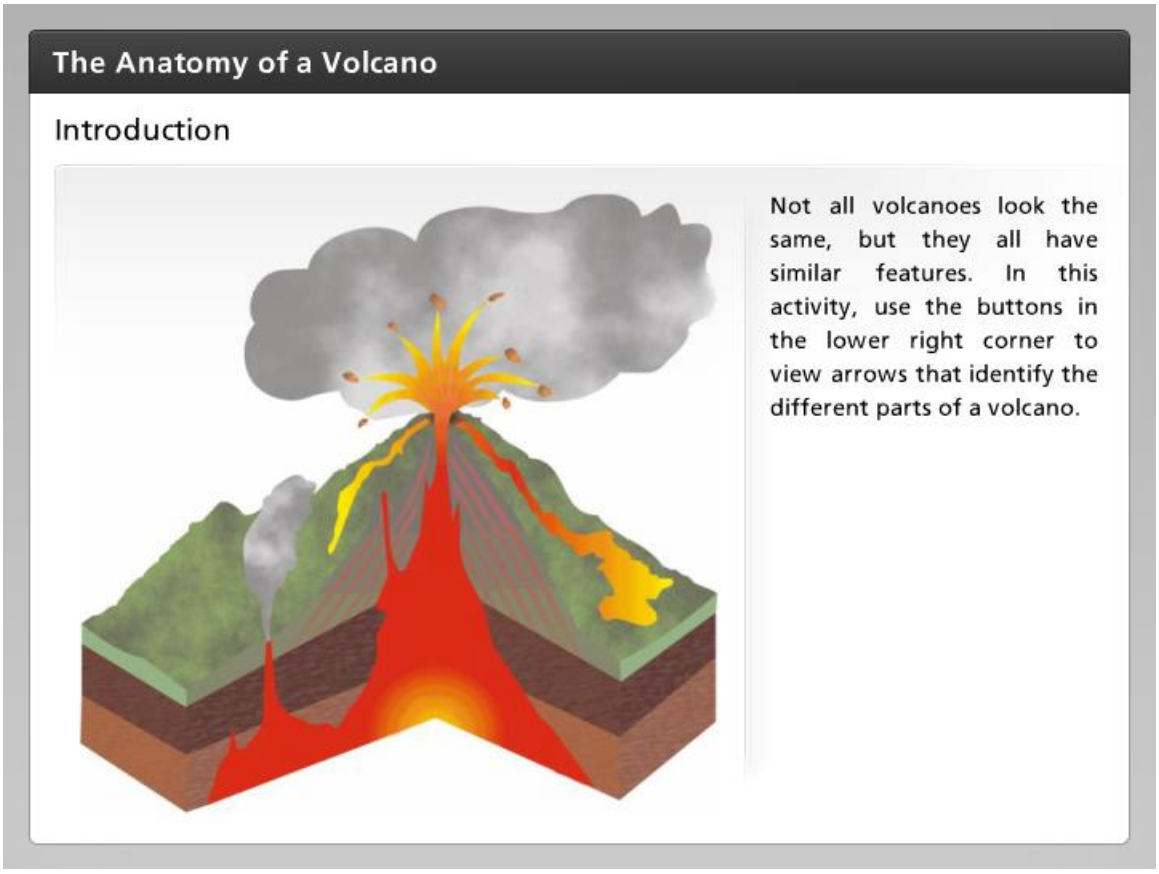
Module 7: Plate Tectonics and Earth's Structure
Topic 3 Content: The Anatomy of a Volcano Notes

Introduction



Not all volcanoes look the same, but they all have similar features. In this activity, use the buttons in the lower right corner to view arrows that identify the different parts of a volcano.

