

Volcano and Earthquake Webquest

Name _____ period _____ date _____

Go to each of the web sites indicated below. Answer the questions or complete the requested responses about each of those sites. Make your explanations to the answers as complete as possible.

IT ALL BEGINS WITH PLATE TECTONICS!!

<http://www.enchantedlearning.com/subjects/astronomy/activities/radiobuttonquiz/Tectonicspz.shtml>

Write down the answers to the 10 quiz questions in the spaces below.

- | | |
|----------|-----------|
| 1. _____ | 6. _____ |
| 2. _____ | 7. _____ |
| 3. _____ | 8. _____ |
| 4. _____ | 9. _____ |
| 5. _____ | 10. _____ |

A. What is an earthquake? <http://earthquake.usgs.gov/4kids/>

1. Click on "Become an earthquake scientist." Read this and then explain what research geophysicists study. _____

2. Go back a page by clicking on the back arrow button. Then click on "Today in Earthquake History." Write something that happened on today's date in history. Then pick at least one other date and write what happened on that day in history.

date _____ event _____

date _____ event _____

B. Plate tectonic animation <http://www.odsn.de/odsn/services/paleomap/animation.html>

Watch the plate tectonic animation. The large land mass that is at time zero is referred to as Pangaea. Watch it change through time.

3. What happened to Pangaea between the beginning of the simulation and present time?

4. Note the red lines. What do you suppose these represent? _____

C. Plates and boundaries <http://www.learner.org/interactives/dynamicearth/plate.html>

Summarize what happens at the three major types of plate boundaries and give an example of each.

5. Summary of divergent _____

Example of divergent _____

6. Summary of convergent _____

Example of convergent _____

7. Summary of transform _____

Example of transform _____

D. Richter magnitude <http://crack.seismo.unr.edu/ftp/pub/louie/class/100/magnitude.html>

8. The Richter Scale is one way to measure the magnitude of an earthquake. Describe the result of an earthquake with a magnitude under level 6 on the Richter Scale. _____

9. At what level can damage across several hundred kilometers occur? _____

E. The basic facts of seismology <http://www.data.scec.org/Module/module.html>

(note: you MUST capitalize the "M" in the first Module noted in address) Click on "Section 1: What is an earthquake?" Read through this. You will need to click on the arrow buttons on the bottom of the page to go to the next page. After you have clicked onto the 2nd page, answer these questions.

10. What are seismic waves? _____

11. What is meant by a sudden slip as related to earthquakes? _____

12. Click on the arrow at the bottom of the page so that you are now on "page 3". Explain why there are forces which cause the stress resulting in a sudden slip -- make sure to refer to tectonic plates in your answer. _____

13. Click on the footnote question, "Are any earthquakes caused by something other than tectonic forces? Summarize this page in 2 - 3 sentences. _____

14. <http://projects.eri.ucsb.edu/understanding/quiz/>

Write down the answers to the 4 Earthquake Quiz questions in the spaces below.

1. _____ 3. _____
2. _____ 4. _____

F. Savage Earth - PBS online <http://www.thirteen.org/savageearth/index.html>

15. Click on "The Restless Planet: Earthquakes". Scroll down to the three green boxes showing the surface wave, primary wave and secondary wave animations. Click on the start button of each of these and summarize the wave action for each.

surface wave _____

primary wave _____

secondary wave _____

16. Scroll back up to the top and click on "Out of the Inferno: Volcanoes." Read the first two paragraphs then answer in at least two sentences why volcanoes occur. _____

G. HOW DO VOLCANOES FORM? http://myweb.cwpost.liu.edu/vdivener/notes/subd_zone.gif

17. Near what type of plate boundary do volcanoes occur? _____

18. Based on the picture, what are the processes that result in the creation of a volcano? _____

19. Describe the location of subduction-generated volcanoes in relation to the trench, continental and oceanic plates. _____

H. VOLCANIC ERUPTIONS <http://news.bbc.co.uk/2/hi/science/nature/4972366.stm>

20. What causes an eruption? _____

21. Define the following terms, all of which may result from an eruption:

PYROCLASTIC FLOW _____

LAVA _____

BOMBS _____

ERUPTION _____

(ASH) CLOUD _____

LAVA _____

LAHAR _____

I. TYPES OF VOLCANOES <http://kids.discovery.com/games/build-play/volcano-explorer>

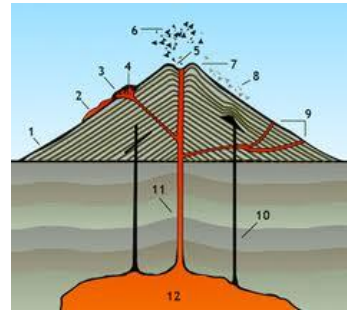
21. ENTER the website, then click "Volcano types" on the left to complete the chart

VOLCANO TYPE	DESCRIPTION	SIZE	EXAMPLES
Stratovolcano			
Cinder cone			
Shield			

22. Now click "Inside a volcano" to sketch the inside of a volcano in the box.

23. Label the following on your picture:

- magma chamber
- dike
- fissure
- central vent
- ash deposit layer
- hardened lava layer
- crater



24. Click on "Build your own volcano and watch it erupt." Underneath the words "gas and viscosity settings" there is a link labeled "viscosity info." Click on it.

25. What is viscosity? _____

26. Experiment and then answer the following questions:

1. What effect does viscosity of magma have on an eruption? _____
2. What effect does the amount of gas in magma have on an eruption? _____

J. A REAL VOLCANO: MT. ST. HELENS http://news.nationalgeographic.com/news/mount-st-helens-30th-anniversary-before-after-science-environment-pictures/#/mount-st-helens-before-after-johnston-ridge-after_20378_600x450.jpg

27. Sketch a before and after picture of Mt. St Helens. Label the crater.

BEFORE

AFTER

28. Based on the pictures you see on the website, is Mt. St. Helens:

- A stratovolcano, cinder cone, or shield volcano? WHY? _____
- Does it have very viscous lava, or easily flowing lava? WHY? _____

29. Look at the aerial photos of Mt. St. Helens:

- Assume the picture is oriented properly. In which direction did the majority of material in the eruption flow? Why do you think this? _____

K. What hazards are associated with volcanoes? <http://www.learner.org/exhibits/volcanoes/judgehaz.html>

30. Name five hazards associated with volcanoes ("other" does not count. Be more specific.)

1. _____
2. _____
3. _____
4. _____
5. _____

L. Can we predict volcanoes? <http://www.learner.org/exhibits/volcanoes/forecast.html>

31. Earthquakes as well as volcanoes are common along or near the edges of plate boundaries. Because there is movement along the boundaries, not only can tremors be felt as the plates jolt but also magma can escape from below the earth's surface. It is possible to monitor these and other activities along the plate boundaries. Based on the monitoring, name 3 warning signs of a possible volcanic eruption? _____

32. What are some problems that occur which interfere with accurate predictions? _____

DOCTOR FUN



More trouble at the dinner table for the Volcano Family

