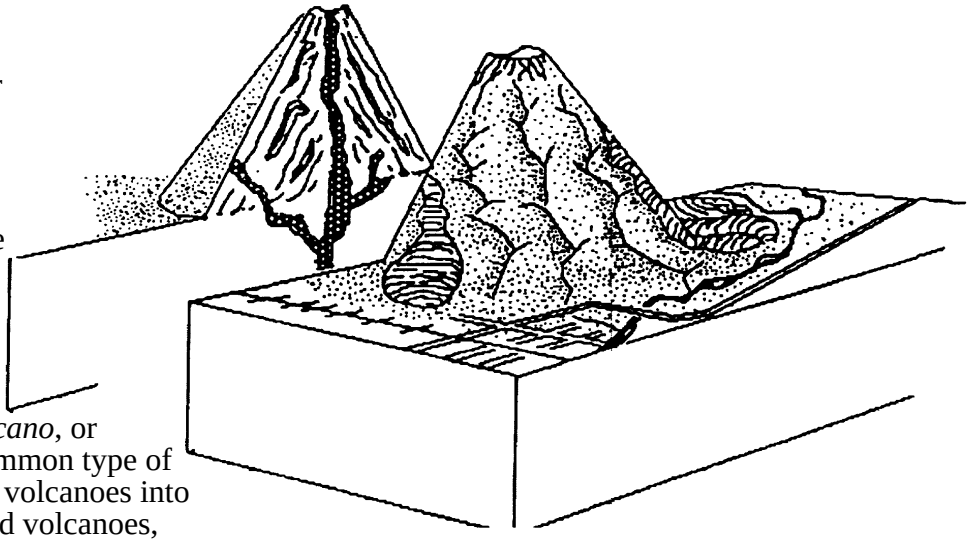
MAKE YOUR OWN PAPER MODEL OF A Volcano

This activity is intended to help students and other to visualize a stratovolcano (inside and out) and to learn some of the terms used by geologists in describing it. By constructing and examining the model, students will obtain a greater appreciation of the relationship between the internal structure of the volcano and its exterior shape and features. This exercise may give the student and insight as to how a stratovolcano is formed.



Guide

The model represents a *stratovolcano*, or *composite volcano*. It is the most common type of volcano on Earth. Scientists classify volcanoes into three main types: cinder cones, shield volcanoes, and stratovolcanoes.

Cinder Cone

Cinder cones are the smallest and are formed largely by the piling up of *ash, cinders* and *rocks*, all of which are called *pyroclastic* ("fire-broken") material, that have been explosively erupted from the *vent* of the volcano. As the material falls back to the ground, it generally piles up to form symmetrical, steep-sided cone around the vent. Sunset Crater in Arizona and Paricutin in Mexico are well-known examples of cinder cones.

Shield Volcano

Shield volcanoes are generally not explosive and are built by the accumulation of very fluid *lava* flows that spread out to produce a mountain with broad, gentle slopes. Shield volcanoes are the largest of all volcanoes, up to tens of kilometers across and thousands of meters high. Kilauea and Mauna Loa Volcanoes in Hawaii are classic examples of active shield volcanoes.

Stratovolcano

A *stratovolcano* is built of lava flows interlayered with pyroclastic material; scientists believe that the layering represents a history of alternating explosive and quiet eruptions. Young stratovolcanoes are typically steep sided and symmetrically cone shaped. There are several active stratovolcanoes in North America. Since 1980 Mount Saint Helens in Washington has become the most familiar. Other well known stratovolcanoes in the United States include Mount Rainier, Mount Shasta, M. Mazama (Crater Lake), and Redoubt Volcano in Alaska. Mount Fuji in Japan and Mount Vesuvius in Italy are other famous stratovolcanoes.

Questions for Further Study

1. Name some other stratovolcanoes and their locations around the world.
2. On the paper model, a small town has been built at the foot of the volcano. This is a common situation around the world. What are some of the problems or hazards the townspeople might have to face living so close to a volcano? Discuss possible solutions to these problems with your class.
3. What types of rocks are associated with each of the three types of volcanoes discussed above?
4. What is another word for the "hole", or vent, in the top of the volcano?
5. Where is the main vent of the paper model volcano? Can you find a second vent drawn on the side of the model volcano?
6. Why are most volcanoes on Earth cone-shaped?

Vocabulary

ash	vent	cinder cone	stratovolcano	composite volcano	pyroclastic
lava	cinders	eruption	shield volcano	volcanic hazards	crater

Adapted from USGS Open File Report 91-115A by Tao Rho Alpha and Leslie C. Gordon

Volcano Pattern

Constructing Your Paper Volcano

If you want to color the model, do so before you cut it out. Cut out the paper volcano model by cutting it along all its outside edges. Fold the pattern as shown in the diagrams above, so the printed side faces outward. Try the pieces for fit before applying glue or tape. Your completed model should look like the drawing on the back. For added stability, paste the pattern onto heavier paper, or construct around an **empty** 250 count box of kitchen matches (It fits perfectly!)

This formation represents the earth under your feet. ↓↓↓

Volcano