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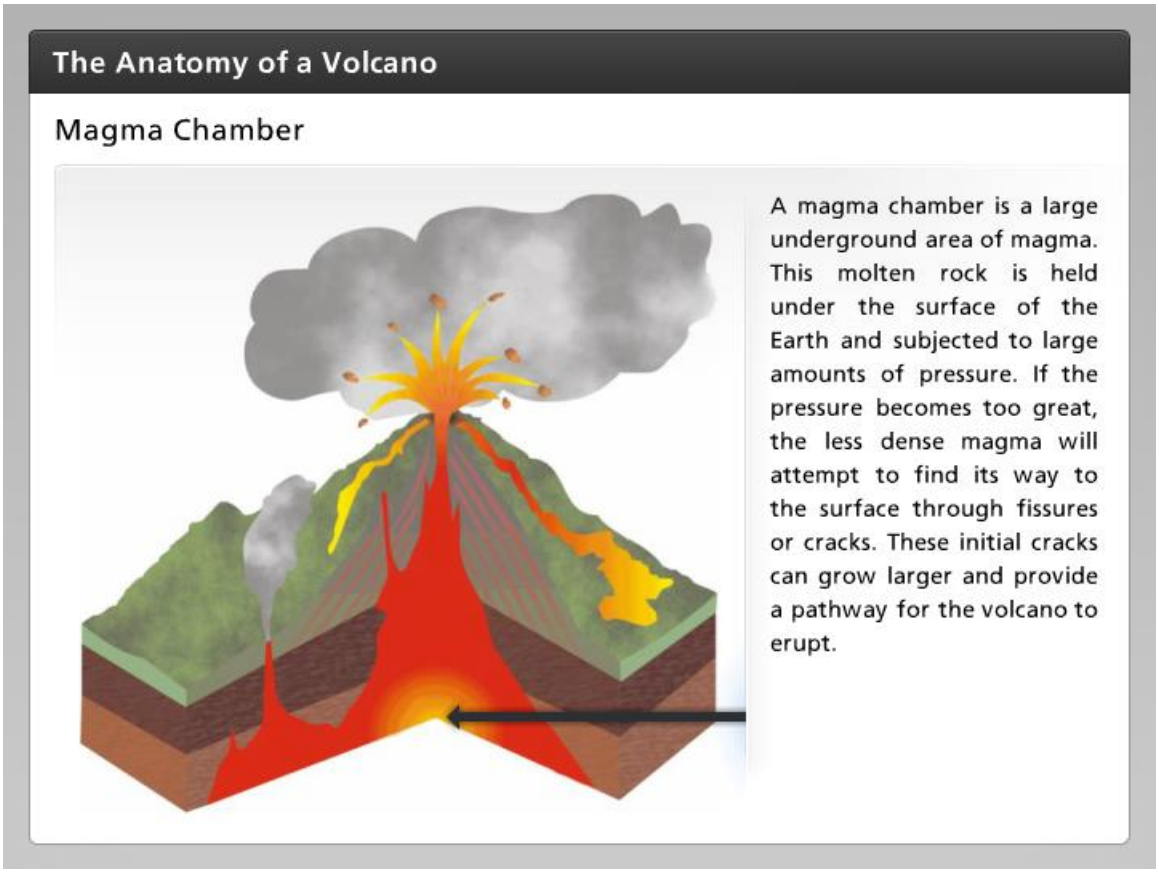
Magma Chamber



A magma chamber is a large underground area of magma. This molten rock is held under the surface of the Earth and subjected to large amounts of pressure. If the pressure becomes too great, the less dense magma will attempt to find its way to the surface through fissures or cracks. These initial cracks can grow larger and provide a pathway for the volcano to erupt.

