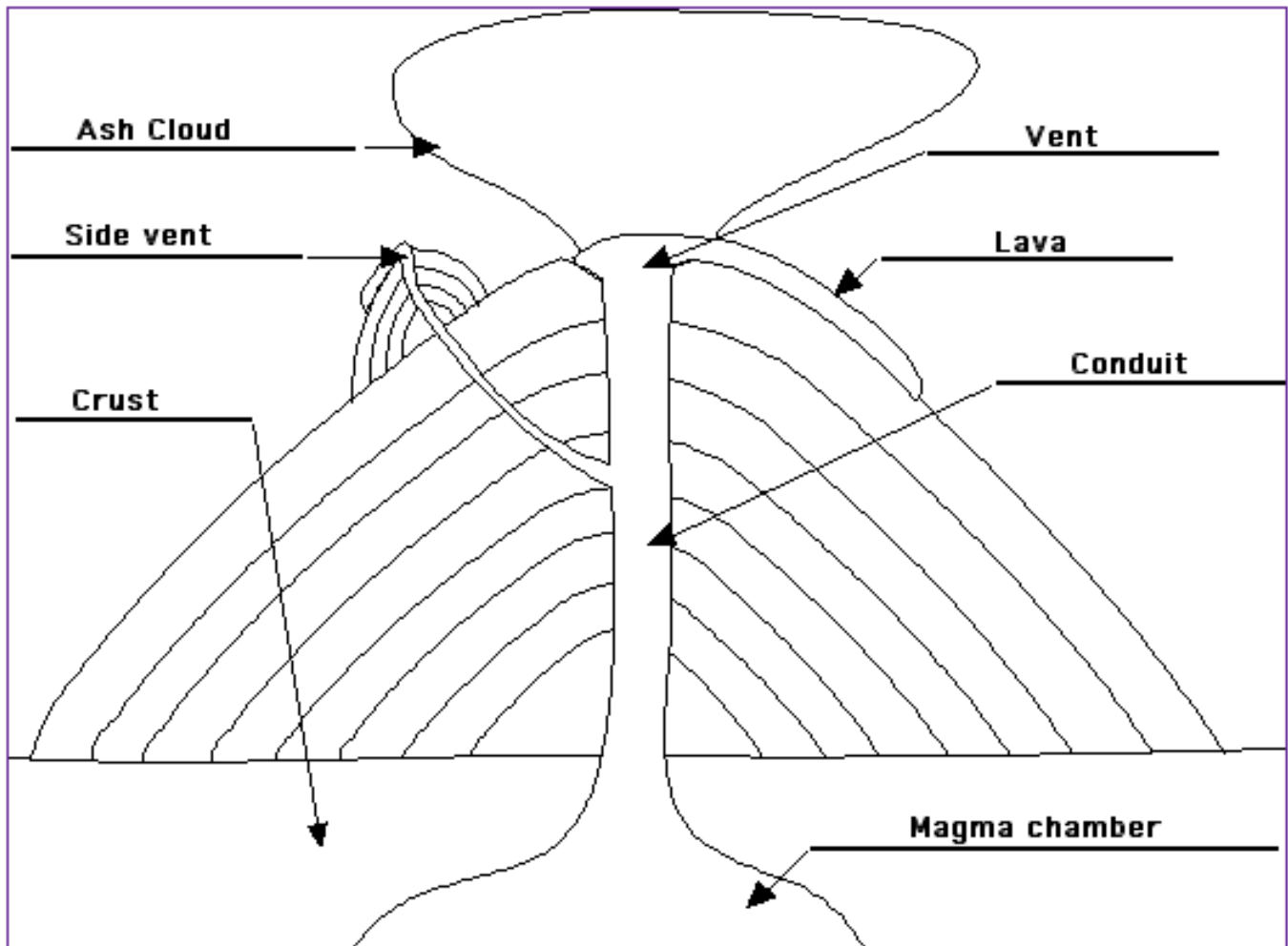


Chapter 6 Study Guide

1. Be able to identify the different parts of a volcano below.



2. What is a caldera?

A caldera is a huge hole left by the collapse of a volcanic mountain. And this hole can be filled up with pieces of the volcano that have broken off and fallen inward, as well as some lava and ash.

3. Quiet eruptions can produce two different types of lava that differs in temperature. List the two types of lava and describe them.

a) Pahoehoe is fast-moving, hot lava that is thin and runny. The surface of this type of lava looks like a solid mass of wrinkles and ropelike coils.

b) Aa is a lava that is cooler and slower-moving and is thicker than pahoehoe. When Aa hardens, it forms a rough surface consisting of jagged lava chunks.

4. Understand and be able to describe the life cycle of a volcano and list the volcano's three stages of activity.

Volcanic activity can be described as active, dormant, or extinct.

