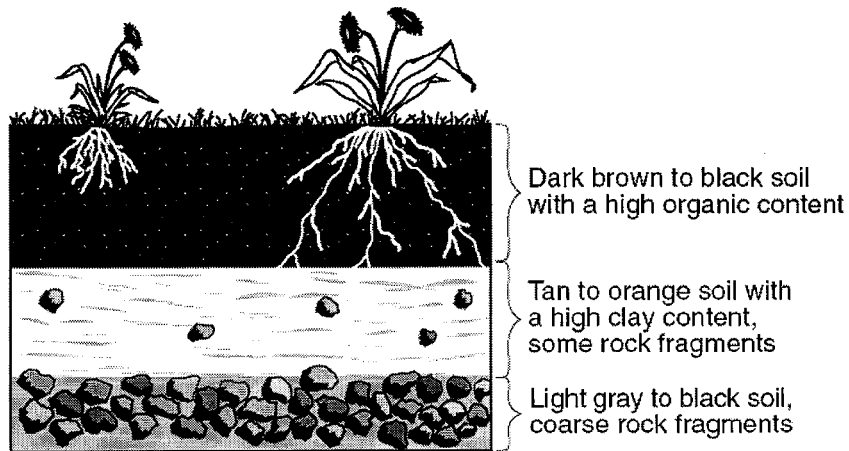


## Weathering and Erosion Review

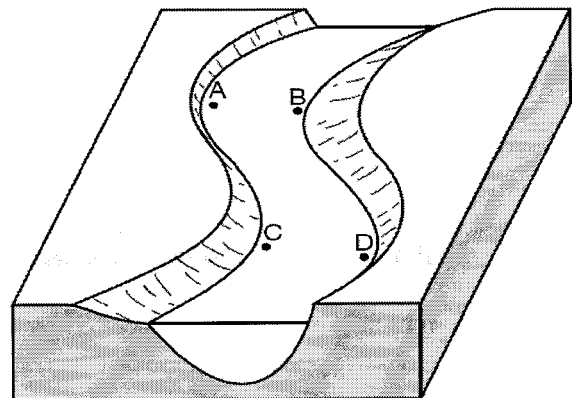
Use the diagram below to answer questions 1-2.



1. What climate conditions will cause the top layer to become thicker?
2. What is the name given to the top layer of soil?

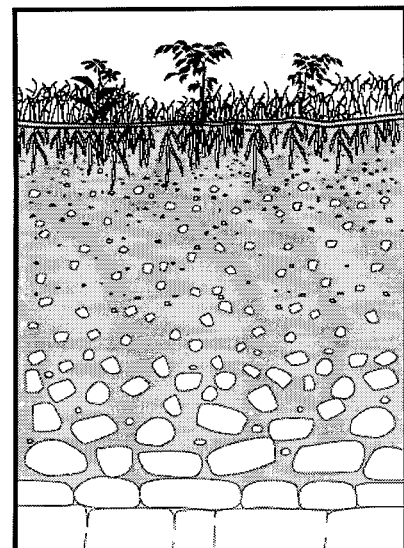
Use the diagram below to answer questions 3-6.

3. Which locations is the water moving the fastest?
4. Which locations will have the most deposition?
5. Label with a large arrow to show the fastest water.
6. Label with a small arrow the slowest water.

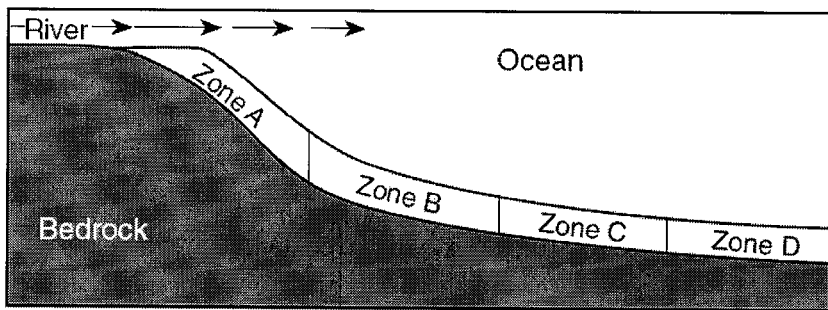


Use the diagram below to answer questions 7-8.

7. Label the area with the highest amount of organic material.
8. Label the area with the least amount of organic material.



Use the following diagram to answer questions 9-11.



Zone	Major Sediment Sizes
A	0.04 cm to 6 cm
B	0.006 cm to 0.1 cm
C	0.0004 cm to 0.006 cm
D	Less than 0.0004 cm

9. What causes this separation to occur?
10. What rock would form in zone C?
11. What zone would you find conglomerate rocks?
12. State at least two processes that formed this picture.

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Use the diagrams below to answer questions 13-17.

13. Which samples were deposited by water?

14. Which sample was deposited by three separate river flooding events?

15. Which samples was deposited by a glacier?

16. Which sample will water travel through the slowest?

17. Which sample would create shale?

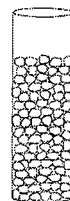
18. Which sample could form conglomerate rock?

