

Part I of this assignment (#1-8) is worth 15 points. Part II is worth 15 points as well. These may be completed together or separately.

**Part I**

1. go to <http://earthquake.usgs.gov/earthquakes/eqinthenews/2008/us2008qza6/#summary>

a. Round the richter magnitude of this earthquake and the one from [Dec. 26, 2004 mentioned here](#). Using your notes, relate the energy released in this earthquake relative to the 2004 quake. (your answer should be a number - explain how many times stronger or weaker this was)

b. What type of plate(s) were involved in this earthquake?

c. What type of fault caused this earthquake? (it's not one we've learned about specifically)

d. Look up this fault - read a couple of websites explaining it, and summarize what is thought to be going on here.

2. What happened as a result of the 2004 quake East of Japan? (if you're unsure, you should [go to youtube and search for Dec 26, 2004](#) - you need to see)

3. <http://comcat.cr.usgs.gov/earthquakes/eventpage/usc000f5t0#summary>

What appears to have caused this quake?

4. <http://ptwc.weather.gov/ptwc/?region=3&id=indian.TIBIOX.2012.01.10.1845> Read the message on this page generated by the Pacific Tsunami Warning Center. Was there a Tsunami generated by the Jan 10,2012 quake?

5. <http://ptwc.weather.gov/ptwc/history.php> Explain (summarize a few events) why the Pacific Tsunami Warning Center exists, and what areas it serves.

6. <http://ptwc.weather.gov/ptwc/staff.php> How would you like to work as a scientist in a job such as this? Do these folks look like what you picture as scientists?

7. This assignment is titled, "New Madrid Turns 200". This doesn't refer to the age of the city or

the fault zone. What does the 200 years refer to? (do a search about New Madrid)

8.(2008 earthquake in STL measured 5.2 on Richter scale)

a. Compare the earthquake strength that woke most of us up 3 years ago to the Jan 10, 2012 sumatran earthquake you felt. Feel free to round richter numbers to the nearest whole number.

b. The STLtoday article above mentions two tectonic plates moving apart. Is there a plate boundary near St. Louis / Memphis?

c. In the paragraph following the statement about two plates moving apart, the newspaper cites a local environmental scientist as saying, "The New Madrid Fault is a weak spot in the center of the country caused by the stretching millions of years ago of the earth's surface, the North American Plate, along the fault lines in California and on the mid-Atlantic ridge, Kusky said."

Research the new madrid seismic zone (NMSZ) and explain what type of tectonic activity is probably at fault :) for the earthquakes experienced here. (it's similar to what's happening to East Africa - see your book)

((HALF POINTS: PROBLEMS #1-8. LOOKING FOR A LARGER ASSIGNMENT AND MORE POINTS? - COMPLETE THE FOLLOWING))

### **Part II**

9. Research the 1811-1812 New Madrid Earthquakes. Wikipedia is an ok place to start - even better: <http://earthquake.usgs.gov/earthquakes/states/events/1811-1812.php>

a. There isn't a definitive answer for the Richter magnitude of the 1811-1812 quakes. Look up "Charles Richter" or "seismograph" and explain why. (pay attention to dates)

b. How do we have estimates of the Richter magnitude of the 1811-1812 quakes? (What scale is used to compare them to modern quakes? - infer from your reading in this unit)

c. What is the best estimate of the Richter magnitude of the strongest New Madrid earthquake, and when did it occur?

d. Round this magnitude off to the nearest integer (whole #) and relate its strength to the 2008

St. Louis quake.

e. Research Iben Browning's Dec. 3, 1990 prediction and what happened:  
geologically:

as a public response:

f. talk to your parents or Mr. Kasey (Rm. 314)) and record what they tell you about the public reaction at this time. (what happened at Fox?)

g. It is proposed that a magnitude 7 - 8 earthquake may again occur in the NMSZ, even though specific predictions such as Iben Browning's haven't ever panned out. Research indicates that if this were to occur, destruction in the Memphis area would be catastrophic, and regional damage would well include St. Louis, leaving hundreds of thousands of people in the region seeking shelter and supplies... more than could be provided by FEMA or surrounding communities in the first 72 hours. (YOU will be responsible for saving yourself.) Read about disaster preparedness and plan to discuss your family's preparedness with your parents. Summarize your findings for what your family should to to be prepared:

Some good resources:

<http://www.ready.gov/earthquakes>

<http://www.ready.gov/basic-disaster-supplies-kit>

If you already have a plan / kit, evaluate what you need to do to maintain it!

<http://www.ready.gov/maintaining-your-kit>

Water storage is an important key - you can even use old soda bottles to store water for free (I do) <http://www.ready.gov/water> - and it might be worth remembering other places you can find clean water:

Water Heater (most have a hose-spigot type drain at the bottom)

Toilet flush tank (the top part!) if you get desperate.

Write out what you find that you should do/modify for your emergency preparedness / communications when usual techniques don't work, and summarize what the results of your discussion with your parents is.