Biosphere vs. Geosphere

Sample type:	MC
Subject:	Earth Space Science
Learner:	5th Grade
Standards:	NGSS: 5ESS2-1 Develop a model using an example to describe ways the geosphere, biosphere, hydrosphere, and/or atmosphere interact. SEP: Developing and Using Models DCI: ESS2.A: Earth Materials and Systems
DOK:	3
Evidence of Achievement	Students use their knowledge of how spheres interact to describe a model that they can create with given materials to show an interaction between the biosphere and geosphere.

Body of sample

A group of students has planted and tended a butterfly garden on the edge of a school playground. They used seeds donated by a garden store and planted them in the garden. They watered the garden each morning that it didn't rain, and they pulled out any weeds that grew. After the flowers bloomed, they cut some to have in the classroom. Then they saw butterflies landing on the remaining flowers and eating nectar.

Which student's model represents a biosphere/geosphere interaction in the butterfly garden?
A. Student 1 plants a seed in a cup of soil.
B. Student 2 cuts and bends pipe cleaners to make a bouquet.
C. Student 3 uses a watering can to pour water on a cup of soil.
D. Student 4 uses a straw to suck sugar water out of a flower-shaped bowl.

Distractor Rationales

A Correct Answer. Student 1 plants the seedling in soil, modeling an interaction between the biosphere (plant) and the geosphere (soil).
B Student 2 has not modeled a sphere interaction because this model represents activity only in the biosphere.
C Student 3 has not modeled a sphere interaction because both components represent the geosphere.
D Student 4 has not modeled a sphere interaction because both components represent the biosphere.

Three-Dimensional Coach

The Earth is a system made up of four spheres that interact.

These spheres are systems too! Break down the name of each sphere into parts to determine what parts make up each of these systems.

Sources: NA