

Plate Tectonics Virtual Lab

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Earthquake Table/graph:

	Earthquake 1	Earthquake 2	Earthquake 3	Earthquake 4	Earthquake 5	Earthquake 6
Name / Location	Tajikistan Border	Luzon, Philippines	Gansu, Chain	Papua New Guinea	Tangshan, Chain	San Francisco, USA
Epicenter Latitude	37.1° N	15.7° N	35.8° N	2.9° S	39.6° N	37.45° N
Epicenter Longitude	70.1° E	121.2° E	105.7° E	141.8° E	118° E	122.26° W
Nearest Lithospheric Plates	On Indo-Australia Plate ; Beside Eurasian Plate	On Eurasian Plate ; Beside Philippine Plate	On Eurasian Plate ; Beside Indo-Australia Plate	On Indo-Australia Plate ; Beside Pacific Plate	On Eurasian Plate	On Pacific Plate ; Beside North American Plate
Date	1998/2/4	1990/7/16	1920/12/16	1998/7/17	1976/7/28	1906/4/18
Magnitude	6.2	7.8	8.5	7.1	8.0	8.3
Population of Death	2300	1600	180000	1500	250000-695000	700

Volcano Table/graph:

	Volcano 1	Volcano 2	Volcano 3	Volcano 4	Volcano 5	Volcano 6
Name / Location	Stromboli, Italy	Mt. Pinatubo, Philippines	Bezymianny, Kamchatka	Fwenandina, Galapagos Islands	Popocatepetl, Mexico	Yellowstone, USA
Epicenter Latitude	38.8° N	151.3° N	55.98° N	0.4° S	19° N	44.43° N
Epicenter Longitude	15.2° E	120.35° E	160.58° E	92° W	98.6° W	110.67° W
Nearest Lithospheric Plates	On African Plate ; Beside Eurasian Plate	On Eurasian Plate	On Eurasian Plate ; Beside Pacific Plate	On Nazca Plate	On North American Plate ; Beside Nazca Plate	On North American Plate ; Beside Pacific Plate
Other Information	One of the most active volcanoes on Earth	Serious eruption in 1991/6/15; 750 people died	In 1997/12/5, produced an ash cloud	In 1995/1/25, eruption was responsible for killing many water animals	Popocatepetl means "Smoking Mountain"	Caused by earthquake in 1998/1/9

Journal Questions:

Question 1:

Is there a relationship between the locations of earthquake epicenters, volcanoes, and plate boundaries? If so, describe the relationship.

Earthquakes occur along fault lines, which are all the types of plate boundaries.

Volcanoes are located along converging plate boundaries and diverging plate boundaries.

Question 2:

According to the theory of continental drift, all of the world's continents were once connected as one large landmass and have, over the course of hundreds of millions of years, drifted apart into the positions they occupy today. Do the results of this activity support the theory of continental drift? If so, how? Explain your answer.

Yes. The reason that earthquakes and volcanoes occur is the plate moving. The magma rises and pushes the both-side crust. That causes continents moving and volcanoes and earthquakes happen.

Question 3:

Why is it easier to predict where an earthquake epicenter will occur than it is to predict when it will occur? Explain

Now people know earthquakes happen along the plate boundaries, so they can predict where it is going to happening. However, they cannot know when it happens. People cannot predict when the plates are going to move.

Question 4:

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 more units on the Richter scale?

64 time more

Question 5:

Why do you think the area around the Pacific Plate is called the Pacific Ring of Fire?

There is the area that volcanoes and earthquakes happen usually.

Question 6:

The Hawaiian Islands have formed as the Pacific Plate moves northwestward over a hot spot of Earth's interior that provides magma to form several volcanoes. Explain What could happen if the Pacific Plate continues to move.

Those formed islands are going to keep moving northwesrward and the magma from the hotspot will rise, cool, and form a new island.

Question 7:

How can volcano eruptions be predicted?

Before an eruption, magma will rise toward the surface and break the rocks. That causes the hotter surface and an earthquake. For these two reasons, people can predict volcano eruptions.