Earth's Dynamic Geosphere: Earthquakes Activity 4 - Earthquake History of Your Community

This investigation will help you to:

- Investigate
- Understanding and Applying What You Have Learned
- Preparing for the Chapter Challenge
- Learn more about Earthquake Patterns and Plate Tectonics
- Learn more about Areas of Risk in the United States

Investigate

1. In your group, take a close look at the US Geological Survey map: *This Dynamic Planet*
   Click on title ("This Dynamic Map") to download a copy of the map as a PDF file. Note that you will need Adobe Acrobat (available for free on the USGSS site) to open this file.
   The map can also be purchased for $7 (plus $5 s/h) from:
   USGS Information Services
   Box 25286
   Denver CO 80225

3. Obtain a map of the world and a geological map of California (with latitude and longitude marked). If possible, obtain a geologic map of your region (with latitude and longtitude marked).
   - Geologic Map of California in PDF format.
   - Geologic Map of California.
   - Geologic Map of California. Note, key needs to be referenced from another page to understand map.

4. Refer to the US Geological Survey map: *This Dynamic Planet* used in Question 1.

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Understanding and Applying What You Have Learned

Write a background summary for the brochure for your chapter challenge. Discuss the earthquake history of California and your community. Note any major earthquakes. Also, note the frequency of earthquakes that have been felt, and the maximum magnitude the public should prepare for. Include maps and diagrams as needed.

- Learn about the locations, dates, magnitudes, deaths, injuries and property damage of California earthquakes.
- Examine seismic shaking hazard maps of California to see areas damaged by historic earthquakes (1800-1998).
- Study a list of known earthquakes with a magnitude of at least 6 and selected smaller events.
- Learn about notable California earthquakes including the dates they occurred, their magnitudes, epicenter locations, their regional affects and loss of life and property.

- Examine a map that shows faults used in modeling seismic shaking hazards.
- Read about the intensity of one of the most significant earthquakes of all time.

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Preparing for the Chapter Challenge

Use the resources listed below to answer the following questions.

a) What is the maximum number of earthquakes with magnitude 7 or greater that occurred in one year from 1900 to 1989?

b) On average, how many earthquakes of this size happen in a given year?

c) Describe any patters that you see in the data.

d) Can you suggest any natural forces that might cause the observed variation in the number of earthquakes over time? Explain.
Click on the earthquake of interest to receive additional information about the quake including, in some instances, maps and photos of damage.

20 largest recorded earthquakes. Click on the earthquake of interest to receive additional information about the quake.

Map of global earthquake locations shown as focal depths.

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Learn more about Earthquake Patterns and Plate Tectonics

"World Seismicity" - USGS National Earthquake Information Center
Map of global earthquake locations shown as focal depths.
" Earthquakes and Plate Tectonics" - USGS National Earthquake Information Center
Explains the distribution of earthquakes around the globe. Includes a review of plate tectonic theory and the four types of seismic zones. Also includes examples of each type of seismic zone.
"Plate Tectonics, the Cause of Earthquakes" - University of Nevada Seismology Lab
This site contains many excellent images, including technical illustrations, satellite images, and maps, that illustrate the link between plate tectonics and earthquakes.
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Learn more about Areas of Risk in the United States

" United States Seismicity" - USGS National Earthquake Information Center
Click on the region or state of your choice to view a map of seismicity in that area and be given several clickable links to access further information on the geology of that particular area.
The National Seismic Hazard Mapping Project home page - USGS
Numerous links allows you to explore around the site and learn more about the project.
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