EARTHQUAKES ON THE WEB

Your Name(s): Date:

Introduction

Earthquakes are among Earth's most spectacular natural phenomena. Understanding what causes earthquakes, how we can use earthquake waves to learn about Earth's interior, and other aspects of **seismology** (the study of earthquakes) are important parts of Earth Science. In this activity, you and your partner(s) have the opportunity to learn more about these (literally) Earth-shaking events. You will also expand your skill in using computers as a research and communication tools.

Procedure

1. Copy and save this page into your home folder (or memory stick.) Work from the copy. You may also want to try to make a backup of your work in your partner's folder.

Listed below are some questions about earthquakes. Find answers in web sites suggested below or other resources, then send your answers to me at mpassow@epsd.org. Be sure to include suitable credit by providing urls where you find information of copy images.

Because collaboration is so important in modern science, you should ask other students for help before asking the teacher.

Internet Sites to Get You Started

U.S. Geological Survey: www.usgs.gov.

http://earthquake.usgs.gov/

http://earthquake.usgs.gov/4kids/

http://walrus.wr.usgs.gov/tsunami/

http://neic.usgs.gov/neis/states/state_largest.html

Lamont-Doherty Cooperative Seismographic Network:

http://www.ldeo.columbia.edu/LCSN/

International Research Institutions for Seismology (IRIS) Consortium

http://www.iris.edu/about/ENO/

Of special interest: fault animations

Questions to be Answered

1. Define what is an earthquake (fault)?
2. What are the three major types of faults? [Provide images of each type.]
3. Describe the three types of seismic waves.
4. Explain the difference between "epicenter" and "hypocenter" ("focus")?
5. How do seismologists locate where earthquakes happen?
6. What do the Richter, Moment Magnitude, and Mercalli scales measure?
7. In what parts (zones) of the world do most earthquakes occur?
8. Where did earthquakes occur in the past day? Week? Month?

9. How likely is it that we will experience an earthquake here in New Jersey?
10. What was the most powerful earthquake ever recorded in New Jersey? New York City? Anywhere in the world? How powerful was the 26 Dec 2004 Sumatra event?

Activity 1

Go to http://nemo.sciencecourseware.org/VirtualEarthquake/VQuakeExecute.html

First, **read carefully through the information provided**.

Complete the activity to find the epicenter and Richter scale magnitude for one of the simulated quakes. When you finish, copy and paste your certificate here.

(You can complete more than one and receive extra credit. Attach the certificate for all you complete as proof.)

Activity 2

Go to http://walrus.wr.usgs.gov/tsunami/ and browse through various parts of this page. Then write a 3- 5 paragraph essay about what tsunamis are, their relationships to earthquakes, to 26 December 2004 tsunami, and one or two other ideas about this topic that you consider important.

Extra Credit

Go to http://earth2class.org/curr_units/index.php and then find the "Earthquakes, Volcanoes, and Plate Tectonics" section. Look through the "Selected Labs and Activities" and/or "Selected Websites." If you do any of the activities, submit your completed work to me. If you choose to view of the websites, write a one-page report describing what you learned.