

Name _____ Date _____ Per _____

A Whole lot of **Shaking** Going on!

Purpose: To use subjective and objective methods to describe an earthquake and the effects it had on different regions and cultures of the world.

Part I: The effects of large magnitude earthquakes

- Choose an earthquake to study. In order to find the most information choose an earthquake that had a magnitude of 6.5 or greater.
- Below is a link to the USGS website that will help you choose an earthquake. Use the guidelines and questions given to focus your research efforts. You will be required to give an informal, short presentation on your earthquake.

<http://earthquake.usgs.gov/eqcenter/eqarchives/significant/>

- The link above will take you to a USGS website that catalogs the significant earthquakes of the world from 1977-2008.
- In order to successfully complete this assignment it is necessary that you select an earthquake that was near civilization (i.e., not in the middle of the ocean).

Suggested Earthquakes:

- The Great San Franciscan Earthquake, 1906 magnitude 7.8
- Hokkaido, Japan , magnitude 7.6, July 1993
- Off West Coast of Northern Sumatra, December 2004, magnitude 9.0
- Mindoro, Philippine November 1994, magnitude 7.1
- Central Mexico, June 15th 1999, magnitude 6.9
- Turkey, August 17th 1999, magnitude 7.4
- Solomon Islands, April 1st 2007, magnitude 8.1
- Eastern Sichuan, China, May 12th 2008, magnitude 7.9
- Near Coast of Peru, June 23rd, 2001, magnitude 8.4

Once you have determined the specific earthquake that you want to study you can use other databases (google, etc.) to research information that you could not find on the USGS website.

Discussion Questions/Topics

About the Earthquake:

1. Date of the Quake and time it occurred (local time at the epicenter):
2. Richter Scale Magnitude:
3. Did the earthquake cause any other disasters (tsunami's, land slides, fires, etc.):
4. Epicenter of the Quake (city, country):
5. Focus (depth) of the quake:
6. Print out a map that illustrates where the epicenter center was and the surrounding areas.

About the Economy: *If you find that the economy was not affected explain why this might be*

1. What was the estimated cost of damage caused by the earthquake?

4. What types of safety measures were put into place after the earthquake (retrofitting, etc)?

2. What type of transportation was affected (highways, trains, etc.)?

3. How did the earthquake affect businesses?

5. Based on your research what intensity value (Mercalli scale) would you assign to the earthquake?

About the People:

1. How many people were injured (*if you find that there were little injuries explain why this might be*)?

2. How many deaths (*if you find that there were little to no deaths explain why this might be*)?

3. What type of affect did the earthquake have on the people of this region (you might not find specific information on this but you can hypothesize on the effect the earthquake may have had based upon the culture of the population including; jobs, schools, industries, transportation, etc.)?

Make a Connection to Your Own Life

Review the time and day of week the earthquake occurred. What are you usually doing at that time/day? How might an earthquake affect you? What would you do to be safe?

Part II: Google Earth

Purpose: Choose a recent earthquake to investigate that interests you because of its location, maybe it is where your family is from, an area where you vacationed, somewhere you want to go, etc.

Do not choose the same earthquake you researched above

- Go to <http://earthquake.usgs.gov/eqcenter/catalogs/>
- Click on the link to see the "M 1+ earthquakes, past 7 days (colored by depth)"
- Click "open" in the dialog box. Google Earth should be what the program opens in.
- You can use the tool bar on the upper right hand side of the screen to rotate the Earth
- Double click the region of the Earth to zoom in (you can also use the + or - to zoom in or out of regions).

Observations

- Observe the Earth (rotate around), where do you see the highest density of earthquakes?
- Continue searching the Earth, choose an earthquake to examine.

Location of earthquake (city, state, country):

- Why did you choose this earthquake?
- What is the depth of the earthquake (use the depth key on the left side of the screen):
- What was the epicenter of the earthquake:
- Recorded Magnitude:
- Are there any other geological features around your earthquake (mountains, valleys, volcanoes, plate boundaries, deep sea trenches)? If so list what other features you see.

In the box to the left of your screen type "1 Mangini Way, Burlingame, Ca" in the "Fly" box this will take you to Burlingame High School. Watch as the earth rotates to bring you to your school.

- Zoom out until you see the location of a recent earthquake
- Select the measuring tool (blue ruler) at the top of the screen
- Measure the shortest distance from Burlingame High School to the nearest recent earthquake.

Distance in Kilometers: _____

Distance in Miles: _____