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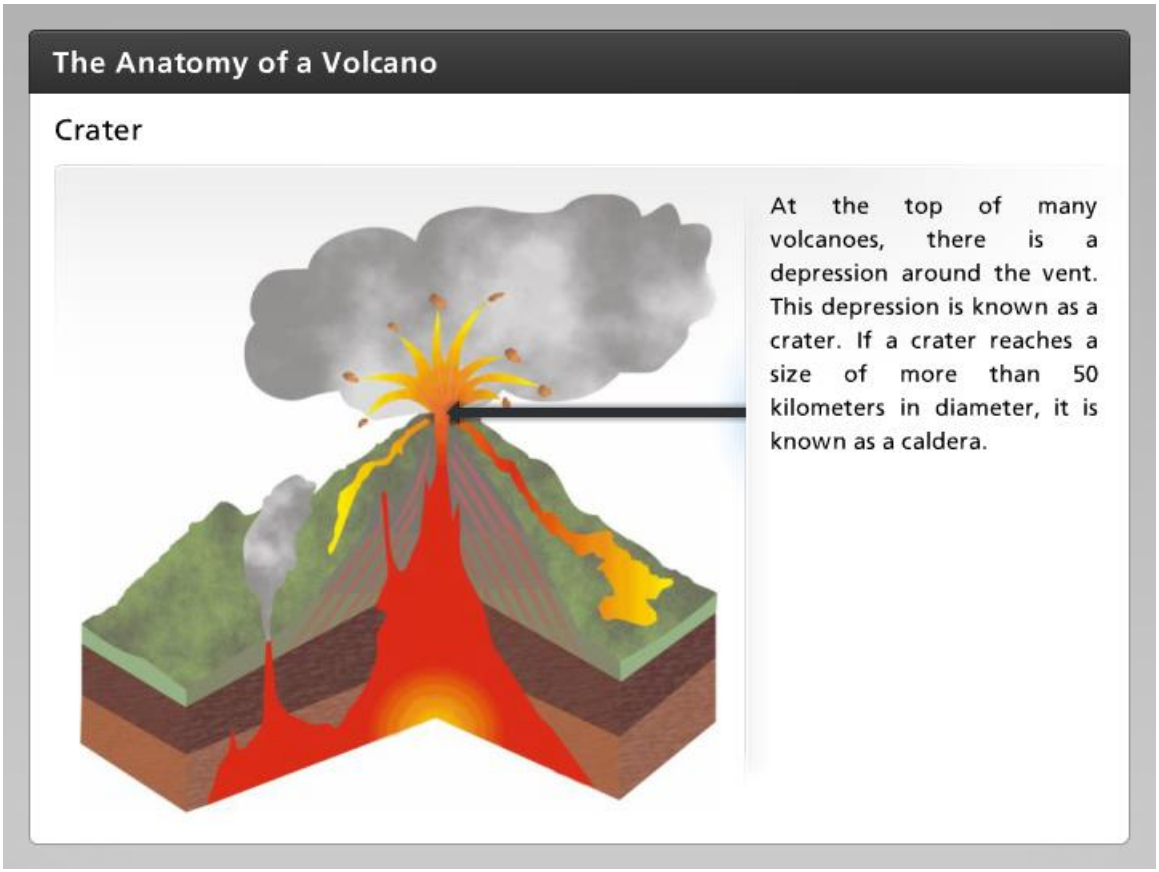
Crater



At the top of many volcanoes, there is a depression around the vent. This depression is known as a crater. If a crater reaches a size of more than 50 kilometers in diameter, it is known as a caldera.

