Choices by the Creek

Weigh the benefits and limits of a community resource plan

ENV.2 "Students will relate the impact of human activities on the environment, conservation activities, and efforts to maintain and restore ecosystems..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline two benefits of the proposed choices, circle two costs or limits, and number one action each for energy, waste, and creek protection. Use your marks to weigh the center's options.

A New Center Beside Willow Creek

1. At a town meeting, residents consider how to power a new recreation center beside Willow Creek. Natural gas can supply electricity on demand, but it is a nonrenewable fossil fuel. Burning it releases carbon dioxide, and drilling can disturb land. Solar panels use sunlight, a renewable energy source, and generate electricity without direct air pollution. Yet their output falls at night and in cloudy weather, so the center would need storage or backup power. Building panels and batteries also requires mined minerals. Neither option has zero environmental cost, but their costs occur in different places and at different times.

2. The center will also host weekend markets. Food scraps are biodegradable, but buried scraps may break down without oxygen and release methane, a potent greenhouse gas. Composting suitable scraps with oxygen can produce a soil amendment instead. Plastic drink bottles break down very slowly in landfills, taking up space for a long time. Recycling suitable bottles reduces demand for new raw materials, although collection and processing use energy and cost money. Covered trash bins and collection points kept away from storm drains can prevent litter from washing into Willow Creek. Any plan must account for both waste and the work of managing it.

3. After heavy rain, runoff from paved parking spaces can carry oil and sediment into Willow Creek. A planted strip between the lot and the creek could slow runoff and trap some sediment, but it needs space and maintenance and cannot remove every pollutant. Residents could test creek water upstream and downstream of the center for turbidity, a measure of cloudiness, before and after storms. Higher downstream turbidity after rain might suggest runoff is affecting the creek, but it would not prove the center is the only source. Decisions about power, waste, and runoff should weigh benefits, limits, and evidence together.

2 ANSWER WITH EVIDENCE

Use the passage

1. Compare natural gas and solar power as choices for the center. Give one advantage and one environmental cost or limit of each.

2. Why could burying food scraps and burying plastic bottles cause different problems?

3. How could recycling suitable plastic bottles conserve resources, and what does recycling require?

4. If turbidity rises downstream after a storm, what might residents conclude, and what could they not conclude?

3 YOUR TURN

Your own words

Write a four- or five-sentence recommendation for the center's first year. Choose an energy approach, a waste action, and a way to protect the creek, then explain two costs or limits your plan must address.

Choices by the Creek

PART 1 · READ AND MARK

Underline two benefits of the proposed choices, circle two costs or limits, and number one action each for energy, waste, and creek protection. Use your marks to weigh the center's options. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Compare natural gas and solar power as choices for the center. Give one advantage and one environmental cost or limit of each.	**Natural gas supplies electricity on demand, but burning it releases carbon dioxide. Solar power produces electricity without direct air pollution, but its output drops at night and in cloudy weather.**
2	Why could burying food scraps and burying plastic bottles cause different problems?	**Buried food scraps can release methane as they break down without oxygen. Plastic bottles break down very slowly and occupy landfill space for a long time.**
3	How could recycling suitable plastic bottles conserve resources, and what does recycling require?	**Recycling reduces demand for new raw materials, but collection and processing use energy and cost money.**
4	If turbidity rises downstream after a storm, what might residents conclude, and what could they not conclude?	**Runoff may be affecting the creek. The result alone cannot prove that the center is the only source.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

I recommend solar panels for the center because they generate electricity without direct air pollution. The center will still need backup power or storage for nights and cloudy days. At weekend markets, it should recycle suitable plastic bottles to reduce demand for new raw materials, even though collection and processing use energy and cost money. A planted strip could slow parking-lot runoff before it reaches Willow Creek. The town would need to maintain the strip because it cannot remove every pollutant.

Accept other passage-supported choices and tradeoffs. For the recommendation, look for a connected plan covering energy, waste, and creek protection, with two accurate costs or limits.