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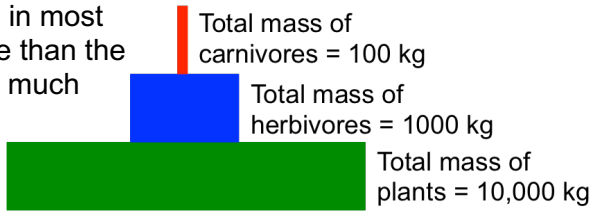
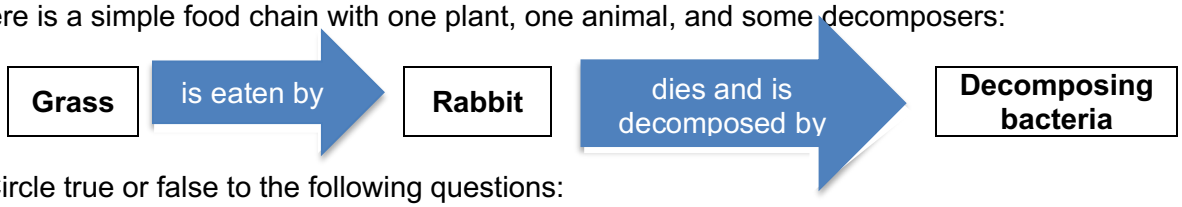
5.4 Ecosystems Unit Posttest

1. This graph shows a pattern that biologists have observed in most ecosystems on Earth. The total mass of plants is much more than the total mass of herbivores, and the total mass of herbivores is much more than the total mass of carnivores.



Why do you think that this is the case?

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



Circle true or false to the following questions:

True	False	The **molecules** in the rabbit came from the grass without changing.
True	False	The **atoms** in the rabbit came from the grass without changing.
True	False	The **energy** in the rabbit came from the grass without changing.
True	False	The bacteria recycle **molecules** from the dead rabbit back to the grass.
True	False	The bacteria recycle **atoms** from the dead rabbit back to the grass
True	False	The bacteria recycle **energy** from the dead rabbit back to the grass

Explain your answers: How do **molecules** move through the ecosystem that this food chain is part of?

Explain your answers: How do **atoms** move through the ecosystem that this food chain is part of?

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Explain your answers: How does **energy** move through the ecosystem that this food chain is part of?

3. In a forest ecosystem, how would you expect the amount of carbon dioxide in the air to change in the **winter**?

The amount of carbon dioxide in the forest air (choose one):

a. Would increase

b. Would decrease

c. Would stay about the same

Explain your answer. What would cause the amount of CO2 in the forest air to change during the winter?

4. In a forest ecosystem, how would you expect the amount of carbon dioxide in the air to change in the **summer**.

The amount of carbon dioxide in the forest air (choose one):

a. Would increase

b. Would decrease

c. Would stay about the same

Explain your answer. What would cause the amount of CO_2 in the forest air to change during the summer?

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5. Think about what might happen to carbon atoms and to energy in a forest. Decide whether each of the following pathways is possible or not:

Carbon atoms could leave the forest after they have been used by plants or animals.	Possible	Impossible
After carbon atoms have been used by plants or animals they could be recycled and used again by plants or animals.	Possible	Impossible
Energy could leave the forest after it has been used by plants or animals.	Possible	Impossible
After energy has been used by plants or animals it could be recycled and used again by plants or animals.	Possible	Impossible

Explain your thinking. How are the possible pathways for carbon atoms and for energy alike and different?

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6. 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. Circle the best choice to complete the statement about what will happen to the average populations of the animals over time.

On average, the populations of deer and wolves will fluctuate, but:

a. there will be more deer than wolves.

b. there will more wolves than deer

c. the populations of each would be about equal.

d. sometimes there will be more deer and sometimes there will be more wolves.

e. None of the above.

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

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