11. Volcanoes II

Cool websites:

For weekly volcanic activity reports from the Global Volcanism Program, visit: http://www.volcano.si.edu/reports/usgs/index.cfm (Smithsonian Institution).

See http://vulcan.wr.usgs.gov/ for more information about the Cascades Volcano Observatory.

**Western U.S. Volcanoes**

The western United States is dotted with potentially active volcanoes or volcanic areas.

How many? ______________

Even the Craters of the Moon area in southern Idaho has the potential to spring to life again.

How long ago was the last lava eruption at Craters of the Moon? ______________

Craters of the Moon exists because of the passage of the __________________________

hotspot below southern Idaho due to the motion of the North American plate.

Yellowstone represents a giant _______________. It could potentially erupt explosively at some time in the future, producing an event of global catastrophic proportions.

Yellowstone last produced lava eruptions _______________ years ago.

**Cascades Range Volcanoes**

Numerous volcanoes along the coast of northern California, Oregon, Washington, and southern British Columbia define the __________________ mountain range.

Most of these are active or dormant. Mount St. Helens’ eruption in 1980 is the only recent eruption but all of the volcanoes have the potential to do major damage.

Which volcano erupted to form Crater Lake? __________________________

How long ago did this eruption (the largest in history along the Cascades) occur?

__________________________ years ago

What major metropolitan areas are at risk for volcanic eruptions?

1. ____________________  (city in OR) - ____________________________ (volcano)

This volcano erupted in 1866 and in the 1790s.

2. ____________________  (city in WA) - ____________________________ (volcano)

This volcano last erupted in 1825 and produced as many as 60 _______________ in the past 10,000 years.
The most active volcano in the Cascades is ______________________ followed by _______________________. In the last 4,000 years, all but two (Mt. Jefferson and Crater Lake) of the Cascades volcanoes have erupted at least once.

How many times has Mt. St. Helens erupted in the past 4,000 years? ______________

Before Mt. St. Helens erupted in 1980, the most recent eruption was: ______________ in California, which erupted from 1914-1917. It still has active thermal springs and boiling mud pools (such features are called __________________) and is the world's largest lava dome.

What volcano erupted 27,000 years ago, forming a caldera that now contains the lava dome we call Lassen Peak? ________________________

**Mt. St. Helens: 1980 Eruption**

Geologists of the United States Geological Survey have known about the dangers posed by Mt. St. Helens for a long time. In fact, in 1978, just 2 years before it erupted, these geologists warned:

Mt. St. Helens is "an especially dangerous volcano because of its past behavior and its relatively high frequency of eruptions during the last 4,500 years."

What were the first signs of activity on Mt. St. Helens that began on March 27, 1980?

_______________________________________________

This activity continued through April and early May. How did the shape of the mountain change during this time, and why?

_________________________________________________

The actual eruption of the volcano on May 18th 1980 was triggered by an ________________ (caused by the movement of magma), which set off a huge ____________________ that ripped away the side of the mountain, exposing the magma chamber within.

This was the largest landslide in recorded history, causing an explosive release of all the gases trapped beneath the bulge. Mount St. Helens then erupted; first sideways as a ____________________, then upwards to form a 19 km high ________________.

The lateral blast reached speeds of 670 mph and destroyed 600 km$^2$ of forest, leveling the trees like matchsticks. Huge mudflows, or lahars, were produced by the melting of snow and glacial ice on the mountain. Tens of thousands of animals were killed, along with 63 people caught in the blast zone.

The ash that erupted from the volcano moved eastwards under the prevailing wind system and covered central and E. Washington, N. Idaho and W. Montana in ash.

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