

What are volcanoes?



KEY TERMS

volcano: vent and the pile of volcanic material around the vent

vent: opening from which lava flows

crater: funnel-shaped pit at the top of a volcanic cone

LESSON | What are volcanoes?

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On May 18, 1980, Mount St. Helens in Washington state blew its top. The eruption sent ash high into the air. The blast caused great damage all around the mountain. Forests were destroyed. Rivers were blocked with mud, ash, and fallen trees. All plant and animal life was killed. Mount St. Helens is a volcanic mountain.

Most people call volcanic mountains **volcanoes** [vahl-KAY-nohs]. Volcanoes form in places where magma forces its way to the earth's surface. Once it reaches the earth's surface, magma is called lava. At the surface, lava cools and hardens. You may remember that it forms igneous rock.

The opening from which lava flows is called a **vent**. Dust, ash, and rock particles also are thrown out of a vent. A volcano is made up of the vent and the volcanic cone. The volcanic cone is the pile of lava, dust, ash, and rock around the vent. At the top of a volcano there may be a funnel-shaped pit. It is called a **crater** [KRAY-tur]. A crater forms when material is blown out of the vent.

Volcanic eruptions may be quiet or explosive. During a quiet eruption, lava flows gently to the surface. It spreads out and forms a large mountain. The slopes are gentle. This kind of volcano is called a shield cone.

During explosive eruptions, lava, boulders, ashes, dust, and gases are sent high into the air. Explosive eruptions occur when magma inside the earth is under great pressure. The magma "explodes" to the surface. Volcanoes formed by explosive eruptions have steep sides and narrow bases. They are called cinder cones.

Between eruptions, a volcano is said to be "sleeping" or dormant. A volcano that is not expected to erupt any more is said to be extinct.