- a) **An active, or live, volcano is one that is erupting or has shown signs that it may erupt in the near**

future.

- b) A dormant, or sleeping, volcano may awaken in the future and become active once again.**
- c) An extinct, or dead, volcano is unlikely to erupt again.**

5. What is the name of a fountain of water and steam that erupts from the ground due to built up pressure beneath the earth? Hint: Refer back to a lab demonstration.

Geyser

6. What is a basin?

A broad, bowl-shaped valley that resulted from plate movements causing the crust to warp (bend) downward.

7. Name the different landforms made of lava and ash that are created from volcanic eruptions.

- a) Shield Volcano**
- b) Cinder Volcano**
- c) Composite Volcano (or Strato-Volcano)**

8. What forms when magma squeezes between horizontal layers of rock?

Sills

9. What is a batholith?

A mass of rock that forms when a large body of magma cools inside the crust.

10. Which plate subducted beneath the North American plate and resulted in the formation of Mount Shasta?

Mount Shasta forms as a result of the Juan de Fuca plate subducting beneath the North American plate.

11. Magma that hardens in a volcano's pipe forms what?

Volcanic neck.

12. The San Andreas fault in California is an example of what type of fault?

Strike-slip fault created by shearing stress. The San Andreas fault is an example of a strike-slip fault that is a sliding boundary.

13. Refer back to your Tower Construction lab, which type of foundation is the most stable?

B) REINFORCED CONCRETE

14. Give two examples of basins in California that was mentioned in your textbook or in your class notes.

Central Valley of California, Los Angeles Basin, or Chino Basin

15. Volcanic eruptions are classified as quiet or explosive and are determined by which two factors?

Magma's silica content and viscosity.

16. A measure of resistance of a fluid or its "thickness" is referred to as?

Viscosity

17. Lower viscosities forms crystals that cool much more quickly and will result in more grainy rocks with larger, more visible crystals. Is this statement true or false? If false, correct to make it true.

False, it will result in glassy crystalline structures. The slower cooling is the one that results in more grainy rocks with larger, more visible crystals.

18. Describe the various sizes of pyroclastic materials.

- a) **Volcanic ash: fine, rocky particles (could be as small as a speck of dust)**
- b) **Cinders: pebble-sized rocky particles**
- c) **Bombs: larger rocky particles, ranging from the size of a baseball to the size of a car**

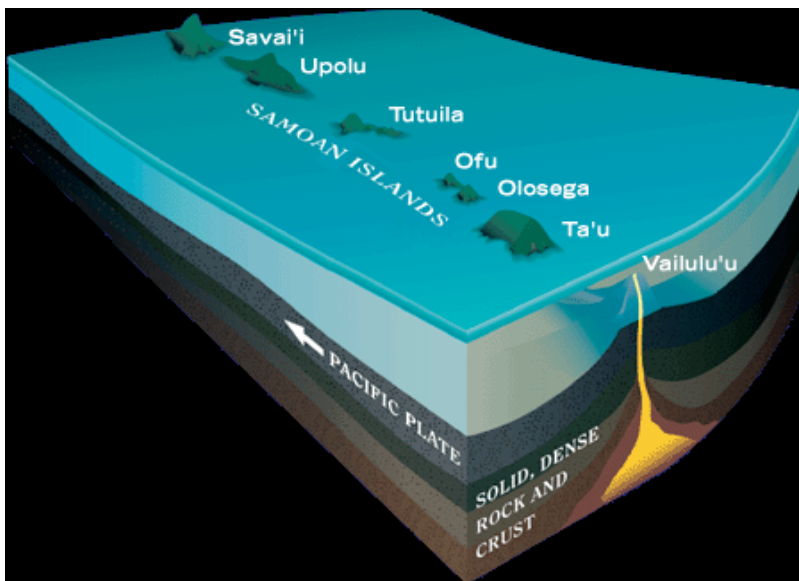
19. What is the percentage of volcanoes (including both active and dormant volcanoes) present in the Ring of Fire?

Contains 75% of the world's active and dormant volcanoes

20. A string of islands that results from volcanoes are called?

Island arc. Note: the curve of the island arc echoes the curve of its deep-ocean trench.

21. Refer to the image below, which of the islands is considered the oldest and why?



Savai'i is the oldest because it is the one furthest away from the hot spot. Remember that as the plates shift, it moves the previously formed islands further away from the hot spot. So the further away you go, the older the island is. Therefore, Vailulu'u is the youngest since it is directly over the hot spot.

22. Which type of volcano forms when the volcano's lava is high in silica, and the ash,

cinders, and bombs build around the vent to create a steep, cone-shaped hill or small mountain?

