

Name _____ Date _____ Class _____

Volcanoes ▪ *Guided Reading and Study*

Volcanic Landforms

This section describes landforms and soils that are created by volcanoes, and types of geothermal activity.

Use Target Reading Skills

As you read about volcanic landforms, use the headings to complete the outline below.

Volcanic Landforms	
I.	Landforms From Lava and Ash
A.	Shield Volcanoes
B.	_____
C.	_____
D.	Lava Plateaus
E.	_____
F.	_____
II.	Landforms From Magma
A.	_____
B.	_____
C.	_____
D.	Dome Mountains
III.	_____
A.	Hot Springs
B.	_____
C.	Geothermal Energy

Name _____ Date _____ Class _____

Volcanoes ▪ *Guided Reading and Study*

Volcanic Landforms *(continued)*

Landforms From Lava and Ash

1. List four landforms created from lava and ash.
 - a. _____
 - b. _____
 - c. _____
 - d. _____

2. Circle the letter of each sentence that is true about shield volcanoes.
 - a. They form from many thin layers of lava.
 - b. They result from quiet eruptions.
 - c. They are very steep mountains.
 - d. They are formed from ash, cinders, and bombs.

3. Is the following sentence true or false? The Hawaiian Islands are cinder cone volcanoes. _____

4. Name two examples of composite volcanoes. _____

5. Is the following sentence true or false? A composite volcano has both quiet and explosive eruptions. _____

Name _____ Date _____ Class _____

Volcanoes ▪ *Guided Reading and Study*

Match the landform with its description.

Landform

- ___ 6. shield volcano
- ___ 7. cinder cone
- ___ 8. composite volcano
- ___ 9. lava plateau
- ___ 10. caldera

Description

- a. High, level area formed by repeated lava flows
- b. Mountain formed by lava flows alternating with explosive eruptions
- c. Cone-shaped mountain formed from ash, cinders, and bombs
- d. Hole left by the collapse of a volcanic mountain
- e. Gently sloping mountain formed by repeated lava flows

11. When volcanic ash breaks down, it releases _____ and _____, both of which are needed by plants.

Landforms From Magma

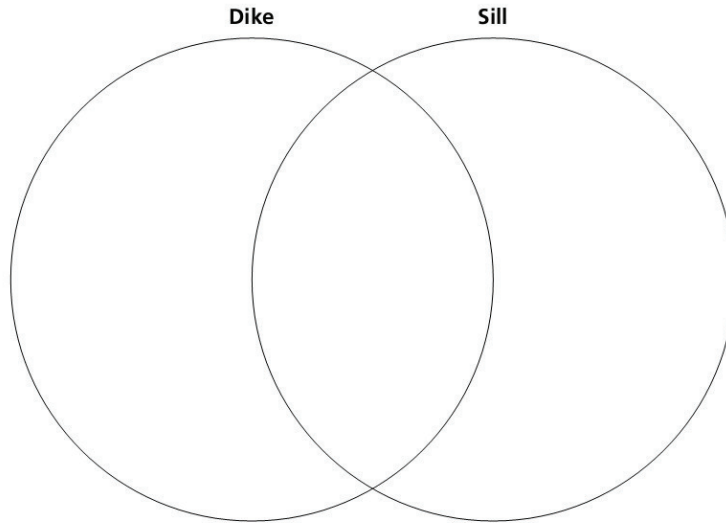
12. List five features formed by magma.
- a. _____
 - b. _____
 - c. _____
 - d. _____
 - e. _____

Name _____ Date _____ Class _____

Volcanoes ▪ *Guided Reading and Study*

Volcanic Landforms *(continued)*

13. Complete the Venn diagram using the following phrases: forms from magma, forms across rock layers, forms between rock layers.



14. A mass of rock formed when a large body of magma cools inside the crust is called a(n) _____.
15. What is an example of a batholith in the United States? _____

16. Is the following sentence true or false? A dome mountain forms when hardened magma is uplifted and pushes up horizontal layers of rock.

Geothermal Activity

17. Is the following sentence true or false? Some types of volcanic activity do not involve the eruption of lava.
18. When groundwater heated by a nearby body of magma rises to the surface and collects in a natural pool, it is called a(n) _____.
19. A fountain of water and steam that erupts from the ground is referred to as a(n) _____.
20. How can geothermal energy be converted to electricity? _____

Volcanoes ▪ *Section Summary***Volcanic Landforms****Key Concepts**

- What landforms do lava and ash create?
- How does magma that hardens beneath the surface create landforms?
- What other distinctive features occur in volcanic areas?

Some volcanic landforms are formed when lava flows build up mountains and plateaus on Earth's surface. **Volcanic eruptions create landforms made of lava, ash, and other materials. These landforms include shield volcanoes, composite volcanoes, cinder cone volcanoes, and lava plateaus.**

At some places on Earth's surface, thin layers of lava pour out of a vent. More layers of such lava harden on top of previous layers. The layers gradually build a wide, gently sloping mountain called a **shield volcano**. If a volcano's lava has high viscosity, the lava may explode into the air and harden into ash, cinders, and bombs. These materials pile up around the vent, forming a steep, cone-shaped hill or mountain called a **cinder cone**. Sometimes lava flows alternate with explosive eruptions of ash, cinders, and bombs. The alternating layers form a tall, cone-shaped mountain called a **composite volcano**. Some eruptions of thin, runny lava flow out of cracks and travel a long distance before cooling and hardening. Over millions of years, these layers of lava build up over a large area to form a lava plateau.

An enormous eruption may empty a volcano's main vent and magma chamber. With nothing to support it, the top of the mountain collapses inward. The huge hole left by the collapse of a volcanic mountain is called a **caldera**.

Over time, the hard surface of a lava flow breaks down to form soil. Some volcanic soils are among the most fertile soils in the world. People have settled close to volcanoes to take advantage of the fertile soil.

Sometimes magma rises upward through cracks in the crust but does not reach Earth's surface. The magma cools and hardens into rock beneath the surface. **Features formed by magma include volcanic necks, dikes, and sills, as well as batholiths and dome mountains.** A **volcanic neck** forms when magma hardens in a volcano's pipe. The softer rock around the pipe wears away, exposing the hard rock of the volcanic neck. A **dike** forms when magma forces itself across rock layers and hardens. A **sill** forms when magma squeezes between layers of rock and hardens. When a large body of magma cools inside the crust, a mass of rock called a **batholith** forms. Smaller bodies of hardened magma can form dome mountains.

In **geothermal activity**, magma a few kilometers beneath Earth's surface heats underground water. **Hot springs and geysers are types of geothermal activity that are often found in areas of present or past volcanic activity.** Hot springs collect in a natural pool. A **geyser** is a fountain of water and steam that erupts from the ground.