Rain Garden Links

Model how Earth's systems work together to support life.

5.12 "Use a model to represent how any two of Earth's systems (atmosphere, biosphere, geosphere, and hydrosphere) interact and support life."

NAME _____ DATE _____

1 READ AND MARK

Read it twice

YOUR JOB Underline one water movement and one gas movement, circle the two system names linked to each, and write matching numbers beside each movement and its system pair.

After the Rain

1. After a storm, a rain garden beside a school path fills with runoff. The garden is a shallow dip planted with grasses and flowers. Rainwater is part of the hydrosphere. Soil and small stones belong to the geosphere. In a model, an arrow from rainwater to soil can show water soaking into spaces between soil grains instead of rushing across the path.

2. The garden plants belong to the biosphere, the system of living things. Their roots take in water held in the soil. Roots also hold soil in place when more rain falls. A model could show water moving from wet soil to roots, then show roots helping the soil stay put. With enough water, the plants grow leaves and flowers that feed visiting bees.

3. The atmosphere is the air around the garden. Plants take in carbon dioxide from the air and release oxygen into it. Bees and other animals need oxygen from the air to live. On a sunny afternoon, a bee visits the flowers for nectar while the plants continue exchanging gases with the air. Arrows in a model can show these two directions of movement.

2 ANSWER WITH EVIDENCE

Use the passage

1. Write an arrow model showing how the hydrosphere interacts with the geosphere after a storm. What does your arrow mean?

2. Write two labeled arrows to show how the geosphere and biosphere help each other in the rain garden.

3. What arrow would show a plant's effect on the atmosphere? Explain how that effect supports a bee.

4. Suppose runoff rushes past the garden instead of soaking in. Which link between two systems would weaken first? How could this affect the plants?

3 YOUR TURN

Your own words

In a park, wind carries a dandelion seed to an open place where it can grow. Draw a model of how two Earth systems interact in this event. Label the systems, use an arrow to show what moves, and write one sentence explaining how the interaction supports life.

ANSWER KEY

Rain Garden Links

GRADE 5 · 5.12

PART 1 · READ AND MARK

Underline one water movement and one gas movement, circle the two system names linked to each, and write matching numbers beside each movement and its system pair. Accept any marking that follows this job and points at the right text.

PART 2 · ANSWERS

#	QUESTION	ANSWER
1	Write an arrow model showing how the hydrosphere interacts with the geosphere after a storm. What does your arrow mean?	**Rainwater (hydrosphere) → soil (geosphere). The arrow shows water soaking into spaces between soil grains.**
2	Write two labeled arrows to show how the geosphere and biosphere help each other in the rain garden.	**Wet soil (geosphere) → roots (biosphere): roots take in water held in the soil. Roots (biosphere) → soil (geosphere): roots hold soil in place.**
3	What arrow would show a plant's effect on the atmosphere? Explain how that effect supports a bee.	**Plant (biosphere) → air (atmosphere): the plant releases oxygen. Bees need oxygen to live.**
4	Suppose runoff rushes past the garden instead of soaking in. Which link between two systems would weaken first? How could this affect the plants?	**The hydrosphere-to-geosphere link would weaken because less water would soak into the soil. Roots would have less water to take in, so the plants might not grow as well.**

PART 3 · YOUR TURN (SAMPLE ANSWER)

Atmosphere (moving air) → Biosphere (dandelion seed). The wind moves the seed to a place where a new dandelion can grow.

Accept arrows or clearly described directions of movement. For the open task, the model must identify the atmosphere and biosphere, show wind moving the seed, and explain how that movement can help a new plant grow.