

Chapter 10

Text Pages 266–273

STUDY GUIDE

● Volcanoes and Earth's Moving Plates

Write the term or phrase that matches each definition below. Use the letters in the boxes to answer Item 14.

1. _ _ _ _ _
2. _ _ _ _ _
3. _ _ _ _ _ _
4. _ _ _ _
5. _ _ _ _
6. _ _ _ _ _ _ _
7. _ _ _ _ _ _ _ _ _
8. _ _ _ _ _ _ _
9. _ _ _ _ _ _ _ _
10. _ _ _ _
11. _ _ _ _ _ _ _ _
12. _ _ _ _
13. _ _ _

1. Structures in Earth that move on the asthenosphere
2. Magma that flows out onto Earth's surface
3. Opening at the top of a volcano's vent
4. Long, deep cracks formed when plates separate
5. The state of volcanoes currently spewing smoke, ash, steam, cinders, and/or lava
6. The state of volcanoes not currently active
7. Area around Pacific Plate where earthquakes and volcanoes are common, the Pacific _____
8. Openings in Earth's crust that allow magma to reach the surface
9. Type of boundary where plates separate
10. Melted rock deep inside Earth
11. Type of boundary where one plate slides under another plate
12. Mountain formed from layers of lava and volcanic ash
13. Area in Earth's mantle hot enough to melt rock into magma and create volcanoes
14. What process helps in the formation of volcanoes? _____

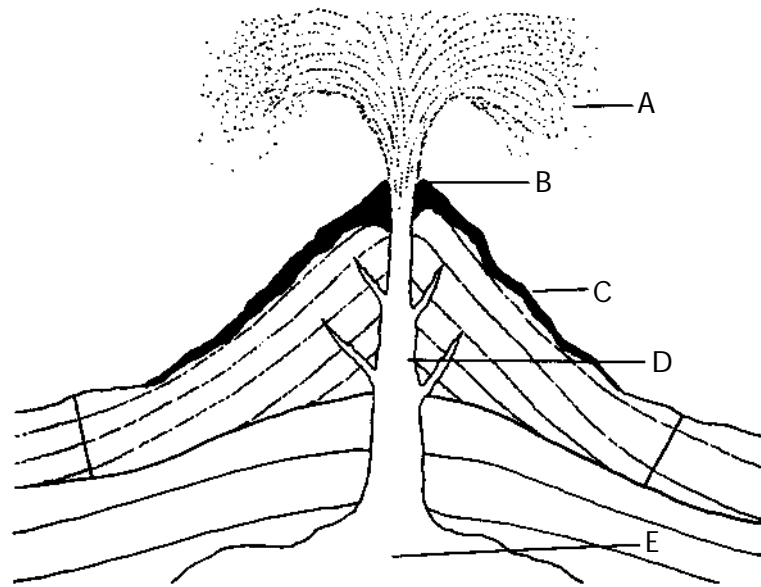
Chapter 10

REINFORCEMENT

Text Pages 266–273
and 283–286

● Volcanoes and Earth's Moving Plates

1. Use the diagram to identify the parts of a volcano.



A _____ D _____
 B _____ E _____
 C _____

2. Identify the three kinds of places where volcanoes can occur. Explain how a volcano can form at each and give an example of a volcano.

(1) _____

(2) _____

(3) _____

3. Describe the role of the Pacific Ring of Fire in the formation of volcanoes. _____

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● Energy from Earth

Answer the following questions on the lines provided.

1. Define geothermal energy. _____

2. Write the following sentences in the proper sequence to show how geothermal energy from magma is used.

- Hot water produces steam.
- Generators make electricity.
- Magma heats water.
- Steam spins generators.
- Magma is very hot.

(1) _____
(2) _____
(3) _____
(4) _____
(5) _____

3. Make a list of the advantages and disadvantages of using geothermal energy instead of energy from fossil fuels.

Advantages

Disadvantages

4. What are the two main engineering problems in getting energy from hot dry rock?

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Text Pages 274–275

REINFORCEMENT

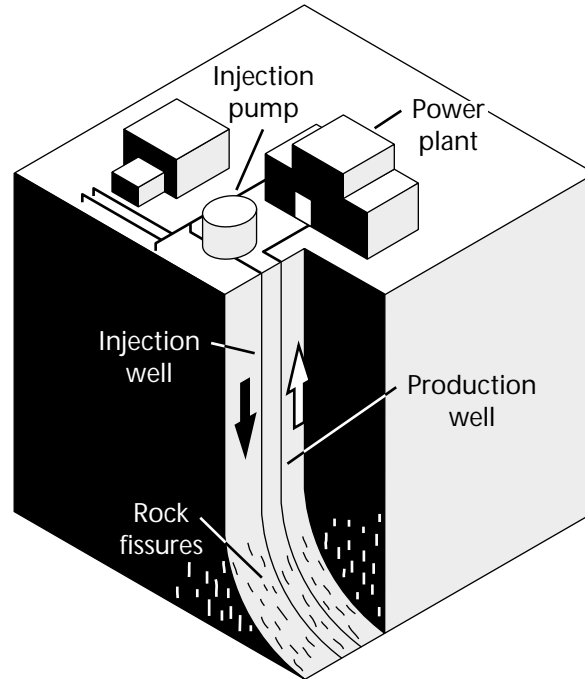
● Energy from Earth

Answer the following questions on the lines provided.

