

Name \_\_\_\_\_

Date \_\_\_\_\_



## *It's a Small World After All!* *(Pond Microcosms)* *Proficiency Assessment*



**Directions:** Use the following paragraph to answer questions 1-3.

Toussaint and Myra decide to investigate the effect of radiant energy (sunlight) on plant growth. Myra places two microcosms near a sunny window for two weeks. During this time, she notices an increase in the populations of producers, especially algae. Toussaint places his two pond microcosms in a dark closet for two weeks. During this time, he notices a decrease in the populations of producers in his microcosms.

- 1) A variable is something that can change during an experiment. Controlled variables are kept the same during an experiment to make the experiment fair or scientific. Which of the following is a variable that Myra and Toussaint *did not* control during their experiment?
- a) the amount of water in each microcosm
  - b) the amount of radiant energy coming from the sun
  - c) the growth of producers in each microcosm
  - d) the amount of time each microcosm spent in its location
- 2-3) What can Myra and Toussaint conclude from their experiment?
- a) Producers use radiant energy to grow and to convert matter in the microcosm into additional producers.
  - b) Radiant energy neither helped nor harmed the growth of producer populations.
  - c) Producers need prolonged periods of darkness in order to grow and to convert matter into additional producers.
  - d) No conclusions can be drawn from this experiment.

Explain \_\_\_\_\_

\_\_\_\_\_

- 4-5) Pollution is any waste product that damages an ecosystem. Which of the following is *not* a form of pollution?
- a) smog from automobile exhaust that contributes to acid rain
  - b) chemical fertilizer runoff at a farm that causes algae populations to bloom in a nearby pond
  - c) waste products left near a stream by a deer that cause an increase in flies in the area
  - d) rice added to a pond microcosm that causes consumer populations in the area to decrease

Explain \_\_\_\_\_

\_\_\_\_\_

Name \_\_\_\_\_

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*It's a Small World After All!*  
*(Pond Microcosms)*  
**Proficiency Assessment**  
*(continued)*



**Directions:** Multiple choice.

6-7) On agricultural land, farmers often spray fertilizers on the soil to produce healthier crops. Which of the following could be a significant *negative* result on the environment from the spraying of chemical fertilizers?

- a) Spraying chemical fertilizers will cause plants to produce crops earlier in the year.
- b) Some areas of soil may receive greater amounts of chemical fertilizer than others.
- c) Chemical fertilizer will cycle with rainfall into nearby ponds and streams, affecting wildlife.
- d) Farm equipment used to spray chemical fertilizer will compact the soil, lessening its ability to absorb moisture.

**Directions:** Extended response.

8-10) Write a letter to your parents on a separate sheet of paper that explains the two most important things you learned from the *It's a Small World After All!* inquiry. Use three or more of the choices from the Word Bank in your response.

**Word Bank**

biodiversity   variable   pollution   controlled investigation   change

**Checklist**

*I will earn my best score if:*

- My letter tells two important things I learned.
- My letter gives details about each important thing.
- I use three or more words from the Word Bank.
- I use the form for a letter with a greeting, a body, and a closing.
- I use words that make my meaning clear. I do not use the same words over and over.
- I try to spell the words correctly.
- My sentences and proper names begin with a capital letter.
- My sentences end with a period, an exclamation mark, or a question mark.