Tray Testers

Use a model to show erosion and test a soil-saving barrier.

3.1.e "developing and using models use models to demonstrate simple phenomena and natural processes develop a model (e.g., diagram or simple physical prototype) to illustrate a proposed object, tool, or process"

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the parts of the tray model. Circle the words that tell what each part represents or shows.

A Hillside in a Tray

1. Maya's class wanted to show what happens when rain falls on a bare hillside. They built a model in a shallow tray. Crumpled paper made a hill, and dry soil covered it. A cup with small holes acted like a rain cloud. At the bottom, an empty cup collected the water and soil that moved downhill.

2. First, the class poured the same amount of water through the holey cup three times. Water ran down the soil, carrying some soil into the lower cup. This showed erosion, a process in which moving water carries soil away. The tray was not a real hillside, but its parts stood for a hill, rain, and runoff.

3. Next, the class added three rows of craft sticks across the paper hill. The sticks were a model of small barriers that could slow water on a real slope. They repeated the water test. Less soil reached the lower cup, so the class used the model to explain how barriers may help hold soil in place. A model can be changed and tested to show an idea.

2 ANSWER WITH EVIDENCE

Use the passage

1. What did the crumpled paper and the holey cup represent in the model?

2. What natural process did the water and soil movement show?

3. What did the class add to test a possible tool for helping a real hillside?

4. What changed after the craft-stick barriers were added? What idea did this help the class explain?

3 YOUR TURN

Your own words

Create a three-panel model that shows wind moving loose soil and a tool that could reduce the soil movement. Label the model parts in each panel, then add one sentence explaining how your tool could help.

ANSWER KEY

Tray Testers

GRADE 3 · 3.1.e

PART 1 · READ AND MARK

Underline the parts of the tray model. Circle the words that tell what each part represents or shows. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What did the crumpled paper and the holey cup represent in the model?	**The crumpled paper represented a hill, and the holey cup represented a rain cloud.**
2	What natural process did the water and soil movement show?	**It showed erosion, when moving water carries soil away.**
3	What did the class add to test a possible tool for helping a real hillside?	**They added three rows of craft sticks, which modeled small barriers.**
4	What changed after the craft-stick barriers were added? What idea did this help the class explain?	**Less soil reached the lower cup. This helped explain that barriers may slow water and help hold soil in place.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Panel 1: fan, tray, loose soil; Panel 2: blocks across tray; Panel 3: less soil beyond blocks; Sentence: The blocks act as a windbreak that slows the wind and helps keep soil in place.

Accept equivalent descriptions that correctly connect each model part to the real object or process it represents. For the open task, accept different workable tools if the panels show wind moving soil, the tool added, and a sensible predicted result.