

Name: \_\_\_\_\_



# Volcanoes 101



## Interactive WebQuest

**Instructions:** Click on each of the links and corresponding sections to answer the questions.

Click: [http://pbs.panda-prod.cdn.s3.amazonaws.com/media/assets/wgbh/ess05/ess05\\_int\\_volcanintro/index.htm](http://pbs.panda-prod.cdn.s3.amazonaws.com/media/assets/wgbh/ess05/ess05_int_volcanintro/index.htm)

### Section 1: What is a Volcano?

- 1) Hot \_\_\_\_\_, melted rock below Earth's crust, rises and collects in a \_\_\_\_\_ deep below the surface. If the magma flows through a conduit up to a \_\_\_\_\_ on the surface, then it may cause an eruption and form a volcano.
- 2) \_\_\_\_\_, \_\_\_\_\_, and \_\_\_\_\_ material are erupted from volcanic vents. The mountain that forms from layers of lava and tephra is called a \_\_\_\_\_.

3) What is the origin of the word "volcano"?

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- 4) Volcanoes can be classified as active, dormant or extinct based on how much activity has been recorded over time. In the chart, write the definitions for each of these classifications.

Active	Dormant	Extinct

### Section 2: Types of Volcanoes

Name: \_\_\_\_\_

5) Along with their amount of activity over time, volcanoes can also be classified based on their \_\_\_\_\_, \_\_\_\_\_, \_\_\_\_\_ type, and \_\_\_\_\_ style.

6) The four types of volcanoes are:

- a.
- b.
- c.
- d.

7) In the chart, describe each type of volcano. (What do they look like? Where and how are they formed)

Cinder Cone Volcanoes	Composite / Strato-volcanoes
Shield Volcanoes	Lava Domes

**Section 3: Where Volcanoes Form**

Name: \_\_\_\_\_

8) There are three places that volcanism commonly occurs. These are at \_\_\_\_\_, \_\_\_\_\_ centers and \_\_\_\_\_ zones, and \_\_\_\_\_ zones.

9) Where do hot spot volcanoes form at?

\_\_\_\_\_  
\_\_\_\_\_

10) What type of volcanoes are commonly formed at hot spots, such as the Hawaiian Islands?

\_\_\_\_\_

11) Describe the motion of tectonic plates at spreading centers and fault zones, and explain how this motion contributes to the formation of volcanoes.

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12) What happens to tectonic plates during subduction?

\_\_\_\_\_  
\_\_\_\_\_

13) How are volcanoes formed at subduction zones?

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

#### **Section 4: Magma**

14) What is magma?

\_\_\_\_\_

15) Along with major elements like oxygen, silicon, aluminum and iron, magma can also contain dissolved gases like \_\_\_\_\_ vapor, \_\_\_\_\_ dioxide, and \_\_\_\_\_ dioxide.

#### **Section 5: Volcanic Rocks**

16) The Latin word \_\_\_\_\_ means "fire-formed". These types of rocks are formed when

\_\_\_\_\_.

17) What is the difference between an extrusive and intrusive igneous rock?

\_\_\_\_\_

Name: \_\_\_\_\_

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Click: [http://pbs.panda-prod.cdn.s3.amazonaws.com/media/assets/wgbh/ess05/ess05\\_int\\_volcanerupt/index.htm](http://pbs.panda-prod.cdn.s3.amazonaws.com/media/assets/wgbh/ess05/ess05_int_volcanerupt/index.htm)

### Section 1: Effusive Eruptions

18) Describe an effusive eruption.

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19) What are the hazards associated with an effusive eruption?

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### Section 2: Explosive Eruptions

20) Describe an explosive eruption.

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21) What are the hazards associated with an explosive eruption?

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### Section 3: Hazards

22) The direction of a volcanic blast can be illustrated by the position of the felled trees and other debris. The action of a volcanic blast knocking down trees and buildings is called a \_\_\_\_\_.

23) Describe a lahar and explain the dangers that they pose.

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24) Why are lava flows rarely a threat to human life?

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25) What is a pyroclastic flow?

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26) Why are pyroclastic flows so dangerous?

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27) Tephra is the term used to describe solid or molten rock fragments of any size ejected from a volcano. Describe the four different categories of tephra based on their size and form.

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28) Explain the negative effects that dense tephra clouds can have on biological life.

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29) Volcanic eruptions can cause \_\_\_\_\_, also referred to as tidal waves. They move at speeds near \_\_\_\_\_ mph, close to the speed of a commercial aircraft.

30) \_\_\_\_\_ is a hazardous mix of carbon dioxide, sulfur dioxide and other volcanic gases that can collect downwind of a volcano and cause a persistent \_\_\_\_\_ problem.