Weathering, Erosion or Deposition?

Grades 6-8

Name _____ Date _____

Directions: Each scenario shows one of three processes. Weathering breaks rock apart where it sits. Erosion carries the loose pieces away. Deposition drops them in a new place. Circle the process, then answer item 8 in full sentences.

1. Rain trickles into a crack in a granite boulder on a mountain trail. Overnight it freezes and expands, and by spring the crack has widened into a split. The two halves have not moved.

A. weathering **B.** erosion **C.** deposition

2. After a week of heavy rain, a brown, muddy creek carries sand and silt from a farm field downstream toward a lake.

A. weathering **B.** erosion **C.** deposition

3. Where that creek enters the lake, the water slows and spreads out. Over the years a fan-shaped bank of sand builds up at the mouth of the creek.

A. weathering **B.** erosion **C.** deposition

4. Steady wind on a beach lifts dry grains of sand and blows them inland across a parking lot.

A. weathering **B.** erosion **C.** deposition

5. Behind a row of dune fences, the wind drops and the sand it was carrying piles up into a low ridge.

A. weathering **B.** erosion **C.** deposition

6. Rainwater that has picked up a little carbon dioxide trickles through limestone bedrock for thousands of years, slowly dissolving the rock where the water touches it.

A. weathering **B.** erosion **C.** deposition

7. A glacier grinds slowly down a valley, plucking loose blocks from the bedrock and dragging them along under the ice.

A. weathering **B.** erosion **C.** deposition

8. Items 1 and 6 are both weathering, but of two different kinds. Name the kind shown in each, and explain how you can tell them apart. Then give one more example of each kind.

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Answer key

Items 1 to 7: one point each. Item 8: three points, one for naming each kind correctly and one for the explanation and examples.

1. **weathering**
   Rock breaking in place; freezing water is mechanical weathering.
2. **erosion**
   Sediment is being moved by flowing water.
3. **deposition**
   Slowing water drops its load; the fan (a delta) is deposited sediment.
4. **erosion**
   Wind is the agent moving the sand.
5. **deposition**
   Where the wind slows, sand settles out and builds up.
6. **weathering**
   Weak acid dissolving rock in place is chemical weathering (the way solution caves form).
7. **erosion**
   The ice is transporting rock; a glacier is an agent of erosion.
8. **Item 1: mechanical (physical) weathering. Item 6: chemical weathering. Mechanical weathering only splits rock into smaller bits of the same material (ice wedging, temperature changes, roots, abrasion); chemical weathering changes the rock itself into new substances or dissolves it (acid rain, oxidation that rusts iron-rich rock, water dissolving limestone).**
   Accept any correct pair of examples; the key test is whether the rock material is only broken (mechanical) or chemically changed (chemical).