Chapter 23 Assessment

Vocabulary

Select the correct term to complete the sentences.

direction of younging	mechanical weathering	channel
frost wedging	meander	erosion
compaction	chemical weathering	mass wasting
cementation	deposition	graded bedding
cross bedding		

Section 23.1

1. Breaking a rock into two pieces is an example of _____.
2. _____ is mechanical weathering caused by ice.
3. Moving water is one of the most important agents of _____.
4. An old, worn-down marble statue is an example of _____.
5. A rockfall and a landslide are examples of _____.

Section 23.2

6. How sediment is "dropped" on a floodplain: _____ (a process)
7. Sediment particles, when deposited by water, settle in order from largest to smallest, forming a pattern called _____.
8. The path that a river or stream follows is called a(n) _____.
9. An oxbow lake was once a(n) _____ in a river.

Section 23.3

10. The _____ is the order in which sediment is deposited—from larger to finer particles.
11. _____ is a pattern of tilted or inclined beds that often form as wind or water deposit sediment.
12. Two processes involved in the formation of sedimentary rocks after deposition are _____ and _____.

Concepts

Section 23.1

1. Can both mechanical and chemical weathering affect a rock at the same time? If so, describe an example.
2. Would you see evidence of frost wedging in locations near Earth's equator? Why or why not?
3. Explain how the formation of salt crystals causes mechanical weathering.
4. Tree roots, burrowing organisms, and mosses all cause rocks to weather. What is the name for this type of weathering?
5. A sand castle built on a beach completely disappears over time. Is this an example of weathering or erosion? Explain.
6. Gravity is an important force involved in mass wasting. How is water involved? Give one example from the reading.

Section 23.2

7. Weathering "ages" mountains. How do you think an old mountaintop might appear compared to a relatively young mountaintop?
8. The size of rock particles that can be moved by running water is determined by what factor?
9. Describe a "healthy" glacier.

Section 23.3

10. If you were shown samples of mudstone and conglomerate rocks, how might you be able to tell them apart?
11. A sedimentary rock has two graded beds. How do you know which of the graded bed patterns formed last? Explain your answer.

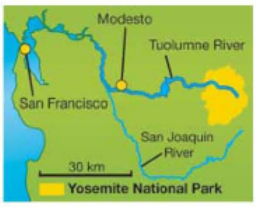
Problems

Section 23.1

1. Draw a cross-sectional view of each type of a river valley and a glacial valley. Label each.
2. In which situation will weathering happen faster? Pick the correct situation for each and explain your choice.
   a. a tropical rain forest or a dry desert
   b. an environment with a yearly freeze-thaw cycle or one with daily freeze-thaw cycles
   c. a rock with a high surface area to volume ratio or a rock with a low surface area to volume ratio
3. Stonehenge in England is about 5,000 years old and attracts many visitors each year. People are allowed to look at this landmark only from a distance. They cannot touch the stones. Why do you think this is so?

Section 23.2

4. Use the scale at the bottom of the map to answer the questions. First measure the scale bar with a ruler. Then, use the ruler to measure the distances on the map.
   a. How many kilometers of the Tuolumne River are located in Yosemite National Park?
   b. How far would sediment have to travel to go from Modesto to San Francisco?



Section 23.3

5. The different types of sedimentary rocks have special names. Rocks made of fragments of other rock particles are *clastic*. Rocks made of parts of living organisms such as shells are called *biological* sedimentary rocks. Sedimentary rocks made when minerals crystallize after deposition are called *chemical* sedimentary rocks. Identify each of the following sedimentary rocks as being clastic, biological, or chemical. (a) mudstone (b) sandstone (c) rock gypsum and (d) limestone

Applying Your Knowledge

Section 23.1

1. A number of famous caves and caverns have been formed by chemical weathering of underground limestone. Research Mammoth Cave in Kentucky. How was this cave formed?
2. Karst topography describes a landscape that results from the chemical weathering of underground limestone. Research karst topography. Where does it occur in the U.S. and why?

Section 23.2

3. Find out what clues indicate the previous location of a meandering river.
4. As white reflective surfaces, sea ice and glacial ice reflect the Sun's light and heat. How then might the reduction of sea ice and glacial coverage due to global warming affect Earth's climate? Write your ideas in a short paragraph.

Section 23.3

5. Review the rock cycle in Chapter 18. List the rock cycle processes that are involved in forming each group of rocks. (a) igneous (b) metamorphic (c) sedimentary.