

## Section 2.1

# Energy Flow in Ecosystems

## Check Your Understanding

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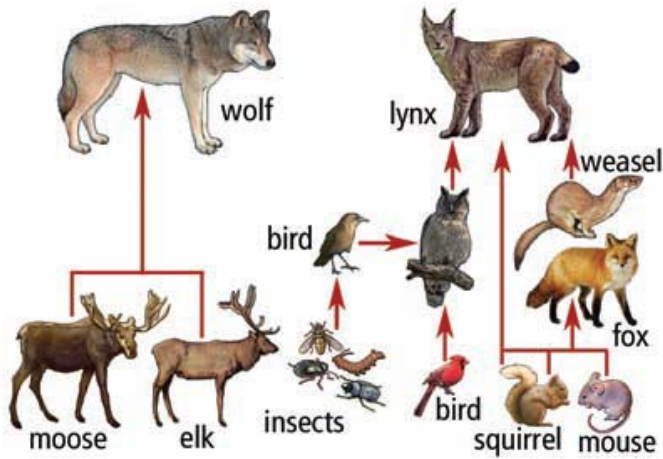
### Checking Concepts

1. How do fungi decompose leaves?
2. What is decomposition?
3. Explain why plants are called primary producers.
4. Put the following organisms in order from lowest trophic level to highest trophic level.  
(a) snake (c) grass (b) eagle (d) mouse
5. (a) Are herbivores primary consumers? Explain why or why not.  
  
(b) Are carnivores primary consumers? Explain why or why not.  
  
(c) What is an omnivore?
6. Give an example of each of the following.  
(a) a secondary consumer  
  
(b) a tertiary consumer  
  
(c) an omnivore

7. How much energy is lost from producers to secondary consumers?

8. In the diagram below, identify each of the following.

- (a) producers
- (b) primary consumers
- (c) secondary consumers
- (d) tertiary consumers



9. Give an example of a food chain in a pond ecosystem.

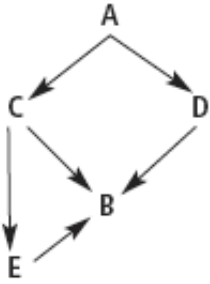
10. What is the main difference between food chains and food webs?

11. Do detritivores return energy to an ecosystem? Explain.

## Understanding Key Ideas

12. In the following diagram of a food web, identify which letter represents a species that:

- (a) is the producer
- (b) has the greatest biomass
- (c) has the smallest biomass
- (d) could be a caterpillar
- (e) could be a decomposer



13. If there are 1 000 000 kcal/m<sup>2</sup> in the producer level of a food pyramid, how many kilocalories will be incorporated into the bodies of the following, if there is a 90 percent energy loss at each level?

- (a) primary consumers
- (b) secondary consumers
- (c) tertiary consumers

14. (a) Describe a four-organism food chain that might be found in a desert community.

- (b) Identify the trophic level of each organism.

15. Explain why you do not gain weight every time you eat.

16. Explain why there cannot be an unlimited number of trophic levels.

## ***Pause and Reflect***

What would be the impact on life on Earth if less and less solar energy were able to reach Earth's surface?