Where Rain Goes

Trace a stormwater solution and test its limits

11-12.RST.2.a "Analyze and evaluate the text's development of a complex process, phenomenon, or concept."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline each stage that changes the runoff's path or contents, number the stages in order, and circle conditions that could interrupt or bypass them.

What a Rain Garden Can Do

1 After a hard rain, water rushes across a school parking lot, carrying grit and oil toward a storm drain. In many cities, that drain sends runoff to a stream with little or no treatment. A rain garden offers another route: a shallow planted basin beside the pavement receives water through a curb opening. Its purpose is not to make rain disappear instantly. By holding runoff near where it falls, the basin can slow the surge entering a drain and give water time to move through soil. That change in timing matters most when many paved surfaces shed water at once.

2 As runoff enters the basin, spreading water loses speed, so some heavy particles settle on the surface. Water that seeps into the soil passes through spaces between grains, where additional particles can be trapped. Roots help keep those spaces open, while plants take up some dissolved nutrients. These steps are related but not identical: settling happens before water enters the soil, and uptake depends on living plants. If the soil drains slowly or a storm delivers water faster than it can soak in, the basin fills. A designed overflow then carries excess water to a drain instead of letting it flood nearby pavement.

3 This sequence explains why a rain garden can reduce some runoff and pollutants, but it also exposes a limit. Road salt dissolves in water, so the settling of heavy particles does not remove it, and a garden may not retain it reliably. A clogged soil surface or a frozen basin can also reduce infiltration. The overflow protects nearby areas from flooding, yet water using that shortcut bypasses much of the soil's filtering action. To judge whether a particular garden works, a reader would need information the process alone cannot supply, such as soil infiltration rates and how often storms exceed the basin's capacity.

2 ANSWER WITH EVIDENCE

Use the passage

1. Why does the passage begin with runoff from pavement before introducing the rain garden? How does that order help explain the garden's purpose?

2. How does the passage distinguish settling from plant uptake? Why does that distinction matter to its explanation of pollutant removal?

3. How does the explanation of the overflow complicate the claim that a rain garden can reduce pollutants?

4. How does the road salt example test the earlier explanation of filtering? What limit does it reveal?

3 YOUR TURN

Your own words

A school has a paved courtyard with one low corner and compacted soil. Write five or six sentences explaining whether this passage alone justifies installing a rain garden there. Trace the proposed water path, identify where compacted soil could disrupt it, and name one site measurement needed before deciding.

ANSWER KEY

Where Rain Goes

HIGH SCHOOL · 11-12.RST.2.a

PART 1 · READ AND MARK

Underline each stage that changes the runoff's path or contents, number the stages in order, and circle conditions that could interrupt or bypass them. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Why does the passage begin with runoff from pavement before introducing the rain garden? How does that order help explain the garden's purpose?	**The pavement example shows water carrying pollutants toward a drain that may send it to a stream untreated. Introducing the garden afterward makes its alternative route and slower flow meaningful.**
2	How does the passage distinguish settling from plant uptake? Why does that distinction matter to its explanation of pollutant removal?	**Heavy particles can settle as water slows, before it enters the soil. Plant uptake removes some dissolved nutrients and depends on living plants, so the two steps affect different materials under different conditions.**
3	How does the explanation of the overflow complicate the claim that a rain garden can reduce pollutants?	**The overflow prevents nearby flooding when the basin fills, but water that takes this route bypasses much of the soil's filtering action.**
4	How does the road salt example test the earlier explanation of filtering? What limit does it reveal?	**Earlier, the passage explains that heavy particles can settle or become trapped in soil. Dissolved road salt does not settle like those particles, showing that the garden may not reliably retain every pollutant.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Rain from the courtyard could flow toward the low corner and enter a rain garden through an opening. If the garden's soil absorbs water, the basin could hold it briefly while sediment settles and some water seeps downward. Compacted soil might slow that seepage, leaving the basin full when another storm arrives. An overflow outlet could direct excess water to a drain, but the passage does not show whether this site can drain quickly enough. Before recommending construction, I would measure how fast water infiltrates the soil at that corner.

Accept different judgments about installing the garden if students trace a plausible water path, explain how compacted soil could affect infiltration, and identify a relevant site measurement. Do not require students to claim that the garden would remove all pollutants.