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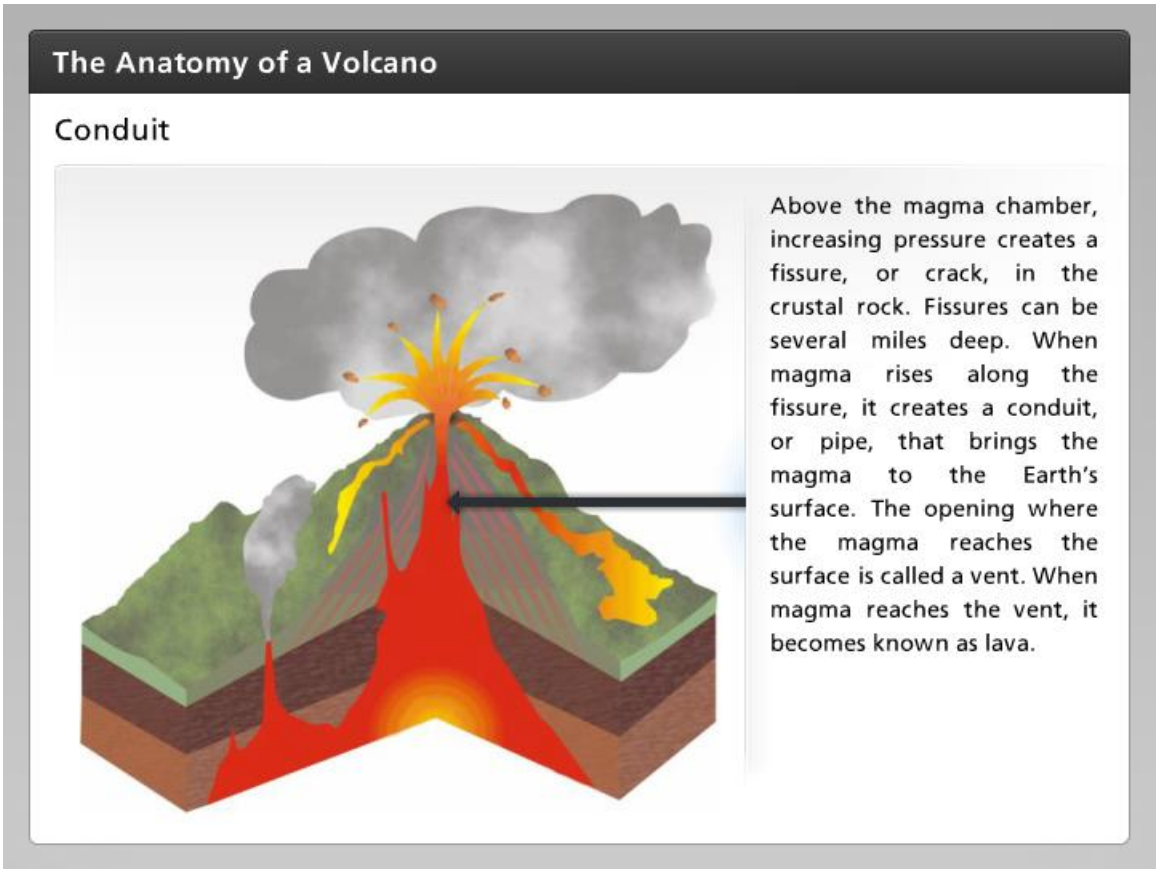
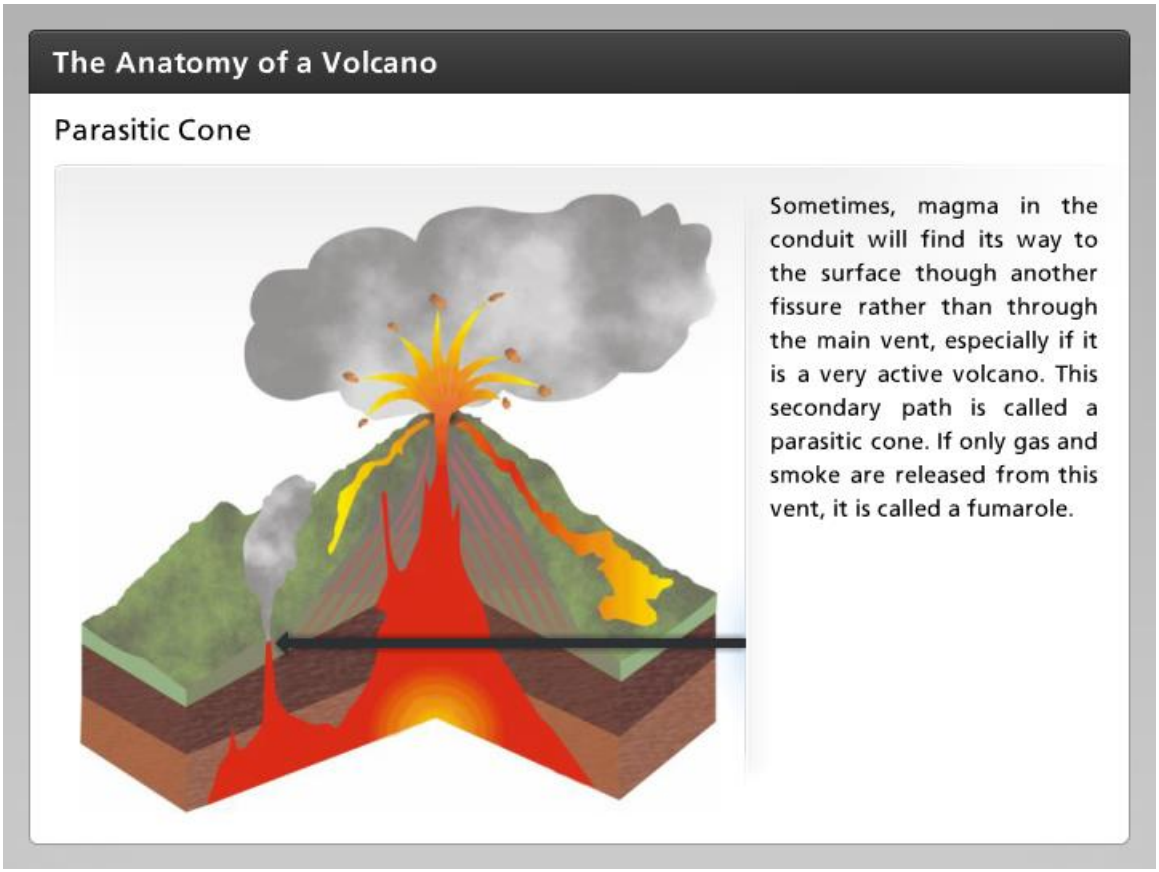
Conduit