Column A



Mixed particles  
(0.00001 cm to  
0.5 cm in size)

Column B



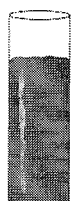
Uniform-sized  
particles  
(0.2 cm)

Column C



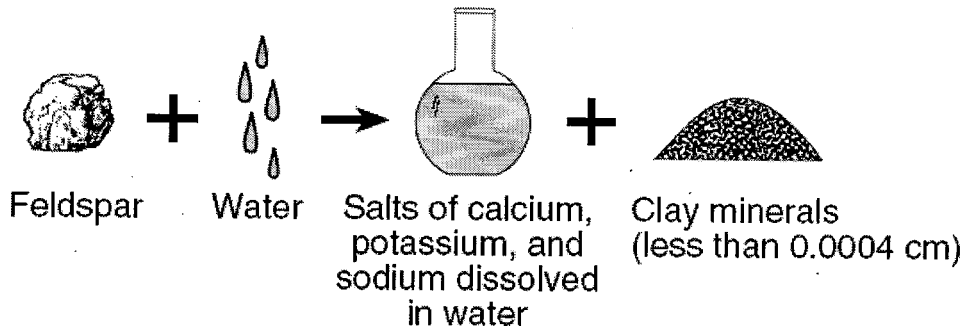
Sorted particles  
(0.0001 cm to  
0.2 cm in size)

Column D



Dry mud  
(Smaller than  
0.0004 cm in size)

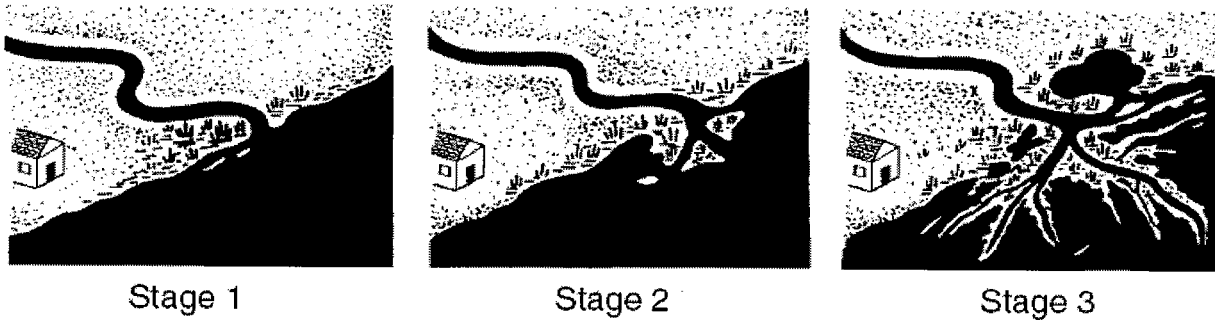
Use the picture below to answer questions 19-21.



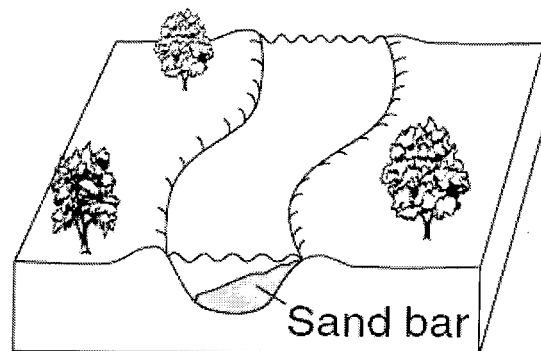
19. What process is occurring in this series of pictures?
20. What sedimentary rock could be formed by the pile of clay minerals formed?
21. How does the surface area of the feldspar piece compare to the surface area of the pile of clay minerals?

Use the picture below to answer questions 22-24.

The diagrams below show three stages of a river delta forming.



22. Which process is increasing between stage 1 and stage 3?
23. How does the size of the sediment change as you move from the shore line to the edge of the delta?
24. Why is the sand bar located in that position in the curve?



Use the following picture to answer questions 25-27.

25. What characteristic of this valley indicates it was formed by a glacier?

26. Describe two additional pieces of evidence that would be present in this valley to support your answer.

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27. If this valley was in New York State, Which general direction would it run?



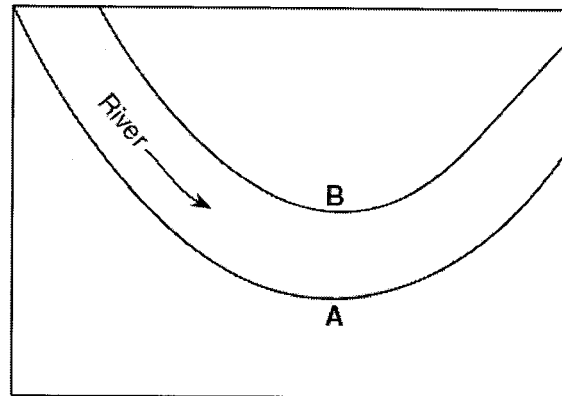
28. This structure is in the desert, what type of erosion could have formed this structure?