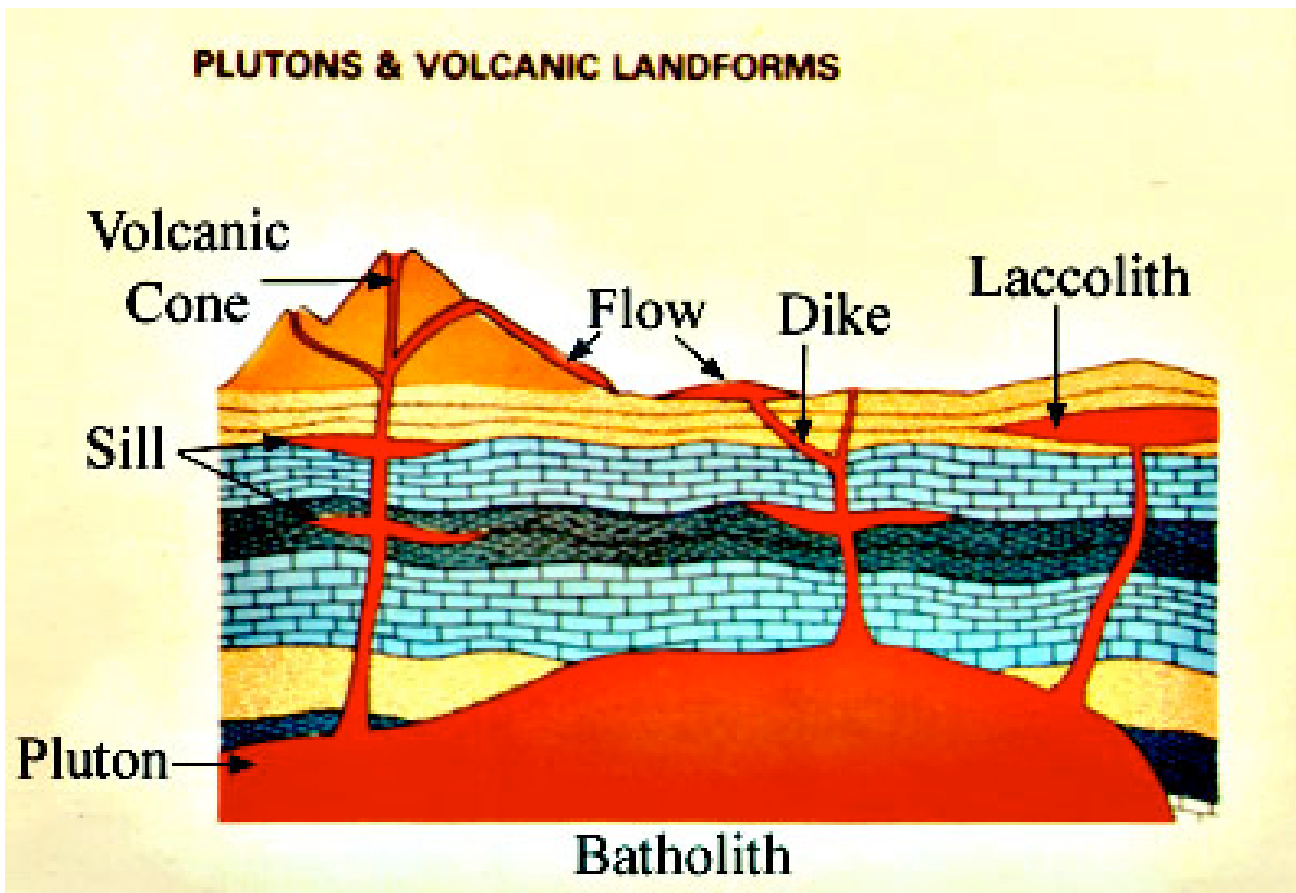
Cinder cone volcano

23. Is the soil around a volcano considered fertile or non-fertile? Explain your answer.

Old volcanic soil that has a chance to breakdown is considered highly fertile. It's high in Phosphorus, Potassium and other substances, which supports plant growth.

24. Give examples of plutons and describe each type. Note: A pluton is an intrusive igneous rock body that crystallized from magma slowly cooling below the surface of the Earth.

- a) **Dike is magma that has hardened after forcing itself across the rock layers.**
- b) **Sill form when magma squeezes between horizontal layers of rocks.**
- c) **Intrusion forms when magma hardens underground to form igneous rock.**
- d) **Batholith is a mass of rock formed when a large body of magma cools inside the crust.**



25. Are igneous rocks that form in a magma chamber considered intrusive or extrusive?

Intrusive (think INside)

**** Extra Credit**:** *Given a scatter plot, be able to determine if the data indicates high correlation, low correlation, or no correlation.*