# Ecosystems Preassessment

1. Your muscles are made of proteins, fats, and other materials that contain many carbon atoms. Think about where those carbon atoms came from.

Which of the following statements is true? Circle the letter of the correct answer.

a. ALL of the carbon atoms came into your body in food, OR

b. SOME of the carbon atoms were made by your muscles when your muscle cells grew and divided.

Circle the best choice to complete each of the statements about possible places where the carbon atoms in your muscles might have come from.

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| How many of the carbon atoms were once in the AIR? | All | Most | Some | None |
| How many of the carbon atoms were once in the PLANTS? | All | Most | Some | None |
| How many of the carbon atoms were once in the ANIMALS? | All | Most | Some | None |
| How many of the carbon atoms were once in the DECOMPOSERS? | All | Most | Some | None |

Explain your choices. How might the carbon atoms have gotten to your muscles?

2. Here is a simple food chain with one plant, one animal, and some decomposers:

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Grass** | is eaten by | **Rabbit** | Dies and is decomposed by | **Decomposing** **bacteria** |

Describe what happens to matter and energy in this food chain by filling in the following table:

|  |  |  |
| --- | --- | --- |
|  | ***Matter*** | ***Energy*** |
| **Similar matter and energy** | How are the materials in the grass, the rabbit, and the bacteria all alike? | How are the types of energy in the grass, the rabbit, and the bacteria all alike? |
| **Different matter and energy** | How are the materials in the grass, the rabbit, and the bacteria different form one another? | How are the types of energy in the grass, the rabbit, and the bacteria different from one another? |
| **Connections** | How are the materials in the grass, the rabbit, and the bacteria connected? | How is the energy in the grass, the rabbit, and the bacteria connected? |

3. A scientist started sorting materials into two groups. Here are the first materials that she put into each group:

|  |  |
| --- | --- |
| ***Group A:*** *wood, meat, mushrooms* | ***Group B:*** *Sand, water, limestone* |

a. Which group would you put these materials in?

Salt Group A Group B

Sugar Group A Group B

Fat Group A Group B

Carbon dioxide Group A Group B

Soil minerals that help plants grow Group A Group B

Leaves of a living tree Group A Group B

b. Explain how you decided. How are the materials in Group A different from the materials in Group B?

c. Is there a different way of grouping the materials that makes more sense to you?

YES NO

d. Explain your answer. How would you group the materials differently, or why do you like these groups?

4. A remote island in Lake Superior is uninhabited by humans. The primary mammal populations are white-tailed deer and wolves. The island is left undisturbed for many years. Select the best answer(s) below for what will happen to the average populations of the animals over time.

\_\_\_\_\_a. On average, there will be more deer than wolves.

\_\_\_\_\_b. On average, there will more wolves than deer

\_\_\_\_\_c. On average, the populations of each would be about equal.

\_\_\_\_\_d. The populations will fluctuate, with sometimes more deer, sometimes more wolves

\_\_\_\_\_e. None of the above.

Please explain your answer to what happens to the populations of deer and wolves.

5. Answer these true-false questions:

True False Carbon is a kind of atom.

True False Carbon is a kind of molecule.

True False There is carbon in the air.

True False There is carbon in pure water.

True False There is carbon in the soil.