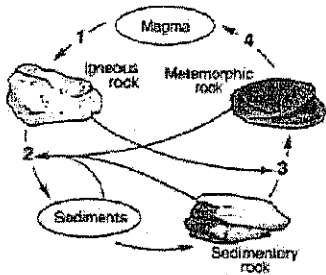


Grade 6 Earth Materials & Plate Tectonics Study Guide

- \_\_\_ 1. Which of the following is an example of chemical weathering?
  - a. Water freezing in a crack
  - b. Acid rain wearing away a statue
  - c. An animal burrowing in the ground
  - d. Plant roots pushing apart a sidewalk
  
- \_\_\_ 2. What created the Grand Canyon?
  
- \_\_\_ 3. Which of the following minerals is the hardest?
  - a. Biotite
  - b. Quartz
  - c. Calcite
  - d. Feldspar
  
- \_\_\_ 4. What type of rock is formed when sediments are compacted and cemented together?
  
- \_\_\_ 5. A soil sample has living and nonliving parts. Which of the following was once living?
  - a. small pebbles
  - b. sand particles
  - c. water droplets
  - d. organic material

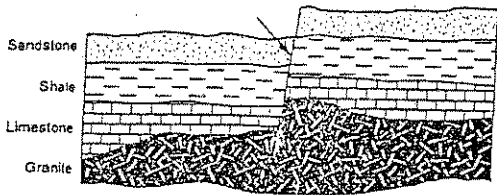
Large holes often appear in our roads and highways. What is one major cause of these potholes?  
 What geological event produces igneous rock?  
 Which sedimentary rock is the oldest, the top layer or layer on the bottom?

- \_\_\_ 9. The state of Michigan is bordered by four of the five Great Lakes. What formed geological event formed these lakes?



10. Circle the number in the rock cycle diagram above that represents weathering, erosion, transportation and deposition?  
 The diagram below represents layers of sedimentary rock.

- \_\_\_ 11. What model did we make in class, starting with Pangaea, that explains how plate motion is related to earthquakes and mountain building?
- \_\_\_ 12. The United States has two major mountain chains, the Rocky Mountains and the Appalachian Mountains. What major geological event formed these mountains?  
 The diagram below represents a cross section of rock layers.



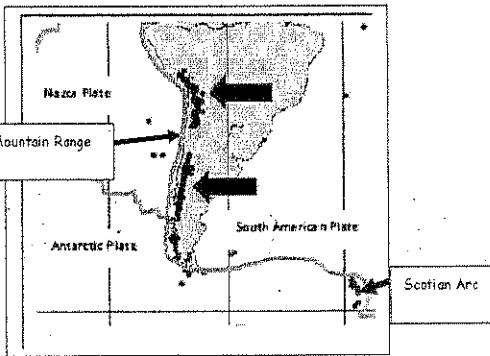
13. What most likely caused the crack indicated by the arrow in the diagram above?

4. What occurs when energy stored in the Earth's crust is suddenly released?

- a. Earthquake
- b. Mountain formation
- c. Tornado
- d. Volcano

5. What plate motions are occurring where new ocean crust is created?

6. The Earth's crust is composed of semi-rigid plates that move in various directions. On average how much movement do these plates experience over one year?



7. Based on the data above, how is the South American Plate moving relative to the Nazca Plate?

8. Using observations from the map of volcanic activity (above) which scientific question is most answerable?

- a. What type of plate boundary is near the Scotia Arc?
- b. When will the next volcano erupt in this area?
- c. What is the name of the volcanoes on the map?
- d. How fast is the Antarctic Plate moving?

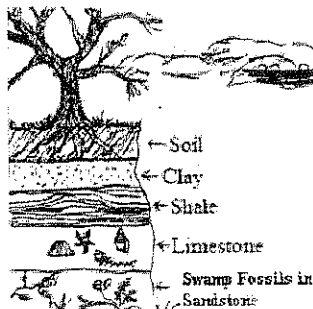
Essay

19. The lower right hand corner the map above in Question 23 has a small group of dots representing volcanic activity in the ocean area. This is called the Scotia Arc.

Based on the data above, how does what happens between the South American Plate and Antarctic Plate compare at this location to what caused the Andes Mountain range?

20. You have been given an unknown sample of an earth material. You do not know if it is a rock or a mineral.

- A. What type of tests and observations will you use to help identify this sample?
- B. What resources will you use to find out if your identification is accurate?



21. Make one observation from the diagram that relates to the geologic history of this area and a conclusion based on this observation.