Creekside Choices

Build and defend a plan to reduce runoff pollution

E.8.10.2 "Create and defend a proposal for reducing the environmental effects humans have on Earth (e.g., population increases, consumer demands, chemical pollution, deforestation, and change in average annual temperature)."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the proposed actions, circle details that explain how they could reduce pollution, and number one limitation and one way to test the plan. Use your marks to evaluate the proposal.

A Plan for Willow Creek

1. After a hard rain, water from Westbank Middle School's lawn rushes toward a storm drain that empties into Willow Creek. The grounds crew sometimes spreads fertilizer on the lawn to keep the grass green. Rain can carry some of its nitrogen into the creek. Extra nutrients can fuel algae growth. When algae die and decompose, dissolved oxygen can fall, making life harder for fish. The school wants to cut this pollution without closing the field where students play.

2. One proposal is to replace a narrow strip of grass beside the drain with native plants and stop fertilizing that strip. Their stems slow flowing water, and their roots take up some nutrients before the water reaches the drain. Workers would need to make sure runoff crosses the planted strip, rather than flowing around it on pavement. A drain screen might catch leaves and litter, but it would not remove dissolved nitrogen carried in the water.

3. The planted strip would cost money to install and would need weeding while the plants become established. It would not stop fertilizer from reaching the creek during storms when water flows directly off the parking lot into the drain. To test the proposal, students could collect water samples at the drain after similar-sized storms, before and after planting, and measure dissolved nitrogen. They could also sample a nearby drain without a planted strip. That comparison helps separate the strip's effect from changes in weather or fertilizer use.

2 ANSWER WITH EVIDENCE

Use the passage

1. What should the school change near the drain, and how could that change reduce harm to fish?

2. If someone suggests a drain screen instead, which plan better targets dissolved nitrogen? Defend your choice.

3. What weakness in the planted-strip plan would you address, and what change could help?

4. How could the school gather evidence that the strip, rather than different weather, reduced pollution?

3 YOUR TURN

Your own words

At school games, many single-use plastic water bottles end up in the trash. Propose a practical change to reduce this waste, explain how it would lessen an environmental effect, identify one obstacle, and describe how you would measure success.

ANSWER KEY

Creekside Choices

GRADE 8 · E.8.10.2

PART 1 · READ AND MARK

Underline the proposed actions, circle details that explain how they could reduce pollution, and number one limitation and one way to test the plan. Use your marks to evaluate the proposal. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	What should the school change near the drain, and how could that change reduce harm to fish?	**Replace a strip of grass with native plants and stop fertilizing it. The strip could slow runoff and take up nutrients, reducing the algae growth that can lead to low oxygen for fish.**
2	If someone suggests a drain screen instead, which plan better targets dissolved nitrogen? Defend your choice.	**The planted strip better targets dissolved nitrogen because plants can take up some nutrients. A screen catches leaves and litter but cannot remove dissolved nitrogen.**
3	What weakness in the planted-strip plan would you address, and what change could help?	**Parking lot runoff could enter the drain without crossing the strip. Route that runoff across the planted strip instead.**
4	How could the school gather evidence that the strip, rather than different weather, reduced pollution?	**Measure dissolved nitrogen at the drain after similar-sized storms before and after planting. Compare the results with samples from a nearby drain without a planted strip.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

The school could set up water refill stations at games and ask fans to bring reusable bottles. Using fewer disposable bottles would reduce plastic waste and the demand for new plastic. Some fans may forget a bottle, so the school could lend reusable cups that volunteers collect and wash. To check whether the plan works, volunteers could count the plastic bottles found in game-day trash before and after the change.

Accept other feasible proposals when students connect the action to a specific environmental effect, address an obstacle, and give a measurable test. For question 3, accept any change that reasonably addresses a limitation stated in the passage.