

SLOWING EROSION

Erosion has created some of the most spectacular features of Earth's landscape, but erosion can also have unwanted and destructive effects.

Consider the ways erosion by wind and water can be reduced.

- 38 Which of these **reduces** the erosion caused by moving water across a surface? Check four.

Speeding up its flow

Slowing its flow

Increasing the amount of water

Decreasing the amount of water

Increasing surface sediment size

Decreasing surface sediment size

Making the surface more durable

Making the surface less durable

- 39 Which of these usually slows the flow of water moving across the ground? Check three.

More obstacles

More slope

Rougher surfaces

Fewer obstacles

Less slope

Smoother surfaces

- 40 Some soil is good at soaking up water like a sponge. Other soil hardly soaks up any water at all. How does soil that soaks up rainfall help reduce erosion? Check one.



Soil that soaks up water reduces the amount of surface water that flows

Soil that soaks up water increases the roughness of the surface

Soil that soaks up water reduces the slope of the surface

VEGETATION

Plants naturally prevent erosion in many ways.

Dry areas with little or no plant life often see the most dramatic effects of erosion.



PRACTICE:

For each of the questions below, choose whether the plants shown are preventing erosion by changing the flow of water, by holding soil in place, or both.

- 41 Tree roots cover this steep slope and reach deep below the ground.



Changing flow

Holding soil

Both

- 42 Fallen and decaying plant materials absorb water on the forest floor.



Changing flow

Holding soil

Both

- 43 The large leaves of a tropical plant keep rain from hitting the ground directly.



Changing flow

Holding soil

Both

- 44 Mangrove trees roots grow both above and below the ground along a shore.



Changing flow

Holding soil

Both

HUMAN INTERVENTION

Erosion can wash away nutrient-rich soil, damage structures, pollute water bodies, and cause other negative consequences. People have developed strategies to reduce erosion by wind and water.

- 45 How can tall trees that surround many farms reduce erosion of the soil in the fields they surround?



RESEARCH:

- 46 Most of northern Africa is covered by the Sahara Desert—the largest hot desert in the world. The Sahara has expanded southward in the past century.

The **Great Green Wall** project is aimed at slowing this expansion. Research the project to explain what this “wall” is made of and how it might keep the Sahara Desert from pushing even farther south.



47 For centuries, farmers have grown rice on hillsides like this one. How can creating flat steps like this help reduce erosion on hills?




48 How do large concrete tetrapods like these help reduce shoreline erosion?



49 Dune fences like these don't just trap sand. How else do fences prevent sand erosion by wind on this beach?



 **JOURNAL:**
50 You can find things that are used to reduce erosion in lots of places—on trails, around construction sites, in parks, yards, gardens, and more. In your journal, include sketches or photographs of things you find that help reduce erosion and describe how they work. Here's a common one to help get you started!

