Downstream Effects

Trace how changes in one place affect another.

6-9.WG.2.16 "Explain how human-caused changes in the physical environment in one place can cause changes in another place such as irrigation, air pollution, water pollution, and deforestation."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Box each human action, circle the distant place it affects, and underline the words that show how the change reaches that place.

Changes Along the Green River

1. On a hot day, a farmer near the upper Green River opens a canal gate. River water flows into fields of corn instead of continuing downstream. Some of that water evaporates or is used by plants. By the time the river reaches a town farther away, less water is flowing past its docks. The town pumps river water for homes, so a dry summer can make it harder to meet everyone's needs. A choice made at one farm can change the amount of water available miles away.

2. Rain also links the farm to the lake. After a farmer spreads fertilizer on fields, a storm washes some of it into the Green River. The current carries the fertilizer past the town toward a lake downstream. In the lake, those added nutrients can feed a rapid growth of algae. As the algae die and break down, that process uses oxygen dissolved in the water. Fish in the lake may have less oxygen to breathe, even though no fertilizer was spread beside the lake.

3. Higher in the same watershed, workers clear a wooded slope for a new road. Tree roots once held the soil in place, and leaves slowed falling rain. Without that cover, storms can wash more loose soil into streams that join the Green River. The muddy water travels downstream to the town's water intake, where removing soil can make water treatment harder. Farther along, soil can settle over fish eggs on the lake bottom, limiting the oxygen that reaches them. One road project can affect people and wildlife many miles away.

2 ANSWER WITH EVIDENCE

Use the passage

1. How can opening the canal gate near the farm affect homes in the town downstream?

2. How can fertilizer spread on the farm affect fish in the distant lake?

3. Why can clearing trees for a road make the town's water treatment harder?

4. How can the road project affect fish eggs in the lake, even though the road is far away?

3 YOUR TURN

Your own words

Imagine a factory releases fine particles into the air outside a town. Write four sentences explaining how this could affect people in a neighborhood downwind, including how the particles move between the two places.

ANSWER KEY

Downstream Effects

GRADES 6-9 · 6-9.WG.2.16

PART 1 · READ AND MARK

Box each human action, circle the distant place it affects, and underline the words that show how the change reaches that place. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	How can opening the canal gate near the farm affect homes in the town downstream?	**The canal diverts river water into fields. With less water flowing downstream, the town may have a harder time pumping enough water for homes.**
2	How can fertilizer spread on the farm affect fish in the distant lake?	**A storm washes fertilizer into the river, which carries it to the lake. The nutrients feed algae, and the algae's breakdown uses oxygen that fish need.**
3	Why can clearing trees for a road make the town's water treatment harder?	**Without tree cover and roots, storms wash more soil into streams. The muddy water reaches the town's intake, where the soil must be removed.**
4	How can the road project affect fish eggs in the lake, even though the road is far away?	**Soil washed from the cleared slope travels through streams and the river to the lake. It can settle over fish eggs and limit the oxygen reaching them.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

A factory releases fine particles into the air outside a town. Wind carries the particles to a neighborhood downwind. The particles make the air there more polluted, even though the neighborhood has no factory. Breathing the particles can worsen asthma for some residents.

Accept responses that trace a human action through a moving part of the environment to an effect in another place. For Part 3, look for wind carrying particles from the factory to the neighborhood and a plausible effect on people there.