1. What are some advantages of using energy from hot dry rock as compared to energy from fossil fuels? _____

2. What are some disadvantages of using energy from hot dry rock? _____

3. The figure shows a simple diagram of how heat from hot dry rock can be used to generate electricity. Describe what is happening in the diagram.



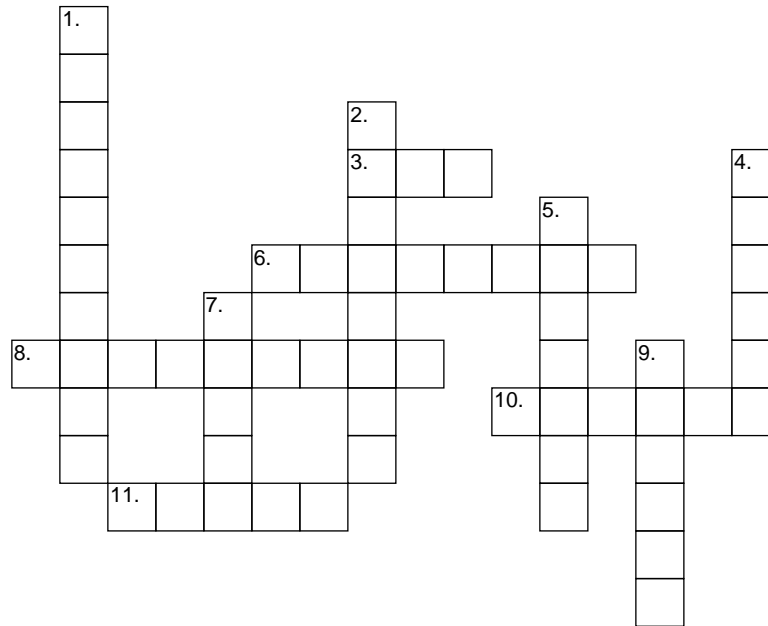
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Text Pages 276–286

● Eruptions and Forms of Volcanoes

Solve the crossword puzzle by using the definitions provided as clues.

**Across**

3. Smallest-sized tephra
6. Type of magma containing a lot of silica and water vapor
8. Volcano made of alternating layers of lava and tephra
10. Volcanic material thrown out during eruptions
11. Substances that affect the explosiveness of volcanic eruptions

Down

1. Steep-sided volcano made of tephra (2 words)
2. Type of magma containing little silica
4. Mineral that affects the thickness of magma
5. Medium-sized tephra
7. Larger-sized tephra
9. Broad volcano made of flat layers of basaltic lava

Answer the question in the space provided.

12. Two important factors determine whether an eruption will be explosive or quiet. What are they?

Chapter 10

REINFORCEMENT

● Eruptions and Forms of Volcanoes

Identify each form of volcano and then fill in the chart with the appropriate information about each form.

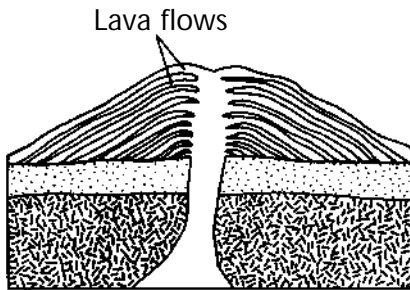


FIGURE 1

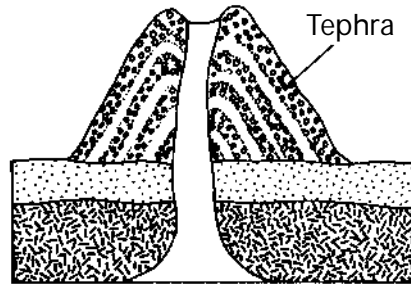


FIGURE 2

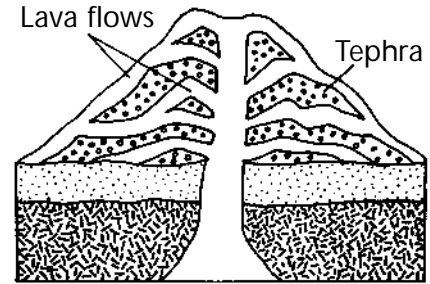


FIGURE 3

Form of volcano	Type of magma	Shape of volcano	Materials in volcano
1.			
2.			
3.			

