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Science Learning Packet

Grade 7:

Matter and Energy in Ecosystems,

Lesson 8

science learning activities for SPS students during the COVID-19 school closure.

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Due to the COVID-19 closure, teachers were asked to provide packets of home activities. This is not intended to take the place of regular classroom instruction but will help supplement student learning and provide opportunities for student learning while they are absent from school. Assignments are not required or graded. Because of the unprecedented nature of this health crisis and the District's swift closure, some home activities may not be accessible.

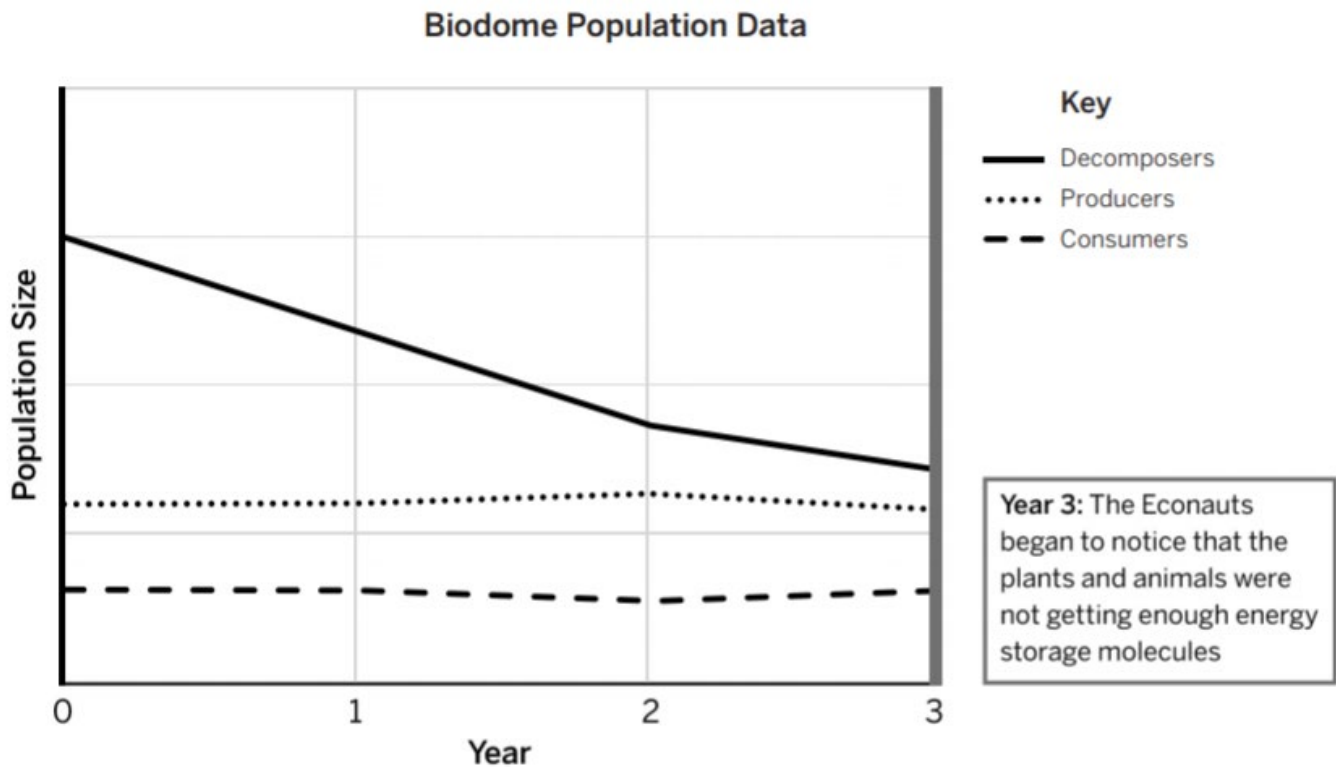
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Matter and Energy: Lesson 2.3

Student ecologists, it is almost time to write the next part of your explanation to the Econauts. First, however, you'll need to review some new data about the biodome that Dr. Corry sent. Using the data and some evidence from the Sim, you'll be able to explain to the Econauts why the carbon dioxide in the air of the biodome decreased. Let's get to work!

Entry:

Based on your recent work, Dr. Corry sent you a graph showing the populations of producers, consumers, and decomposers in the biodome. Examine this graph and think about what it shows you. Then, answer the questions below.



Can this graph help you explain why the amount of carbon dioxide in the air of the biodome decreased?

- Yes
- No

Explain your thinking using evidence from the graph:

Key Concept

As organisms _____ energy during the process of _____
_____, carbon dioxide is produced from the carbon in _____
_____. This process moves carbon
from _____ to _____ matter.

From the graph, we can see that the decomposers decreased over time, but the producers and consumers did not. They play a part in releasing carbon dioxide during cellular respiration and could have affected the amount of carbon dioxide in the air.

Claim: A decrease in decomposers led to a decrease in carbon dioxide in the air (abiotic matter) of the biodome.

We will use the digital model to test our claim:

1. Open the Matter and Energy Sim and run it with default settings for 20 time units.
2. After 20-time units, pause the Sim. **Use the KILL button** to remove all decomposers. Press PLAY.
3. Open the graph and observe how the decrease in decomposers affects the ecosystem. **Be sure CELLULAR RESPIRATION and CARBON DIOXIDE are selected** so you can observe these graph lines.

Observations:

I think the evidence I collected supports / refutes the claim.

I think this because _____

