Rain Takes a Detour

Trace how a rain garden changes the path of street runoff.

RI.7.10 "By the end of the year, read and comprehend informational texts, including history/social studies, science, and technical texts, and literary nonfiction in the grades 6–8 text complexity band proficiently..."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline the sentences that trace water through the rain garden. Circle the sentences that explain when water bypasses the garden's soil.

Where Does the Street Water Go?

1. After a hard rain, water races across the paved streets of a city neighborhood. Along one block, a shallow planted strip called a rain garden sits below the curb. A narrow opening lets street runoff flow into it instead of rushing straight into a storm drain. Runoff can carry bits of tire rubber, soil, and other pollutants picked up from pavement. The garden does not make that pollution disappear. Its purpose is to slow the water and keep some of what it carries out of local streams.

2. When water enters the garden, plants and a layer of mulch slow its movement. Some particles settle out, while soil traps others as water seeps downward. Plant roots take up some of the water, and some water sinks deeper into the ground. Beneath this garden, a perforated pipe called an underdrain collects water that does not soak into the deeper soil. The pipe carries that water to the storm drain after it has passed through the garden's soil. This design reduces runoff, but it cannot remove every pollutant.

3. Even a well-built garden needs care. Fallen leaves and litter can clog the curb opening. If that opening is blocked, street water passes the garden and flows into the nearby storm drain without moving through the garden's soil. Workers clear the opening and replace mulch when it becomes packed with sediment. During a heavy storm, water can also spill over the garden's edge, flow along the street, and enter the storm drain when the soil cannot absorb it fast enough. The garden works best as one part of a drainage system, not as a perfect filter.

2 ANSWER WITH EVIDENCE

Use the passage

1. Trace two possible paths for water after it enters the rain garden. How do those paths differ?

2. Why might water leaving through the underdrain carry fewer particles than water entering the garden?

3. How can a heavy storm change the route of water that enters the garden, even if the curb opening is clear?

4. A neighbor says, “Water reaches the storm drain either way, so a blocked curb opening makes no difference.” Use one detail about blocked runoff and one about the underdrain to explain why this is wrong.

3 YOUR TURN

Your own words

The city is deciding whether to replace the rain garden with a paved parking space. Write a 4 to 5 sentence recommendation that uses a detail from each paragraph and acknowledges one limit of the garden.

ANSWER KEY

Rain Takes a Detour

GRADE 7 · RI.7.10

PART 1 · READ AND MARK

Underline the sentences that trace water through the rain garden. Circle the sentences that explain when water bypasses the garden's soil. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Trace two possible paths for water after it enters the rain garden. How do those paths differ?	**Some water sinks deeper into the ground. Water that does not soak in that deeply can pass through the garden's soil, enter the underdrain, and reach the storm drain.**
2	Why might water leaving through the underdrain carry fewer particles than water entering the garden?	**Mulch and plants slow the water, allowing some particles to settle, and the soil traps others before water reaches the underdrain.**
3	How can a heavy storm change the route of water that enters the garden, even if the curb opening is clear?	**If the soil cannot absorb water fast enough, water can spill over the garden's edge, flow along the street, and enter the storm drain.**
4	A neighbor says, "Water reaches the storm drain either way, so a blocked curb opening makes no difference." Use one detail about blocked runoff and one about the underdrain to explain why this is wrong.	**When the opening is blocked, runoff goes straight to the nearby storm drain without passing through the garden's soil. Water in the underdrain reaches the storm drain only after passing through that soil.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Keep the rain garden rather than pave it for a parking space. Street runoff carries pollutants that could otherwise move toward local streams. In the garden, mulch and soil slow the water and trap some particles before an underdrain carries water to the storm drain. The garden is not a perfect filter, and heavy storms can send water over its edge. Still, clearing leaves from the curb opening lets more street water pass through the soil instead of bypassing it.

Accept different wording that accurately distinguishes water passing through the soil from water bypassing it. For the recommendation, look for a supported position, a detail from each paragraph, and a correctly stated limitation.