In your textbook, read about how organisms obtain energy and about matter and energy flow in ecosystems.

Answer the questions below. Use the diagram of a food web to answer questions 1–7.

1. How many food chains make up the food web?

2. Which organism is an herbivore?

3. Which organism is an autotroph?

4. Which organism is a third-order heterotroph? To what trophic level does that organism belong?

5. Which organism is an omnivore?

6. Which organisms belong to more than one food chain?

7. Which organism belongs to more than one trophic level?

8. What are decomposers? From which trophic levels are the organisms that decomposers feed on?

9. What does a pyramid of energy show about the amount of energy available at different trophic levels of a food chain?

10. Why do different trophic levels have different amounts of energy?
In your textbook, read about cycles in nature.

Circle the letter of the choice that best completes the statement or answers the question.

11. Energy that is lost at each trophic level of an ecosystem is replenished by
   a. heat.                    b. nutrients.                   c. sunlight.                    d. organisms.

12. Besides energy, what moves through the organisms at each trophic level of an ecosystem?
    a. organisms                b. nutrients                 c. sunlight                   d. cycles

13. Evaporation and condensation a part of the
    a. carbon cycle.            b. nitrogen cycle.           c. phosphorus cycle.          d. water cycle.

14. Plants lose water to the air through
    a. condensation.            b. photosynthesis.         c. their roots.               d. evaporation.

15. Animals lose water when they
    a. breathe in.              b. urinate.                 c. breathe out.               d. both b and c.

16. The water in the atmosphere is returned to the earth by
    a. precipitation.           b. evaporation.            c. photosynthesis.           d. decomposition.

17. Autotrophs and heterotrophs use carbon molecules for energy and
    a. photosynthesis.          b. growth.                 c. decomposition.           d. both a and b.

18. What do plants use in photosynthesis to make carbon molecules?
    a. carbon dioxide           b. carbohydrates          c. fertilizer.              d. oxygen

19. Heterotrophs get carbon molecules by
    a. making the molecules themselves.          b. feeding on other organisms.
    c. decaying.                                      d. growing.

20. When decomposers break down the carbon molecules in dead organisms,
    a. the dead organisms are converted to coal.    b. oxygen is released.
    c. carbon dioxide is released.                  d. carbon dioxide is converted to energy-rich carbon molecules.

21. Fertilizers provide plants with
    a. nitrogen.     b. carbon.     c. water.     d. oxygen.

22. Which of the following convert(s) nitrogen in the air into a form plants can use?
    a. bacteria      b. lightning  c. sunlight   d. both a and b

23. Plants use nitrogen to make
    a. carbohydrates. b. nitrogen gas. c. proteins. d. both b and c.

24. An animal returns nitrogen to the environment when it
    a. breathes.     b. decomposes. c. urinates. d. both b and c.

25. Animals get phosphorus from
    a. the air.     b. eating plants. c. water. d. the soil.

26. Phosphorus in the soil comes from
    a. rocks.     b. decaying organisms. c. the air. d. both a and b.