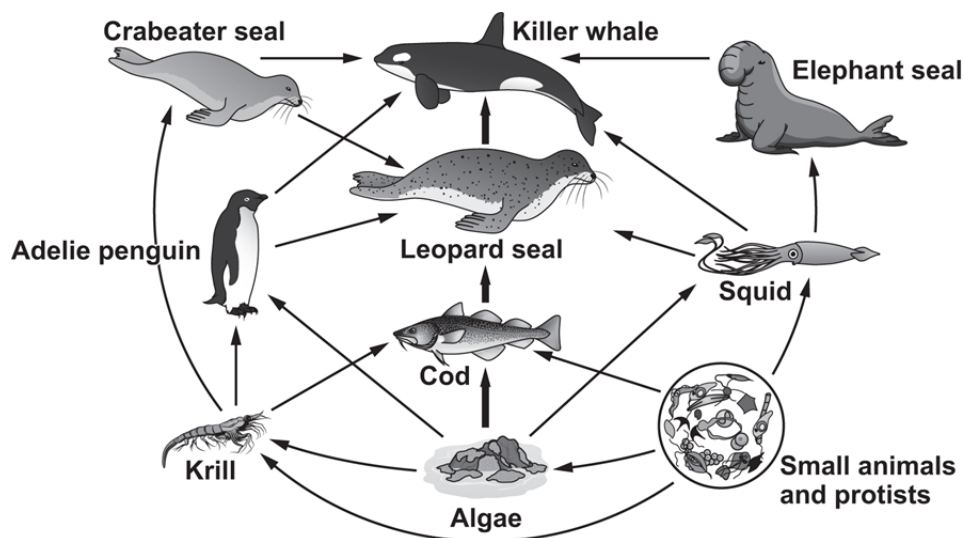


**Quiz: Modeling Matter and Energy in Ecosystems**

Read each question. Circle the letter of the correct answer.

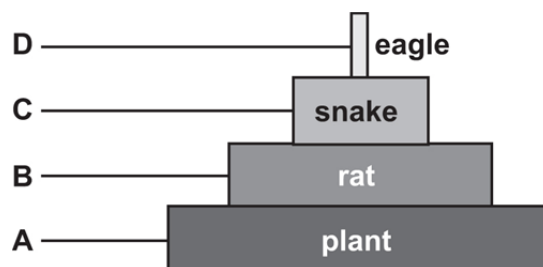
1. Each level in a food chain contains less energy than the one below it because some energy is \_\_\_\_\_.
  - A. lost as heat
  - B. added to the system
  - C. consumed by carnivores
  - D. incorporated into biomass
2. Which description fits with the term *biomass*? Choose the correct answer.
  - A. the producer-to-consumer ratio in an ecosystem
  - B. the mass of all living things on Earth
  - C. the unused material excreted as waste in an ecosystem
  - D. the mass of the living and dead organisms in a given area
3. Which provides most of the energy in ecosystems?
  - A. carnivores
  - B. producers
  - C. generalists
  - D. keystone species
4. From which source do almost all producers obtain their energy?
  - A. sunlight
  - B. herbivores
  - C. decaying matter
  - D. hydrothermal pools
5. Which of these can be both primary and secondary consumers?
  - A. herbivores
  - B. carnivores
  - C. omnivores
  - D. detritivores
6. Which does a pyramid of numbers display?
  - A. a chain of feeding relationships
  - B. a network of feeding relationships
  - C. the amount of biomass in an ecosystem
  - D. the number of organisms in an ecosystem
7. Leopard seals eat only meat. What are leopard seals?
  - A. carnivores
  - B. herbivores
  - C. omnivores
  - D. producers

8. The diagram shows an oceanic food web.



At what trophic level do the killer whales primarily feed?

- A. the third trophic level only
  - B. the second trophic level only
  - C. the third and fourth trophic levels
  - D. the first and second trophic levels
9. Refer to the illustration.



How much energy is available to the organisms in level C?

- A. all of the energy in level A plus the energy in level B
  - B. all of the energy in level A minus the energy in level B
  - C. 5–20 percent of the energy in level B
  - D. 90 percent of the energy in level B
10. When a giraffe eats leaves from a tree, it incorporates the leaves into its own \_\_\_\_\_.
- A. niche
  - B. biome
  - C. biomass
  - D. community

**Read each statement. Write your answer on the lines.**

- 11.** List two consumers. Then explain why they are considered consumers. Enter your answer in the space provided.

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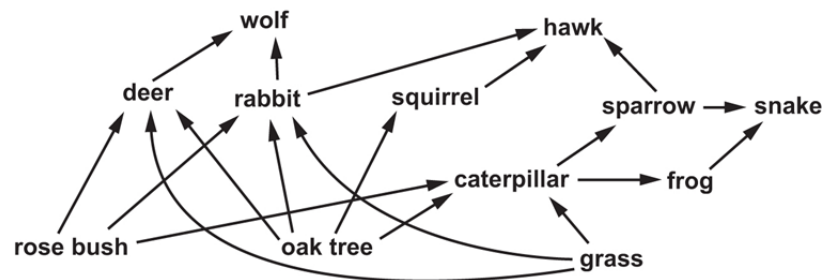
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- 12.** The diagram shows a forest food web.

**Food Web Diagram**



Identify one food chain in the diagram.

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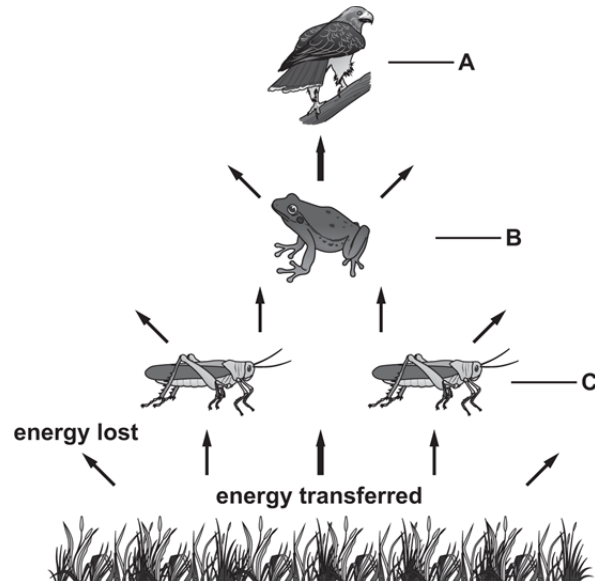
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13. The diagram shows the movement of energy through organisms.



How does this type of diagram differ from a biomass pyramid?

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14. Why do the energy pyramids of food webs have a triangular shape?

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15. Why are decomposers necessary for the continuation of life on Earth?

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