

Water Connections

Trace how human choices affect watersheds and ocean systems.

7.11 "Earth and space. The student understands how human activity can impact the hydrosphere. The student is expected to: analyze the beneficial and harmful influences of human activity on groundwater and surface water in a watershed..."

NAME _____

DATE _____

1 READ AND MARK _____ Read it twice

YOUR JOB Underline each human action that helps water systems and circle each action that harms them. Next to each marked action, write G for groundwater, S for surface water, or O for ocean systems to show what it affects.

From Hilltops to the Ocean

- ① A watershed is an area of land where rain and melting snow drain to the same stream, lake, or bay. Water flowing over pavement becomes surface water in gutters and creeks. Some water soaks through soil and rock to become groundwater, which can feed springs and wells. Because water moves through the watershed, an action uphill can affect people and habitats downstream. A parking lot, farm, neighborhood, and forest can all be connected by the same moving water.
- ② Human choices can protect freshwater or pollute it. Planting grass strips beside fields slows runoff and holds soil, so less sediment and fertilizer reach a creek. Fixing leaking sewer pipes keeps waste out of groundwater. In contrast, excess fertilizer washed from lawns can cause algal blooms in ponds. Oil from roads can enter storm drains, and some household chemicals can seep through soil. These pollutants may make water unsafe for organisms or people who use wells.
- ③ People also depend on ocean systems for seafood, transportation, recreation, and oxygen produced by ocean phytoplankton. Coastal wetlands and coral reefs provide habitat and can lessen wave energy near shore. Human actions can harm these systems. Plastic litter can injure or be eaten by marine animals. Burning fossil fuels adds carbon dioxide to the atmosphere; the ocean absorbs some of it, which increases ocean acidity. Overfishing can reduce fish populations faster than they can reproduce. Reducing plastic use and following fishing limits can help ocean ecosystems recover.

2 ANSWER WITH EVIDENCE _____ Use the passage

1 Why can an action uphill affect people and habitats downstream in a watershed?

2 Compare grass strips beside fields with excess fertilizer washed from lawns. How does each influence surface water?

3 Identify one action that protects groundwater and one action that can harm groundwater. Explain each effect.

4 Name one way people depend on ocean systems and one human activity that harms an ocean system. State the harm.

3 YOUR TURN _____ Your own words

Create a three-action water plan using actions not named in the reading. Include one action for surface water, one for groundwater, and one for ocean systems. For each, tell whether it is beneficial or harmful and explain its effect.

YOUR ACTION	BENEFICIAL OR HARMFUL?	WATER SYSTEM AND EFFECT

PART 1 • READ AND MARK

Underline each human action that helps water systems and circle each action that harms them. Next to each marked action, write G for groundwater, S for surface water, or O for ocean systems to show what it affects. Accept any marking that follows this job and points at the right text.

PART 2 • ANSWERS

#	QUESTION	ANSWER
1	Why can an action uphill affect people and habitats downstream in a watershed?	Water moves through a watershed toward the same stream, lake, or bay, carrying effects downstream.
2	Compare grass strips beside fields with excess fertilizer washed from lawns. How does each influence surface water?	Grass strips slow runoff and hold soil, so less sediment and fertilizer enter a creek. Excess lawn fertilizer can wash into ponds and cause algal blooms.
3	Identify one action that protects groundwater and one action that can harm groundwater. Explain each effect.	Fixing leaking sewer pipes protects groundwater by keeping waste out. Household chemicals can harm groundwater when they seep through soil.
4	Name one way people depend on ocean systems and one human activity that harms an ocean system. State the harm.	People depend on the ocean for seafood, transportation, recreation, or oxygen from phytoplankton. Plastic litter can injure marine animals or be eaten by them; burning fossil fuels increases ocean acidity; overfishing reduces fish populations.

PART 3 • YOUR TURN (SAMPLE ANSWER)

YOUR ACTION	BENEFICIAL OR HARMFUL?	WATER SYSTEM AND EFFECT
Install a rain garden near a driveway	Beneficial	Surface water: It absorbs runoff before it carries pollutants to a creek.
Take used motor oil to a collection center	Beneficial	Groundwater: It prevents oil from soaking into soil and reaching groundwater.
Repair a leaking boat fuel line	Beneficial	Ocean systems: It keeps fuel from polluting marine water and harming organisms.

Accept equivalent cause-and-effect explanations that correctly connect a human action to groundwater, surface water, or an ocean system. For the water plan, students should include all three required systems and actions not stated in the passage.