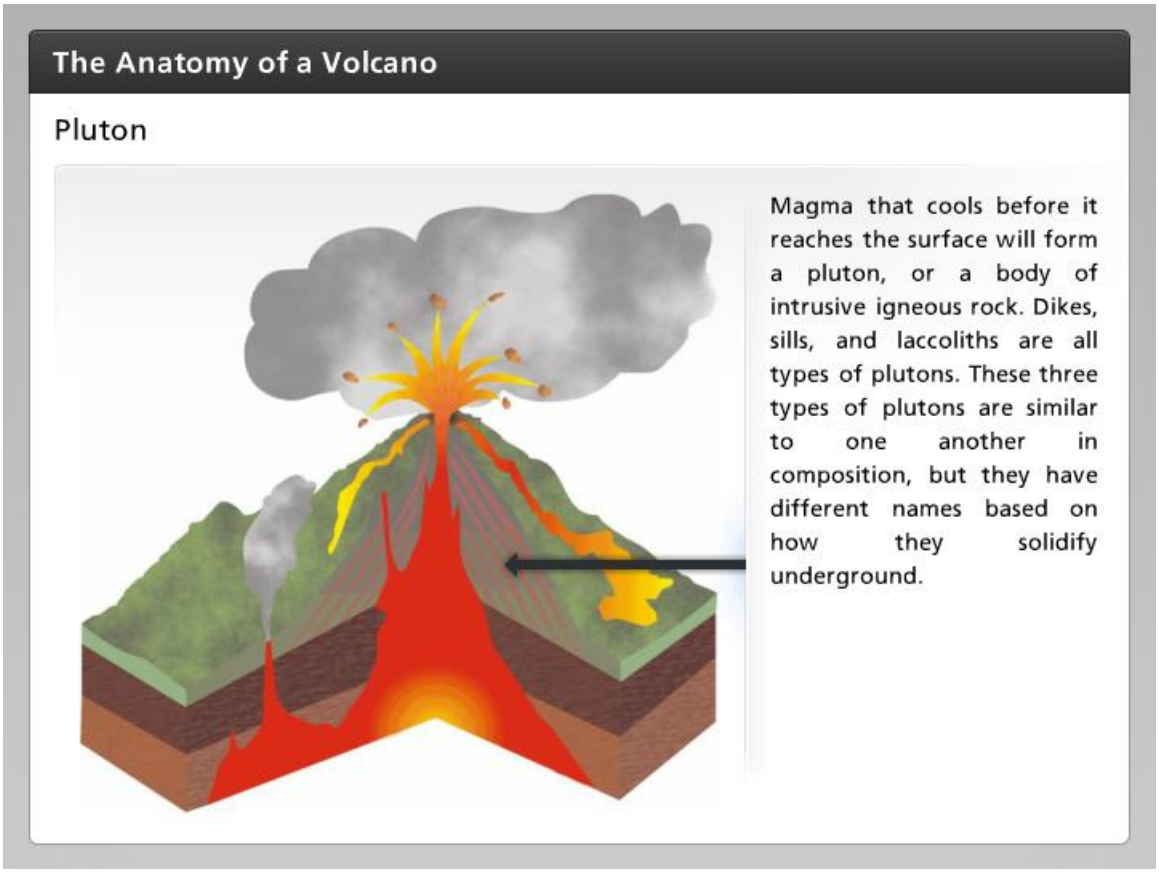
Above the magma chamber, increasing pressure creates a fissure, or crack, in the crustal rock. Fissures can be several miles deep. When magma rises along the fissure, it creates a conduit, or pipe, that brings the magma to the Earth's surface. The opening where the magma reaches the surface is called a vent. When magma reaches the vent, it becomes known as lava.

