

# Volcanoes assignment



When a tectonic plate sinks, it sinks down into the mantle and becomes very hot. So hot, in fact, that the rock melts. This molten rock will gradually make its way up to the surface of the earth through a series of cracks. When it reaches the surface of the earth, we refer to it as lava. As layer upon layer of lava builds up, a volcano is formed. What affects the forming of volcanoes? There are many factors that determine what kind of lava flow will occur and what type of volcano it will be.

The amount of gas trapped in the lava, the kinds of minerals making up the lava, and how much pressure can be trapped in the area all affect the eruption and formation of the volcano. Where are volcanoes mostly found? There are more than 500 active volcanoes (those that have erupted at least once within recorded history) in the world—50 of them are in the United States (Hawaii, Alaska, Washington, Oregon, and many more are hidden under the seas). Most active volcanoes are strung like beads along, or near, the margins of the continents, and more than half encircle the

Pacific Ocean as a “Ring of Fire.” Many volcanoes are in and around the Mediterranean Sea. Mount Etna in Sicily is the largest and highest of these mountains. Italy’s Vesuvius is the only active volcano on the European mainland. Near the island of Vulcano, the volcano Stromboli has been in a state of nearly continuous, mild eruption since early Roman times. At night, sailors in the Mediterranean can see the glow from the fiery molten material that is hurled into the air. Very appropriately, Stromboli has been called “the lighthouse of the Mediterranean.”

Some volcanoes crown island areas lying near the continents, and others form chains of islands in the deep ocean basins. Volcanoes tend to cluster along narrow mountainous belts where folding and fracturing of the rocks provide channels to the surface for the escape of magma. Significantly, major earthquakes also occur along these belts, indicating that volcanism and seismic activity are often closely related, responding to the same dynamic Earth forces. Types volcanoes Dormant- A dormant volcano is an active volcano that is not erupting, but is expected to erupt again.

Active- A volcano that has had at least one eruption during the past 10,000 years. An active volcano might be erupting or dormant. Extinct, A volcano that has not had an eruption for at least 10,000 years and is not expected to erupt again in a comparable time scale of the future. Causes of a volcanic eruption: An eruption occurs when pressure in the magma chamber forces magma up the main vent, towards the crater at the top of the volcano. Some magma will also be forced out of the secondary vent at the side of the volcano. Effects of volcanic eruptions: Explosive volcanic eruptions pose both short-term and long-term hazards.

Lava flows and Lahars can wipe out the flanks of mountainsides. Volcanic ash can blanket the landscape for miles, and ash clouds can disrupt aircraft travel, such as the incident in 1989 when ash from Alaskan Redoubt volcano temporarily disabled a passenger airplane. On longer time scales, eruptions can inject massive quantities of ash into the atmosphere, greatly reducing the solar heating of the Earth and potentially interrupting the global food supply for several years. In 1991, Mount Pinatubo in the Philippines

erupted, and strong winds spread the aerosol particles from the plume around the globe.

The result was a measurable cooling of the Earth's surface for a period of almost two years. The role of natural hazards research and developing applications to mitigate the effects of disasters has global implications for reducing loss and saving lives. Positive effects: -The lava and ash deposited during an eruption breaks down to provide valuable nutrients for the soil. This creates very fertile soil which is good for agriculture -The high level of heat and activity inside the Earth, close to a volcano, can provide opportunities for generating geothermal energy. The dramatic scenery created by volcanic eruptions attracts tourists. This brings income to an area. Case study: Montserrat is a small Island in the Caribbean. There is a volcanic area located in the south of the island on Sufferer Hills called Chances Peak. Before 1995 it had been dormant for over 300 years. In 1995 the volcano began to give off warning signs of an eruption (small earthquakes and eruptions of dust and SSH). Once Chances Peak had woken up it then remained active for five years. The most intense eruptions occurred in 1997.

During this time, Montserrat was devastated by parasitic flows. The small population of the island (11,000 people) was evacuated in 1995 to the north of Montserrat as well as to neighboring islands and the UK. Despite the evacuations, 19 people were killed by the eruptions as a small group of people chose to stay behind to watch over their crops. Volcanic eruptions and lava have destroyed large areas of Montserrat. The capital, Plymouth,

has been covered in layers of ash and mud. Many homes and buildings have been destroyed, including the only hospital, the airport and many roads.

Short-term responses and results ; Evacuation. ; Abandonment Of the capital city. ; The British government gave money for compensation and redevelopment. ; Unemployment rose due to the collapse of the tourist industry. Long-term responses and results ; An exclusion zone was set up in the volcanic region. ; A volcanic observatory was built to monitor the volcano. ; New roads and a new airport were built. Services in the north of the island were expanded. ; The presence of the volcano resulted in a growth in tourism.

After researching on earthquake/volcano, consider the causes and consequences (positive and negative) of the case study, and do a write up of 300 words about your thoughts regarding the issue. After researching on volcanoes, I have found out that a volcano are created by many layers of lava, which come up to the earth's surface when the earth's tectonic plates collide and one sinks under the other and melts. After considering the negative and costive consequences, I think that a volcano has more negative effects in comparison to the positive effects of having a volcano.

A volcano has more positive effects than negative. This can be seen from the long term positive effects that a volcano has, such as increase in tourism due to a volcano. As a volcano is a famous tourist attraction, it attracts tourists, which generates revenue for the country, thus improving the economy. This shows that having a volcano has positive long-term effects. Another such

positive consequence of having a volcano is that The lava and SSH deposited during an eruption breaks down to provide valuable nutrients for the soil.

This creates very fertile soil which is good for agriculture, and thus makes the land suitable for farming, which will improve economy by generating revenue as well. However, having a volcano also has many negative effects. One such example is that many lives are lost when volcanic eruptions occur. Buildings are also destroyed during volcanic eruptions. This shows that volcanoes have more of a negative effect than a positive effect. Another negative effect is that if the ash and mud from a volcanic eruption ix with rain water or melting snow, fast moving mudflows are created.