** of a statement could be: *People have interacted with their environment. This has led to greater change in some places compared to others.* | Activity 7 task |
| Activity 8  Practice exam question  Provide students with the question. First, have students:   * Identify the key words in the question * Consider how they might structure their response – explain the GEEK structure * Read the marking schedule and identify their goal (what do they want to achieve? And what do they need to do to get there?)   Remind students to use the resources provided to them in earlier activities to complete their response. This is not a closed book activity. | Activity 8 resource  Activity 8 task |

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| **Section Three:**  **Conceptual Understanding**  People and groups have responded in ways to minimise the effects of earthquakes. | |
| **Geographic Concepts: interaction, change** | **Resources** |
| Activity 9  Explain to students that people and groups respond over time and that time can be divided into different forms of response.  Emergency response: 1-2 weeks  Recovery: 2 weeks – 6 months  Reconstruction: more than 6 months  In groups have students sort the response of the government into the three time periods.  Have students consider:   * How did the Government response change over time? * What appeared to take greater priority? * What do you think the government values? |  |
| Activity 10  Explain how the values of people, groups and organisations influence the way they respond to events and issues.  In pairs have students make a list of the Government actions in response to the earthquake.  Take one action as an example and model to students how you would identify their values.  Example: One action of the government was to mobilise 130,000 soldiers from the Peoples Liberation Army to provide search and rescue, restore access and maintain order. This indicates that the government values human life, people, safety and security.  Have students return to their list to identify the values. Tell students that some values may occur more than once.  You may need to explain these terms first:  Value  Viewpoint  Action | Activity 10 task  Link to additional text resources:  <http://www.chinaview.cn/08quake/gover.htm> |
| Activity 11  Tell students that many groups and organisations where involved in the response to the earthquake. UNICEF was one of these additional groups. Explain how the values of people and organisations influences the way they respond.  Have students use the resource and complete a chart to show the actions and values of UNICEF.  Students add to the table in the previous activity  Have students consider:   * How different and similar were the response of the Government and UNICEF? * Do their different responses complement each other? | Activity 10 task  Activity 11 resource |

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| **Section Four:**  **Conceptual Understanding:**  Processes have altered the natural and cultural environment. | |
| **Geographic Concepts: process, environment** | **Resources** |
| Activity 12  A power point has been created to illustrate the processes that have caused the Sichuan 2008 earthquake. It is divided into two sections:  Section one: processes within the earth  Section two: processes on the earth.  As you work through the power point have students write 1-2 ideas that stands out about each image. | Activity 12 resource |
| Activity 13  There are several terms in the earthquake process that students need to be able to connect and sequence correctly.  In this activity students select a term from the list and make a connection to another term. It will require them to sequence the terms and ideas correctly and think about the connection they are making.  You may like to add to the key terms and ideas that are already identified in the activity. You could also ask students to identify if any key terms or ideas are missing that should be included. | Activity 13 task |
| Activity 14  Have students construct a flow chart that correctly sequences the steps of the process. For each step they need to provide a visual and short description of what is occurring. Sketches should be annotated so that it is specific to the Sichuan 2008 earthquake. |  |
| Activity 15  Many children were casualties of this earthquake or affected in other ways. Students can work in small groups or individually to create a childrens book or poster that explain in a simple manner how earthquakes occur in their environment. |  |

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| **Case study two: Lushan/Ya’an earthquake 20 April 2013** |

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| **Section Five:**  **Conceptual understandings**  People and groups have responded in ways to minimise the effects of earthquakes.  Natural and cultural features of an environment are changed by earthquakes | |
| **Geographic Concepts:** | **Resources** |
| Activity 16  Introduce students to the Lushan/Ya’an earthquake by beginning with the processes. These are very similar to the Sichuan/Wenchuan earthquake so students can draw on their previous learning.  Watch the you tube videos of the Lushan/Ya’an earthquake. Have students identify the effects and sort them into categories as they have done in the earlier activity. This list will help students in the following activity. | Activity 16 resource  <https://www.youtube.com/watch?v=hksewQiXYag>  <https://www.youtube.com/watch?v=-PdF8OYI7RY> |
| Activity 17  Photos and other images are effective in showing the severity of an event. Explain how a photo journalist travels to different areas, often at risk to take images that are shared in print and online around the world.  In this task, students take on the role of a photo journalist to find and select images that illustrate the effects of the Lushan/Ya’an earthquake of people, the economy and environment. | Activity 17 task  Link to additional text resources  <http://www.chinadaily.com.cn/china/2013sichuanquake/>  Link to photos:  <https://www.youtube.com/watch?v=ehGcTArKeTg> |
| Activity 18  Tell students that following the 2008 earthquake changes were made to reduce the vulnerability of people to earthquakes in the province. This adds an additional time period to the response of groups and organisations.  Before the earthquake  Emergency response: 1-2 weeks  Recovery: 2 weeks – 6 months  Reconstruction: more than 6 months  Students are to use the resources provided to identify how the government responded at different time periods. | <https://www.youtube.com/watch?v=hc5wbCIVSSI>  <http://www.chinadaily.com.cn/china/2013sichuanquake/>  Activity 18 task  Activity 18 resource |
| Activity 19  As with the earlier earthquake in 2008, several groups and organisations also responded to the Lushan/Ya’an earthquake.  Have students carry out an inquiry into another group. Their inquiry questions (2-3) should be thoughtful and not just content based.  Examples of inquiry questions could be:   * How has insert group responded to the Lushan/Ya’an earthquake * What values and beliefs does this group hold that have influenced their response? * How did they interact with other groups and the local people to respond?   Students can share their presentations with the class. | Need instructions for inquiry  <http://www.chinadaily.com.cn/china/2013sichuanquake/>  Activity 19 task |
| Activity 20  The Sichuan 2008 earthquake and Lushan/Ya’an earthquake had similarities and differences. In this activity students take the role of a journalist for a global news agency to compare and contrast elements of the earthquakes. | Activity 20 task |