

## Multiple Choice Ecosystems Assessment Key

### 1. Critiquing the food web

The following answers indicate *understanding* of food webs:

The sun is missing.

The web shows only one of each animal instead of populations.

There are no decomposers.

Some of the organisms are tiny and can't be seen well. They are not shown here.

The arrows show energy transfer.

I would add more green plants.

I would add more primary consumers.

The following answers indicate *misunderstanding* of food webs:

The arrows are backwards.

It shows all of the kinds of roles in a food web.

It doesn't show a cycle of energy.

It has to have worms to decompose dead matter.

### 2. Here is what two students said. Which do you agree with **most**? "Energy moves through a food web in a pattern like..."

The following answer indicates *understanding* of food webs:

- a. a set of dominoes where the energy goes from the sun, to the green plants, then to the animals, and eventually is lost as heat energy."

The following answer indicates *misunderstanding* of food webs:

- b. a cycle where the energy goes from the sun to green plants, then to animals, and then goes into the soil and back into the green plants and to animals, and so on."

### 3. Six students told what happens to a tree in the forest **many years** after it dies. Which do you agree with **most**?

The following answer indicates a *high level* understanding:

- a. "Nothing would happen because the tree is dead."

The following answers indicate a *lower level* understanding:

- b. "The tree becomes soil."
- c. "An animal might move it."
- d. "It turns brown and the branches fall off."
- e. "The pieces of the tree disappear."
- f. "It turns into small pieces that fall into the soil."

4. Think about your answer for question 3. Why does it happen? Circle the **best answers**. (You can circle one or more answers.):

The following answers indicate a *high level* understanding:

- b. It gets eaten by worms and insects.
- d. The tree is eaten by tiny bacteria that are too small to see.

The following answers indicate a *lower level* understanding:

- a. The tree falls apart on its own.
- c. It might fall over but nothing happens, the tree is just there.
- e. Rotting makes the pieces of the tree disappear.
- f. Animals or people take it.

5. What if nothing ever happened to trees in the forest after they died? Which student do you think gave the **best** answer?

The following answer indicates the *highest level* understanding:

- c. Student 3- "There would be less matter for new life."

The following answers indicate *lower levels* of understanding:

- a. Student 1- "There would be a lot of dead trees and leaves everywhere."
- b. Student 2- "It wouldn't really make a difference."
- d. Student 4- "Worms would have less to eat."

6. If all of the green plants in an ecosystem died, what would happen in the years that followed? Which answer do you **agree with most**?

The following answer indicates the *highest level* understanding:

- b. None of the animals in the food web would have food.

The following answers indicate *lower levels* of understanding:

- a. The things that eat the green plants would have no food, but the things that don't eat green plants would have food.
- c. Decomposers would not be affected.
- d. The animals would be okay because the energy in the food web would be recycled and used again.

7. Which student do you agree with **most**?

The following answer indicates the *highest level* of understanding:

- b. Student 2- The owls get food from mice and the mouse population stays in balance.

The following answers indicate *lower levels* of understanding:

- a. Student 1- Mice are important to owls because they are food for them. Owls aren't important to mice.
- c. Student 3- Owls get food from mice, but the mouse dies. Mice help owls but owls kill mice.
- d. Student 4- Owls are important to mice but mice are not important to owls. If there are too many mice, there won't be enough food for them, so the owls keep the numbers of mice to a good size.

8. Which answers do you agree with? Circle the **best answers**. (You can circle one or more answers.):

The following answers indicate *higher levels* of understanding:

- b. "Balance and flux both have important roles in ecosystems."
- d. "Flux is a part of balance, so there are always both in the ecosystem."
- e. "Flux creates opportunities for different organisms in the ecosystem."
- f. "A lot of flux can make an ecosystem unstable."

The following answers indicate *lower levels* of understanding:

- a. "It is good for ecosystems to always be in balance. Animals can die if there is flux."
- c. "Ecosystems try to be in balance. It is the goal of the ecosystem."