The Kobe Earthquake

Submitted by: Lola A. Boxley,
DCGA Teacher Consultant

Grade Level: 6-8

Overview:

The purpose of this lesson is to acquire, organize, and analyze geographic information about the 1995 Kobe earthquake to understand why it occurred at that location. Students will learn of the devastation that the people of Kobe, a port city in Japan, endured as a result of a force of nature. Additionally, students will learn of the steps that the Japanese have taken to lessen destruction in the event of future occurrences.

Connections to the Curriculum:

Geography, Earth Science

Connections to the National Geography Standards:

Standard 7: "The physical processes that shape the patterns of Earth's surface "

Time:

Two hours

Materials Required:

- Computer with Internet access
- Printed materials: "What are Earthquakes?", "Kobe Earthquake," Earthquake Quiz, Four-Door Books instructions
- Atlas
- Four-Door Books (*Prepare ahead of class*.)

Vocabulary:

1. Earthquake – A sudden movement of rock in the Earth's crust which releases pressure and shockwaves.
2. Epicenter – The point on Earth's surface directly above the focus.
3. Faults – The cracks that occur in brittle rock as lithospheric plates move. They are weak zones where more movement or cracking may occur.
4. Focus – The point where energy is suddenly released and an earthquake starts.
5. Magnitude – The intensity of an earthquake represented by a number on an arbitrary scale.
6. Seismic Shock Waves – The vibrations that travel from the focus in all directions.
7. Seismologists – The scientists who study earthquakes.

Source: The Usborne Internet-Linked Science Encyclopedia

Objectives:

Students will

- build on their prior knowledge of earthquakes to learn about the geological forces that caused the1995 Kobe earthquake;
- organize and analyze information to make projections about future occurrences.

Geographic Skills:

Acquiring Geographic Information
Organizing Geographic Information
Analyzing Geographic Information

Suggested Procedure

Opening:

Access students' prior knowledge by posing the four questions from the Earthquake Quiz on http://projects.crustal.ucsb.edu/understanding/quiz/. (Hint: *Print the quiz and answers ahead of time to build common knowledge with the class.*)

Development:

Have students read "Kobe Earthquake" on http://www.georesources.co.uk/kobehigh.htm, or provide them with printed copies of the article. Ask students to take out their Four-Door Books. (Note: You should have the students prepare these the day before you do the lesson.) After students follow the printed instructions for the books in *Dinah Zike's Big Book of PROJECTS*, p.44, tell them to write *Kobe Earthquake* on the cover. In the middle of the top l-h door, write *Cause*, then write *Effect* opposite it. Next, write *Recovery* on the lower l-h door and *Prediction* on the remaining door. Then have students write a summary paragraph for each of the subtopics. Remind them to use key vocabulary words such as *earthquake, epicenter, fault, focus, magnitude, seismic shock waves,* and *seismologists* to support their writing.

Closing:

Help students recall the basic information about earthquakes. Have students discuss their findings and use their understanding of Japan's unique geographical location to share predictions about future earthquakes in the area around Kobe.

Suggested Student Assessment:

Use the article "Kobe Earthquake" to check for accuracy. Accept all predictions that demonstrate an understanding of Japan's unique location on three continental plates (Eurasian, Philippine, and Pacific) and that use key vocabulary appropriately.

Extending the Lesson:

Challenge students to locate additional sources to learn about other historical and current earthquakes around the globe:

- National Geographic Society
- U.S. Geological Survey
- World-Wide Earthquake Locator

Related Links:

http://www.lib.kobe-u.ac.jp/directory/eqb/photo/shindo/Eng/index.html
http://www.nationalgeographic.com/forcesofnature/interactive/ad.html
http://projects.crustal.ucsb.edu/understanding/elastic/intro-rebound.html
www.usborne-quicklinks.com
http://www.lib.kobe-u.ac.jp/directory/eqb/photo/shindo/Eng/index.html
http://pubs.usgs.gov/gip/earthql/