Slow the Flow

Read how neighbors test a plan to protect a creek.

E.5.10 "Students will demonstrate an understanding of the effects of human interaction with Earth and how Earth's natural resources can be protected and conserved..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the human-made cause of runoff and circle two actions that protect water or soil. Number the sentences that show the problem, plan, model, first test, and improvement from 1 to 5.

A Plan for Oak Creek

1. After three days of heavy rain, water rushed off Oak Street's paved parking lot. The water carried loose soil and trash toward a creek. At the next storm, the creek rose over a path near homes. Paved ground cannot soak up much rain, so more water reached the creek quickly. Neighbors defined their problem: slow the runoff before it reached the creek.

2. The group collected ideas and chose a rain garden beside the parking lot. Its shallow basin and native plants could hold runoff while water soaked into the soil. Plant roots would help keep soil from washing away. Neighbors also planned to clear litter from the drain so it would not clog. Together, these steps could protect the creek's water and soil.

3. Before digging, students built a small model with a sloped tray, soil, and a shallow planted area. They poured one cup of water onto the tray. In the first test, water ran past the garden and spilled over the edge. The group moved the garden closer to the water's path and tested again with the same amount of water. Less water spilled over the edge.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why does the paved parking lot make flooding near homes more likely?

2. How could the rain garden help protect both water and soil?

3. Why did neighbors plan to clear litter from the drain as well as build a rain garden?

4. What showed that the first model needed improvement? How did the group change and retest it?

3 YOUR TURN

Your own words

A small cooking-oil spill reaches a pond near your school. Write a plan for adults that states the problem, proposes a way to contain and remove the oil, describes a small model you could build, tells how you would test it, and names one improvement if the test fails.

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PART 1 · READ AND MARK

Underline the human-made cause of runoff and circle two actions that protect water or soil. Number the sentences that show the problem, plan, model, first test, and improvement from 1 to 5. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why does the paved parking lot make flooding near homes more likely?	**Pavement does not soak up much rain, so runoff reaches the creek quickly and can make it rise.**
2	How could the rain garden help protect both water and soil?	**It holds runoff while water soaks into the ground, and plant roots help keep soil from washing away.**
3	Why did neighbors plan to clear litter from the drain as well as build a rain garden?	**Clearing litter keeps the drain from clogging, while the rain garden holds runoff and helps water soak into soil.**
4	What showed that the first model needed improvement? How did the group change and retest it?	**Water ran past the garden and spilled over the tray's edge. The group moved the garden closer to the water's path, then poured the same amount of water again. Less water spilled.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The oil could spread across the pond and harm its water. Adults could place a floating barrier around the spill and use absorbent pads to lift the oil out. I would build a model in a tub of water with a little cooking oil and a foam barrier. I would check whether oil escapes the barrier. If it does, I would close gaps in the foam and test again. Adults would collect the used pads for proper disposal.

Accept other safe ways to contain and remove oil. The plan should include a model, a test that checks whether the plan works, and a change based on a possible test result.