

What Do You Remember?

1. What are the “ingredients” of photosynthesis? K/U
2. Create a food chain that has four organisms. K/U
3. What would happen to ecosystems if dead organisms did not decompose? K/U
4. Decomposers play an important role in which matter cycle? K/U
5. Give two examples of each of the following: producer, herbivore, carnivore, omnivore, scavenger, detritivore, and decomposer. Organize your answers in a table. K/U C
6. Explain the difference between a producer and a consumer. K/U
7. For each of the following, explain the difference between the two terms: K/U
 - (a) food chain, food web
 - (b) carnivore, scavenger
 - (c) detritivore, decomposer
 - (d) primary consumer, secondary consumer
8. If you found bald eagles, algae, mosquito larvae, and salmon within the same ecosystem, what role would each organism most likely play? K/U
9. Explain what is meant by “Energy flows and matter cycles.” K/U
10. Explain why each level in a pyramid of numbers is smaller than the one below it. K/U
11. List four different roles organisms play within an ecosystem. Include examples. K/U
12. Why are long food chains less effective in transferring energy than short food chains? Explain your answer using a diagram of an energy pyramid. K/U

13. Based on Figure 1, use your own words to explain what is happening at each arrow. K/U

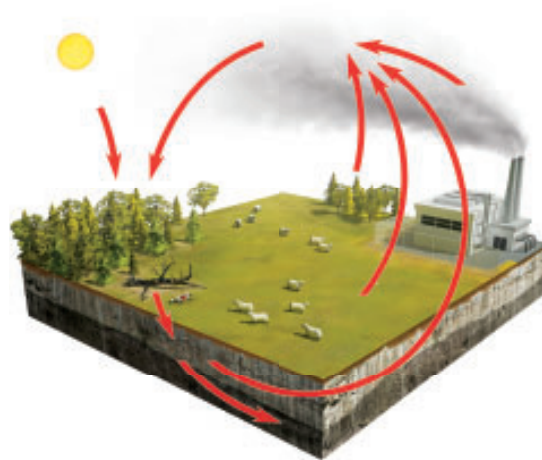


Figure 1

What Do You Understand?

14. Some people promote vegetarianism as a way of helping the environment.
 - (a) Explain how vegetarianism can help the environment in terms of what you have learned in this chapter.
 - (b) Do you agree or disagree that vegetarianism is a good way to help the environment? Explain. A
15. A rotting log is an ecosystem. Create a food web for a rotting log that may be found in your local area. A
16. Composting has become popular in urban communities. What are the benefits of putting kitchen wastes into a composter or green bin? A

Solve a Problem!

17. An average tree can remove about 9 kg of carbon dioxide per year from the air.
 - (a) Why might tree-planting campaigns be useful in urban areas?
 - (b) Suggest other ways to reduce the amount of carbon in the air. A



18. Read situations i, ii, iii, iv, and v.

- (a) Indicate whether the carbon cycle, water cycle, or both are affected in each situation.
- (b) Predict the changes that might happen in the carbon and water cycles if the situation actually occurred. **T/I A**
- i) An oil spill occurs.
- ii) Heavy rains wash pesticides and toxins on our roads down the sewers.
- iii) Carbon dioxide gas emissions into the air continue to increase.
- iv) No garden waste is placed into garden beds.
- v) There are no plants in a given area.

19. You have just consumed a ham and cheese sandwich and a glass of milk.

- (a) List all the organisms needed to produce your lunch.
- (b) Draw a food chain for each item, with you at the top. (Hint: break down each part of the lunch to create your chains. For example, create separate chains for bread, cheese, and so on.)

20. Trace the water cycle within your community. In your area, are there any human-made structures or mechanisms to deal with the water cycle? **T/I A**

21. Many communities are concerned about West Nile disease, which is spread by mosquitoes, and want to add chemical pesticides to the local pond to destroy all the mosquito larvae.

- (a) Create a typical food web for a pond. Include all the links that mosquito larvae may have in that ecosystem.
- (b) Use this drawing to explain how using pesticides affects the food web.
- (c) Provide some alternative ways to control the mosquito population. **T/I A C**

22. Gulls and raccoons are often looked down upon by humans because they eat garbage.

- (a) What is your view of the situation?
- (b) What might our beaches and cities be like if this did not occur?
- (c) What role do these animals play within an ecosystem that includes humans?
- (d) What can you do to help people live in greater harmony with wildlife in cities and towns? **T/I A**

Create and Evaluate!

23. You are a nature interpreter at a local park.

- (a) Create a poster for visitors to the park that shows what happens to dead material and illustrates how it helps promote sustainability in the ecosystem.
- (b) Have your classmates evaluate the effectiveness of your poster. Evaluate their suggestions and make any changes that you think will improve the poster. **K/U C**

24. Collect several pictures of Native artwork that focus on nature. Discuss your interpretation of these artworks with a partner. Create a visual display of what you believe the paintings show about ecosystems. **A C**



Reflect on Your Learning

- 25. Has your understanding of human and nature interactions changed from the concepts introduced in this chapter? Explain why or why not.
- 26. Think back to the Key Question on the first page of the chapter.
 - (a) In a brief paragraph, answer the Key Question. You may use diagrams.
 - (b) Write one or two more questions about the topic of this unit that you would like to explore.