

Choices Shape Creeks

Trace how community decisions change local ecosystems.

SS.8.G.5 "Understand how human actions can impact the environment."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each human action and circle each environmental effect. Write the same number beside connected actions and effects to show how people's choices change the environment.

Willow Creek Decisions

- ① Along Willow Creek, the city of Riverton replaced a grassy lot with a parking area for a sports complex. During storms, rain flowed quickly across the pavement instead of soaking into soil. The runoff carried motor oil, litter, and loose sediment into the creek. Muddy water blocked sunlight from underwater plants, and algae grew after nutrients washed in from nearby lawns. Fewer aquatic insects lived in the stream, leaving less food for fish, frogs, and birds. The parking area also made flooding more likely downstream.
- ② To reduce these effects, Riverton installed rain gardens beside the lot and placed a vegetated strip along the creek. Deep-rooted native plants slowed water, held soil in place, and filtered some pollution before it reached the stream. The city also used permeable pavement in new walkways, allowing more rain to enter the ground. These choices did not remove every problem, but the creek became clearer after storms. Insects returned to several shallow areas, showing how changing land use can help repair an ecosystem.
- ③ Riverton's leaders still face decisions about growth. A proposed apartment building would provide homes near bus routes, but construction could remove mature trees that cool streets and shelter wildlife. Residents suggested keeping the largest trees, planting replacements, and using a construction plan that prevents soil from washing into Willow Creek. They also asked builders to reuse materials when possible, reducing waste sent to a landfill. The proposal shows that human actions may have both benefits and environmental costs, so communities must compare choices carefully.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 How did replacing the grassy lot with pavement make flooding more likely downstream?

2 Name two materials that runoff carried into Willow Creek. Then state one effect the muddy water had on the ecosystem.

3 How did rain gardens, vegetated strips, and permeable pavement help protect the creek?

4 What is one benefit and one environmental cost of the proposed apartment building?

3 YOUR TURN _____ Your own words

Choose one action your school, neighborhood, or community could take. Write four sentences that name the action, explain one environmental benefit and one possible environmental cost, and propose one way to reduce the cost.

PART 1 • READ AND MARK

Underline each human action and circle each environmental effect. Write the same number beside connected actions and effects to show how people's choices change the environment. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	How did replacing the grassy lot with pavement make flooding more likely downstream?	Rain flowed quickly across pavement instead of soaking into soil, so more runoff moved downstream.
2	Name two materials that runoff carried into Willow Creek. Then state one effect the muddy water had on the ecosystem.	Runoff carried motor oil, litter, and loose sediment. Muddy water blocked sunlight from underwater plants.
3	How did rain gardens, vegetated strips, and permeable pavement help protect the creek?	They slowed water, held soil in place, filtered some pollution, and allowed more rain to enter the ground.
4	What is one benefit and one environmental cost of the proposed apartment building?	A benefit is providing homes near bus routes. An environmental cost is removing mature trees that cool streets and shelter wildlife, or allowing soil to wash into the creek during construction.

PART 3 • YOUR TURN (SAMPLE ANSWER)

Our school could replace part of its lawn with a native plant garden. The garden would provide food and shelter for pollinators and would need less watering after plants are established. Digging the garden could disturb soil, and rain might carry loose soil into a storm drain. Workers could cover exposed soil with mulch and plant the garden in sections.

Accept equivalent cause-and-effect explanations that are supported by the passage. For the open response, accept realistic actions with a clear environmental benefit, a plausible cost, and a specific way to reduce that cost.