

Name: \_\_\_\_\_

### Volcano and Earthquake Simulation Lab

#### Instructions for Glencoe Virtual Lab:

1. Go to [http://www.glencoe.com/sites/common\\_assets/science/virtual\\_labs/E27/E27.html](http://www.glencoe.com/sites/common_assets/science/virtual_labs/E27/E27.html)
  - a. Note, the spaces are actually underscores \_
2. Read and follow the introduction on the left side of the screen.
3. Answer the questions and fill in the tables below as you go.

#### Answer ALL Questions in Complete Sentences:

1. Why do you think earthquakes and volcanoes are rarer at locations away from plate boundaries?
2. Fill in the table below about the earthquakes:

Location	Epicenter	Date	Magnitude	Deaths

3. Which earthquake caused the most deaths?
4. Name 3 or 4 plates that seem to have the most earthquakes.
5. What type of wave is a primary wave, Longitudinal or Transverse?
6. What type of wave is a secondary wave, Longitudinal or Transverse?
7. Which type of wave causes the most damage to buildings?
8. Fill in the table below about the volcanoes:

Name/Country	Location	Shortened Comments

9. What is caused by the high water content in magma?
  
10. What determines the type of volcanic eruption?
  
11. **Compare the earthquake and volcano locations on the two maps and answer the following questions.**
  - a. Name three plates where the earthquakes and volcanos tend to be clustered.
  
  - b. Explain why you think the earthquakes and volcanos happen in the same areas.
  
  - c. Why do earthquakes and volcanos tend to form at plate boundaries?
  
  - d. Describe the relationship between the locations of earthquake epicenters, volcanoes, and plate boundaries.
  
12. Why is it easier to predict where an earthquake will occur than it is to predict when it will occur?
  
13. The Richter scale describes how much energy an earthquake releases. With every increase of 1.0 on the scale, 32 times more energy is released. How many times more energy would be released by a quake measuring 2.0 on the scale?
  
14. Why do you think the area around the Pacific plate is called the Pacific Ring of Fire?

**Instructions AND Questions for Volcano Explorer Virtual Lab:**

1. Go to <http://news.discovery.com/games/volcano-explorer.htm>
2. On the left-hand menu, click on "global perspective" and define the vocab words that are on the lower-right.
  - A. Tectonic Plates \_\_\_\_\_
    - a. What can be found along plate boundaries? \_\_\_\_\_
  - B. Ring of Fire \_\_\_\_\_
    - a. Is the Ring of Fire on the East or West coast of the United States? \_\_\_\_\_
  - C. Mantle \_\_\_\_\_
    - a. How do volcanoes form? \_\_\_\_\_
3. On the left-hand menu, click on "volcano types." List and BRIEFLY describe the three volcano types. The volcano types are found on the lower-right again.

- a. \_\_\_\_\_
- b. \_\_\_\_\_
- c. \_\_\_\_\_

4. On the left-hand menu, click on "inside a volcano." Define buoyant **in your own words** (if you can't find it, Google it.)

\_\_\_\_\_

\_\_\_\_\_

a. How does buoyancy relate to volcanoes? \_\_\_\_\_

5. What ultimately causes a volcano to erupt?

\_\_\_\_\_

\_\_\_\_\_

6. Click on "Build your own volcano" and watch it erupt. Fill in the table below for 3 different eruptions.

Viscosity Level	Gas Level	Type of Volcano Made	Description of Eruption