VOLCANOES

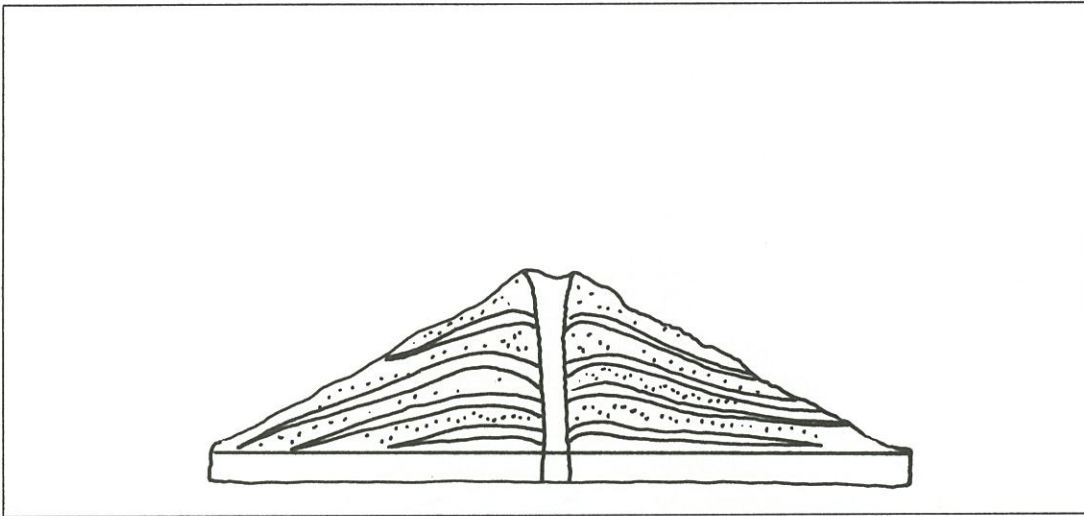


Figure A *A quiet eruption*

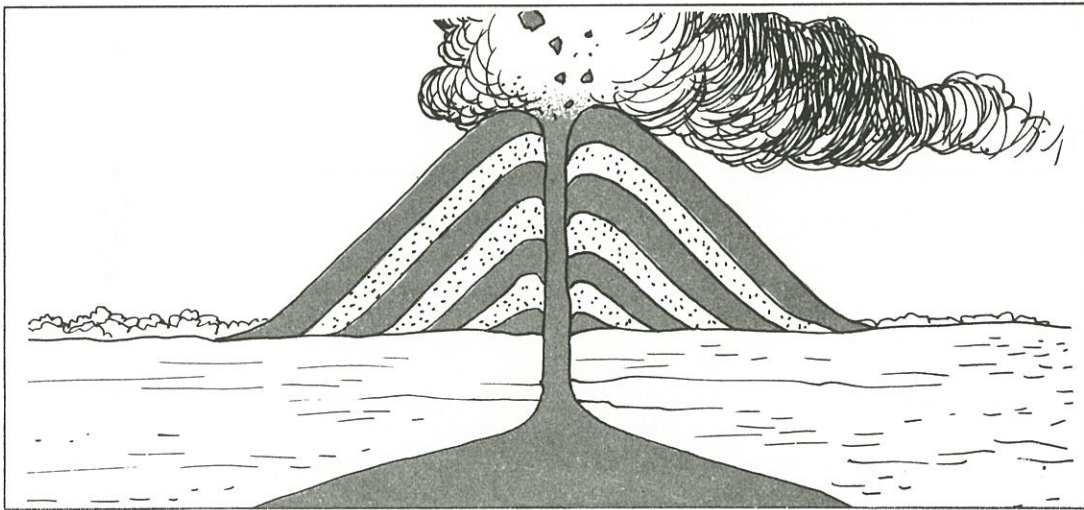


Figure B *An explosive eruption*

1. The sides of a volcano formed by a quiet eruption are _____ .
steep, gentle
2. The sides of a volcano formed by an explosive eruption are _____ .
steep, gentle
3. Which has a wider base, a volcano formed by a quiet or an explosive eruption?

4. Which is a shield cone? _____
A, B
5. Which is a cinder cone? _____
A, B

MORE ABOUT VOLCANOES

A quiet eruption forms a shield cone. An explosive eruption forms a cinder cone. But what if both quiet and explosive eruptions occur in the same volcano? Then a composite cone is formed. During a quiet eruption, lava forms a wide base. An explosive eruption adds a layer of dust, ash, and rock particles. After many quiet and explosive eruptions, a very high cone is formed. The cone is wide with steep sides.

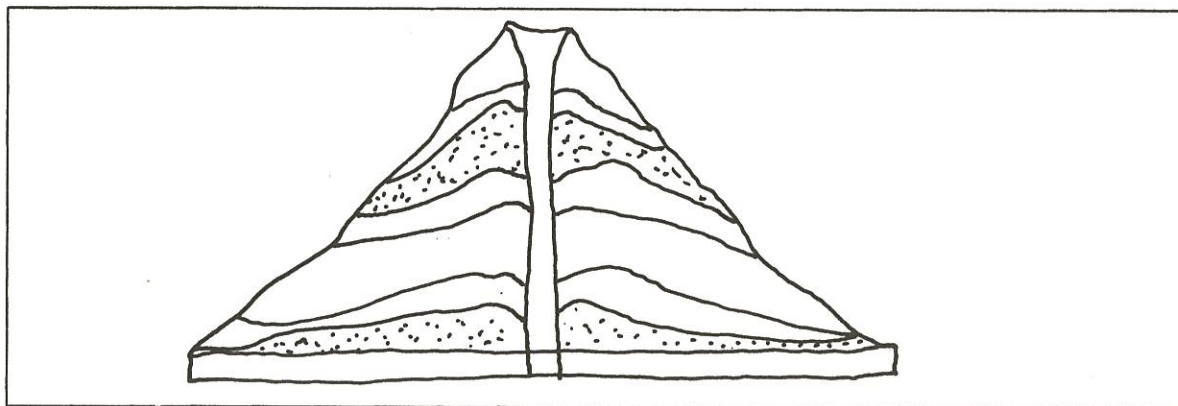


Figure C *Composite cone*

MATCHING

Match each term in Column A with its description in Column B. Write the correct letter in the space provided.

Column A		Column B
_____	1. crater	a) gentle slopes
_____	2. composite cone	b) steep sides with narrow bases
_____	3. cinder cone	c) opening from which lava flows
_____	4. shield cone	d) steep sides with wide bases
_____	5. vent	e) funnel-shaped pit

NOW TRY THIS

In the space provided, classify each volcano as “quiet” or “explosive.”

1. _____

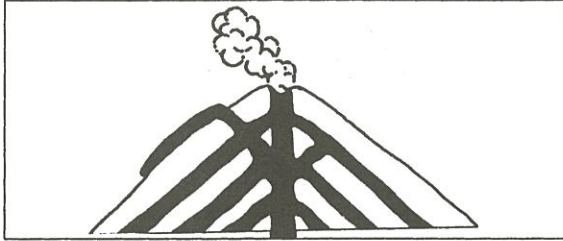


Figure D

2. _____

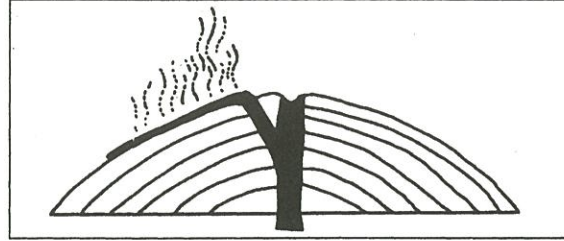


Figure E

In the spaces provided, identify the kind of volcano shown in each drawing. Use the terms shield cone, cinder cone, and composite cone. Then answer the questions.

