

Types of Eruptions

Chapter 3

Stratovolcanoes eruptions that blast out of a volcano sending ash into the stratosphere are quite different from the outpouring of lava from a fissure on the side of a shield volcano. Geologists classify volcanic eruptions based on their eruptive behavior.

In this chapter you will learn about six common types of eruptions occurring in a variety of volcanoes. Some volcanoes will exhibit only one type of eruption while other volcanoes erupt in a variety of ways.



Stromboli
Volcano erupting
fragments of
molten lava.
USGS

Strombolian eruptions

Strombolian eruptions are moderately explosive and characterized by intermittent eruptions of basalt lava from a crater at the summit of the volcano. Incandescent molten rock shooting high into the air produces high, arching rooster tails that can be seen above the top of the volcano during an eruption. Other times lava shooting into the air looks like Roman candles on the Fourth of July. The eruptions eject lava bombs and lapilli into the air. Lava bombs form when tephra takes on a rounded shape while it is airborne.

The pyroclastic rocks collect on the flanks of the volcano and form fiery rivulets as they cascade down the flanks of the volcano.

FS Volcanoes

This type of eruptions are named for Stromboli, a volcano off the coast of Sicily.

Stromboli is known as the Lighthouse of the Mediterranean. It has been erupting for the past 2500 years. Mild eruptions of lava bursts into the air every 15 to 30 minutes. Night voyagers can see the incandescent rocks glowing in the dark from their ships.



Tavurvur
Volcano, Papua
New Guinea.
J.W. Ewert USGS

Vulcanian eruptions

Vulcanian eruptions are moderate to strong explosions from a central vent. The magma is thick and pasty. The main types of lavas associated with this type of eruption are andesite and dacite. The lava forms igneous rocks that contain 54% to 69% quartz.

The eruptions typically produce large volumes of ash that form mushroom shaped clouds alternating with eruptions of pyroclastic rocks. The pyroclastic material is predominantly lava bombs, bread crust bombs and blocks.

Viscous lava bombs form a thin rind of cooled lava on the outside of molten rock while airborne. Upon landing, gases inside the lava bomb continue to expand cracking the thin outer crust. The exterior of these lava bombs resembles the crust of a loaf of bread when they cool. Blocks are angular chunks of solid rock ejected during an eruption.

The term volcano comes from Vulcano, a volcanic island north of Sicily. Romans believed Vulcan, a Roman god, had his forge beneath the island. Vulcanian eruptions are named for the same island.

Circle Eruptions

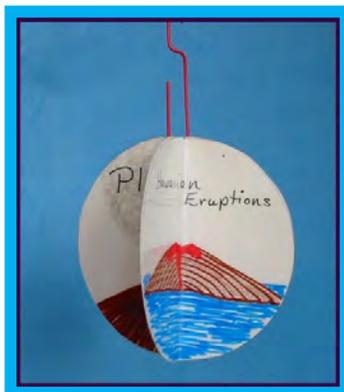
Activity 3

Introduction

Volcanologists have names for several different types of volcanic eruptions. The type of eruption that occurs usually depends on how much gas is contained in the lava, the type of lava produced, and whether pyroclastic flows occur during the eruption. In this activity, you will be drawing pictures of four major types of eruptions.

Materials

- White drawing paper
- Felt pens
- Paper clip



Circle mobile

Directions

1. Cut out four circles with the same diameter. The size does not have to be exact, but all four circles should be the same size.
2. Design a picture on each circle describing a different type of eruption. Pictures and names are shown on the next page.
3. Fold the circles in half.
4. Glue half the circle of picture A to picture B.
5. Glue half the circle of picture C to the other side of picture B.

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