Parasitic Cone



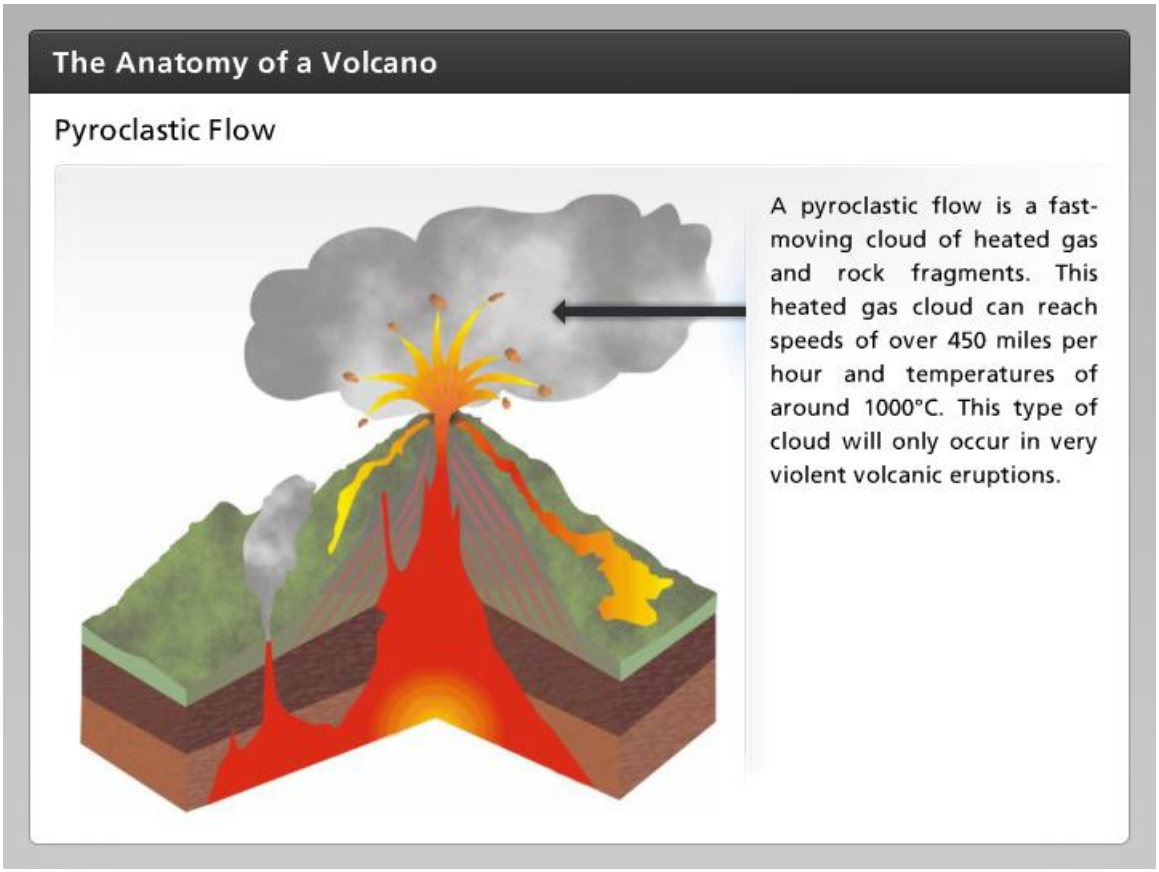
Sometimes, magma in the conduit will find its way to the surface though another fissure rather than through the main vent, especially if it is a very active volcano. This secondary path is called a parasitic cone. If only gas and smoke are released from this vent, it is called a fumarole.

Pluton



Magma that cools before it reaches the surface will form a pluton, or a body of intrusive igneous rock. Dikes, sills, and laccoliths are all types of plutons. These three types of plutons are similar to one another in composition, but they have different names based on how they solidify underground.

Pyroclastic Flow



A pyroclastic flow is a fast-moving cloud of heated gas and rock fragments. This heated gas cloud can reach speeds of over 450 miles per hour and temperatures of around 1000°C. This type of cloud will only occur in very violent volcanic eruptions.