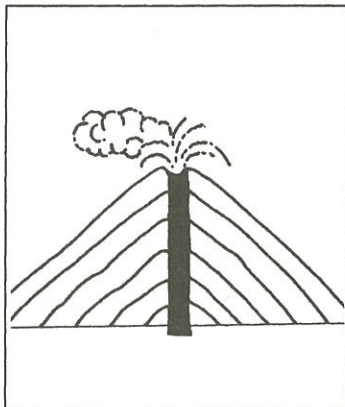


Figure F

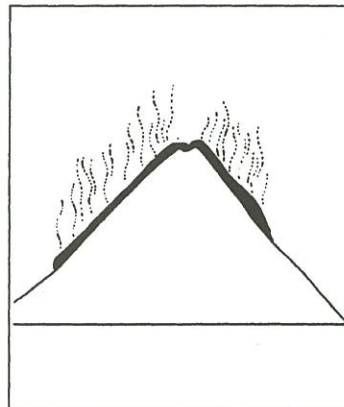


Figure G

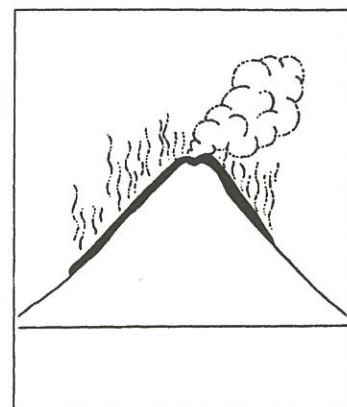


Figure H

1. _____

2. _____

3. _____

4. What material makes up a shield cone? _____
5. Does a shield cone form from a quiet eruption or an explosive eruption? _____
6. What kind of eruption forms a cinder cone? _____
7. What kind of eruptions form composite cones? _____
8. Which type of cone has the most narrow base? _____

WHAT DOES THE DIAGRAM SHOW?

The diagram below shows volcanoes, magma, and things that are part of volcanic action. Study the diagram. Then answer the questions below the diagram. Answer by writing the correct letters in the spaces provided.

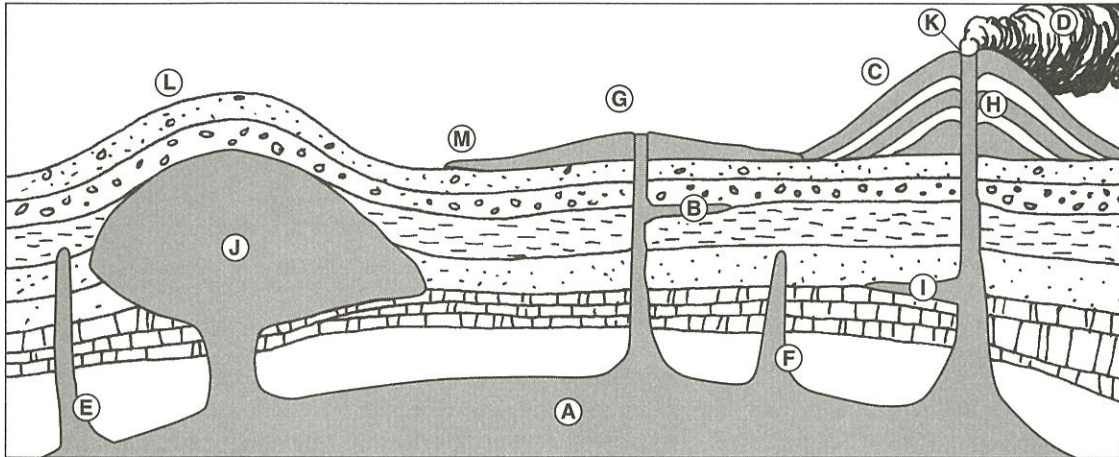


Figure I

1. explosive volcano _____
2. quiet volcano _____
3. lava flow _____
4. main magma supply _____
5. dome mountain _____
6. trapped magma that formed the dome mountain _____
7. poisonous gases, rocks, cinders, and ashes _____
8. crater _____
9. vent _____

You have not studied these parts. But see if you can find them from the descriptions.

10. Sometimes, trapped magma flows between rock layers. This flow is called a sill.
The diagram shows two sills. What are their letters? _____
11. Trapped magma also flows upward between cracks in rocks. This flow is called a dike. Two dikes are labeled. What are their letters? _____