ENERGY TRANSFER

VOCABULARY REVIEW Distinguish between the terms in each of the following groups of terms.

1. producer, consumer _____

_____

2. gross primary productivity, net primary productivity _____

_____

_____

3. food chain, food web _____

_____

MULTIPLE CHOICE Write the correct letter in the blank.

_____ 1. The term *biomass* refers to the

    a. weight of the biosphere.
    b. volume of plants in a community.
    c. organic material in an ecosystem.
    d. amount of energy produced through chemosynthesis.

_____ 2. A detritivore is an organism that

    a. feeds on both producers and consumers.
    b. feeds on the "garbage" of an ecosystem.
    c. converts biomass into "garbage" in an ecosystem.
    d. produces carbohydrates by using energy from inorganic molecules.

_____ 3. An organism's position in the sequence of energy transfers in an ecosystem is known as its

    a. trophic level.
    b. energy level.
    c. net productivity.
    d. feeding location.

_____ 4. The percentage of energy transferred from one level to another in a food chain is usually

    a. greater than 90 percent.
    b. about 75 percent.
    c. about 50 percent.
    d. less than 20 percent.

_____ 5. Compared to the lowest trophic level, the highest trophic level contains

    a. more individuals.
    b. less energy.
    c. more producers.
    d. fewer carnivores.

SHORT ANSWER Answer the questions in the space provided.

1. Rank the following ecosystems in order of their net primary productivity, from lowest to highest: open ocean, tropical rain forest, desert, lake. _____
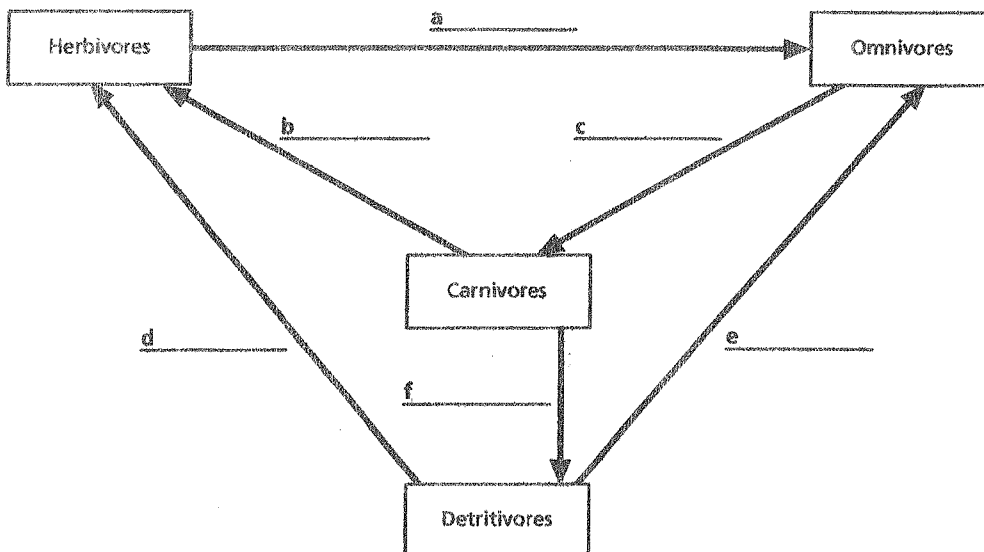
   _____

2. Why are producers the first trophic level to benefit from the activity of decomposers? _____

   _____

3. Give three reasons why energy transfer between trophic levels is not 100 percent. _____

   _____

   _____

4. Why are food chains short? _____

   _____

5. **Critical Thinking** What would happen to the energy flow through an ecosystem if the

   decomposers were eliminated? _____

   _____

   _____

STRUCTURES AND FUNCTIONS The diagram below shows part of a food web. Each arrow indicates energy passing from one member (the food) to another (the consumer). Only some of the indicated relationships are possible. Write yes in the spaces corresponding to the possible relationships and no in the spaces corresponding to the relationships that are not possible.