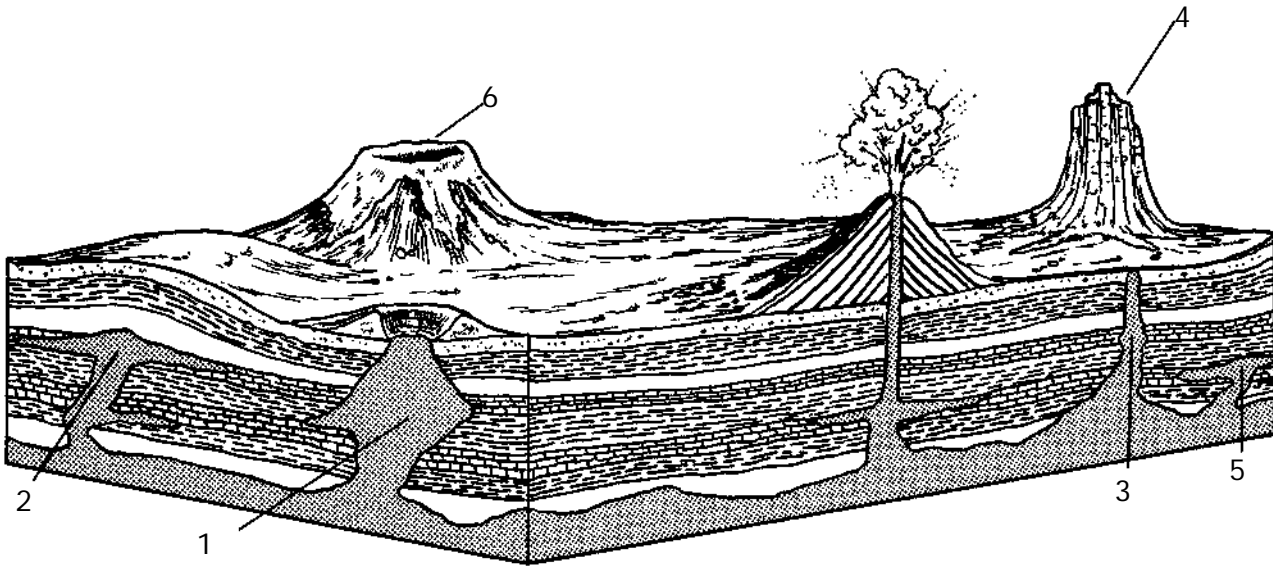
Answer the following questions on the lines provided.

4. What is the relationship between the amount of gases in magma and the explosiveness of a volcanic eruption? _____

5. What is the relationship between the silica content of magma and the explosiveness of a volcanic eruption? _____

● Igneous Rock Features

Identify each volcanic feature shown in the figure. Describe how it is formed.



1. _____

2. _____

3. _____

4. _____

5. _____

6. _____

Chapter 10

CHAPTER REVIEW

● Volcanoes

Part A. Vocabulary Review

Match the descriptions in Column I with their terms in Column II. Write the letter of the correct term or phrase in the blank at the left.

Column I

- _____ 1. Heat from magma used to heat water and produce steam for powering electric generators
- _____ 2. Basaltic volcano with gently sloping sides
- _____ 3. Largest intrusive igneous rock bodies
- _____ 4. Volcano formed from alternating layers of lava and tephra
- _____ 5. Magma hardened in a vertical crack
- _____ 6. Magma hardened in a horizontal crack
- _____ 7. Openings through which magma flows out on Earth's surface
- _____ 8. Steep-sided volcano made of tephra
- _____ 9. Solid magma core exposed when volcano cone erodes away
- _____ 10. Hot area in Earth's mantle that melts rock into magma
- _____ 11. Mountain that forms from layers of lava and ash
- _____ 12. Large opening caused by the collapse of the top of a volcano
- _____ 13. Area around the Pacific Plate where it collides with other plates
- _____ 14. Ash and cinders blown violently out of volcanoes
- _____ 15. Opening at the top of a volcano's vent
- _____ 16. Magma in a sill which pushes up to form a rock dome

Column II

- a. batholiths
- b. caldera
- c. cinder cone
- d. composite volcano
- e. crater
- f. dike
- g. geothermal energy
- h. hot spot
- i. laccolith
- j. Pacific Ring of Fire
- k. shield volcano
- l. sill
- m. tephra
- n. vents
- o. volcanic neck
- p. volcano

Chapter Review (continued)**Part B. Concept Review**

Answer the questions on the lines provided.

1. List two arguments for using geothermal energy to produce electricity. _____

2. List two arguments **against** using geothermal energy to produce electricity. _____

3. What are two important factors that affect the explosiveness of a volcano eruption?

4. What kind of volcanic eruption occurs when basaltic magma is present? Why? _____

5. What kind of volcanic eruption occurs when granitic magma is present? Why? _____

6. Why do explosive volcanic eruptions usually occur at subduction zones of converging plate boundaries? _____

7. Why are volcanoes dangerous to people? _____

8. Describe the process of using hot dry rocks to produce electricity. _____
