Investigation 1: Geohazards and Me: What geologic hazards exist near me? Which plate boundary is closest to me? Assessment

Read **all** instructions on your handout and answer **each** question in complete sentences where appropriate.

1. Fill out the following table with information about the recent earthquake nearest you.

The values in this table will vary based on your location.

Distance from epicenter to your location	
Location (latitude-longitude)	
Magnitude	
Focal depth of the earthquake	
Date of the earthquake	

2. Do you remember hearing about any recent earthquakes that occurred near you?

Did you feel it? What was the epicenter of that earthquake?

Responses to this answer will vary based on your geographic location.

3. Fill out the following table with information about the **historic earthquake M > 8.0** nearest you.

The values in this table will vary based on your location.

Distance from epicenter to your location	
Location (latitude-longitude)	
Magnitude	
Focal depth of the Earthquake	
Date of the earthquake	

4. Fill out the following table with information about the volcano nearest you.

The values in this table will vary based on your location.

Distance from volcano to your location	
Location (latitude-longitude)	
Type of volcano	
Date of last known eruption	
Elevation of the summit	

5. Which are nearer to you, earthquake or volcano hazards?

Responses to this answer will vary based on geographic location. In most US locations, earthquake hazards will be closest to one's geographic location.

6. What is the distance to the nearest plate boundary from your location?

Responses to this answer will vary based on geographic location.

7. What kind of geologic hazards are there on this plate boundary?

Responses to this answer will vary based on geographic location.

8. What pattern exists between earthquake locations and plate boundaries?

Earthquakes occur on plate boundaries.

9. What pattern exists between volcano locations and plate boundaries?

Volcanoes occur near plate boundaries.

10. What is the seismic hazard risk in Los Angeles, CA?

The seismic hazard risk in Los Angeles, CA is high and ranges between 5 and 10.

11. What is the seismic hazard risk in Washington, D.C.?

The seismic hazard risk in Washington, DC is low - 1.

12. Which is more hazardous: Los Angeles, CA or Washington, D.C.? Support your claim with evidence from the GIS.

The seismic hazard is much greater in Los Angeles, CA because it is located on a plate boundary. Washington, D.C. is located much further (more than 2,000 km) from a plate boundary.

13. List 3 countries outside of the United States that have high seismic hazards. (Helpful hint: In Map Layers, select the Base Map: **Aerial with Labels** to view country names).

Countries that contain high seismic hazards (red color) on the seismic map include: Mexico, Columbia, Ecuador, Peru, Chili, Canada, Japan, Taiwan, China, Myanmar, Papua New Guinea, Turkey, Kazakhstan, Tajikistan, and Afghanistan.

14. How are geologic hazards related to plate tectonics?

Geologic hazards are greatest along plate boundaries. Earthquakes occur when energy is released as two plates pass one another. Conditions along some plate boundaries allow for warm material from the mantle to melt rock in the crust and form volcanoes.