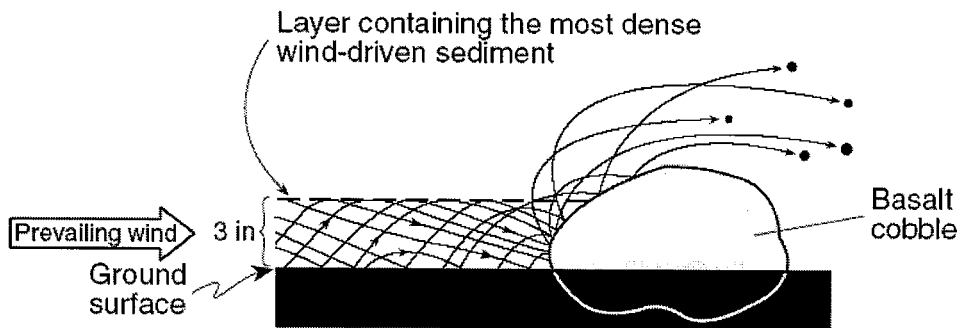
29. This structure is a deposit of sand, silt and clay. What type of deposition is this and where would it be found?



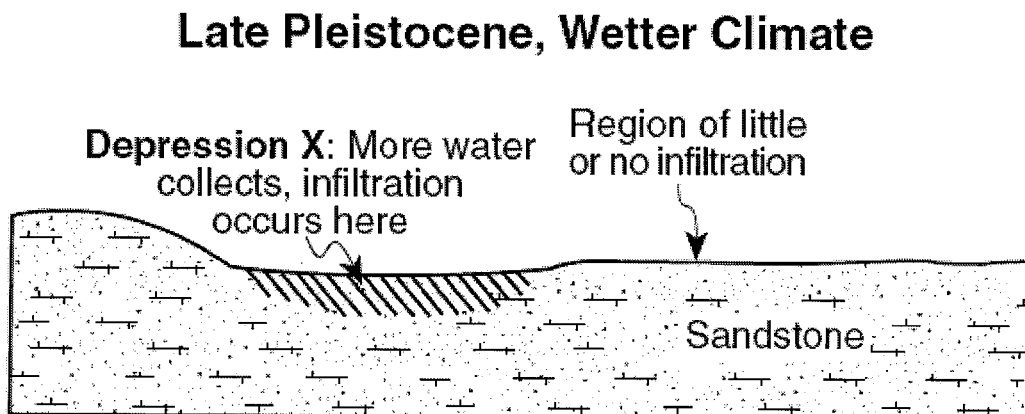
30. How does the speed of the river at location A compare to the speed at location B?



31. What will happen to the shape of this boulder over time under these conditions?



32. What will happen to the calcite cement holding the sandstone together if acidic rainwater infiltrates?



**Read the following paragraph and answer questions 33 and 35.**

### **Watching the Glaciers Go**

Mountain glaciers and ice caps in tropical areas of the world are melting fast and may vanish altogether by the year 2020. That was the chilling news last year from Lonnie Thompson, a geologist at Ohio State University's Byrd Polar Research Center who has been studying icy areas near the equator in South America, Africa, and the Himalayas for two decades.

It doesn't take a glacier scientist to see the changes. In 1977, when Thompson visited the Quelccaya ice cap in Peru, it was impossible not to notice a schoolbus-size boulder stuck in its grip. When Thompson returned in 2000, the rock was still there but the ice wasn't — it had retreated far into the distance.

Most scientists believe the glaciers are melting because of global warming — the gradual temperature increase that has been observed with increasing urgency during the past decade. Last year a panel of the nation's top scientists, the National Research Council, set aside any lingering skepticism about the phenomenon, concluding definitively that average global surface temperatures are rising and will continue to do so.

*"Watching the Glaciers Go,"  
Popular Science, vol. #7, January 2002*

33. Describe the arrangement of the sediment left behind by the glacier.
  
34. Where are glaciers usually found?
  
35. Some glaciers are found near the equator. What landform must be present for glaciers to occur?

**Read the following paragraph and answer question 36.**

### **Howe Caverns**

Many scientists believe that the formation of the rocks in which Howe Caverns is now found began millions of years ago. At that time, an ocean covered the eastern region of New York State. Hundreds of feet of calcium carbonate ( $\text{CaCO}_3$ ) sediments were deposited in layers along the edge of this ocean. These layers eventually formed the sedimentary rock limestone, which makes up the walls of today's Howe Caverns.

Much later, tectonic forces raised this region of New York State above sea level exposing the rock to weathering and erosion. These tectonic forces cracked the thick limestone, creating pathways for groundwater to infiltrate and gradually increase the size of the cracks. Eventually some of the larger cracks provided pathways for the underground stream, which carved the winding passages of Howe Caverns seen today.

36. Name one test you could use to determine if the walls of the cavern are limestone.