Bank Test Lab

Compare a science reading with results from a virtual stream-bank simulation.

CCSS.ELA-Literacy.RST.6-8.9 "Compare and contrast the information gained from experiments, simulations, video, or multimedia sources with that gained from reading a text on the same topic."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two facts in the READING TEXT and circle two results in the SIMULATION SCREEN. Draw a line between one reading fact and one simulation result that give related information.

How Roots Affect Stream Banks

1. READING TEXT, How Streams Shape Banks: Flowing water can move soil and rock from a stream bank. Fast water usually has more energy than slow water, so it can pick up and carry more sediment. Plant roots help hold bank soil together by threading through it. During heavy rain, stream flow often rises and speeds up. A bare bank may then lose soil quickly. Erosion changes the shape of a stream channel, and sediment carried downstream can settle where water slows.

2. Scientists also learn about erosion by comparing places along the same stream. A bank with grasses, shrubs, or trees often has more roots than a bare bank. Roots do not stop every loss of soil, especially during strong floods, but they can make soil harder for moving water to remove. Material that enters the stream is called sediment. When the current loses energy, such as where a stream widens, some sediment drops to the bottom. These changes can affect habitats for fish and insects.

3. SIMULATION SCREEN, Virtual Stream Bank Lab. The model lets you set water speed, rainfall, and roots, then reports bank loss after 10 virtual minutes. Run A: slow water, light rain, roots present, 1 centimeter of bank lost. Run B: fast water, heavy rain, roots present, 4 centimeters lost. Run C: fast water, heavy rain, no roots, 8 centimeters lost. The display includes a side view of each bank before and after the run. In every run, the stream channel is the same width at the start.

2 ANSWER WITH EVIDENCE

Use the passage

1. What explanation about roots comes from the reading text but is not shown by the simulation results?

2. The reading says roots help protect bank soil. How do Runs B and C test that idea, and what do the results show?

3. What can you learn from the reading text about sediment that you cannot learn from the simulation screen?

4. Name one kind of information the reading gives and one kind the simulation gives about bank erosion. Why do the two sources work well together?

3 YOUR TURN

Your own words

A park manager wants to protect a bare stream bank. Write a three-sentence recommendation. In sentence 1, name an action; in sentence 2, use a detail from the reading; in sentence 3, use simulation results to explain why the action should help.

ANSWER KEY

Bank Test Lab

GRADE 7 · RST.6-8.9

PART 1 · READ AND MARK

Underline two facts in the READING TEXT and circle two results in the SIMULATION SCREEN. Draw a line between one reading fact and one simulation result that give related information. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What explanation about roots comes from the reading text but is not shown by the simulation results?	**The reading explains that roots hold soil together by threading through it.**
2	The reading says roots help protect bank soil. How do Runs B and C test that idea, and what do the results show?	**The runs keep fast water and heavy rain the same but change whether roots are present. Bank loss is 4 centimeters with roots and 8 centimeters without roots, showing that roots reduce erosion.**
3	What can you learn from the reading text about sediment that you cannot learn from the simulation screen?	**The reading explains that sediment can settle to the bottom where water slows, such as where a stream widens.**
4	Name one kind of information the reading gives and one kind the simulation gives about bank erosion. Why do the two sources work well together?	**The reading gives explanations about how water, roots, and sediment act. The simulation gives measured results from controlled runs. Together, they explain the process and show numerical evidence for it.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Plant grasses, shrubs, or trees on the bare bank. The reading explains that roots thread through soil and make it harder for moving water to remove it. In the simulation, the fast, heavy-rain bank lost 4 centimeters with roots but 8 centimeters without them, so roots can reduce erosion.

Accept equivalent comparisons that accurately separate information from the reading and information from the simulation. For the open task, accept other reasonable bank-protection actions only if the student uses accurate evidence from both sources.