Chapter 2 Review

Make Your Own Summary

Summarize the key concepts in this chapter using a graphic organizer. The Chapter Summary on the previous page will help you identify the key concepts. Refer to Study Toolkit 4 on pages 566–567 to help you decide which graphic organizer to use.

Reviewing Key Terms

Match each key term listed below to its definition.

a. carrying capacity
b. connectivity
c. ecological footprint
d. ecological niche
e. mutualism
f. parasite
g. population

1. _____ a symbiotic relationship between two species in which both species benefit from the relationship (2.2)

2. _____ a group of organisms of one species that lives in the same place, at the same time, and can successfully reproduce (2.1)

3. _____ the biotic and abiotic factors that are necessary for a species to survive (2.2)

4. _____ the size of population that can be supported indefinitely on the available resources and services of an ecosystem (2.1)

5. _____ an organism whose niche is dependent on a close association with a larger host organism (2.2)

6. _____ the measure of the impact of an individual or a population on the environment (2.3)

7. _____ the links and relationships between ecosystems that are separated geographically (2.4)

Knowledge and Understanding K/U

8. Identify a resource, other than nutrients and energy, that is needed by each organism.

a. polar bear
b. hibernating bat
c. nesting tree swallow

9. What two factors caused the wild turkey to be eliminated in Ontario during the 19th and early 20th centuries?

10. What is one way to reduce the impact of rapid population growth on natural ecosystems and farmland in the Golden Horseshoe?

11. Explain what happens during coral bleaching. What kind of relationship breaks down?

12. In the 1960s, the doubling time for the human population was about 35 years. What is the approximate doubling time now? What does this mean?

13. At the current rate of population increase, how many days are necessary for Earth's population to increase by 34 million people (the approximate population of Canada).

14. Identify how forestry practices can contribute to desertification.

15. What ecological service do aerial insectivores provide?

Thinking and Investigation T/I

16. Most species of songbirds build "cup" nests. A few species, such as the eastern bluebird, are cavity nesters. This means that they only nest in holes. When the European starling was introduced into North America, its population swelled to the tens of millions. At the same time, the populations of some cavity nesters decreased. What is one possible explanation for the decrease?

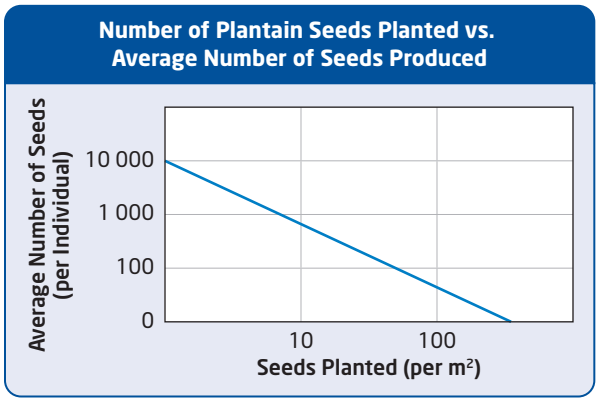
17. In Activity 2-2, Graphing Population Change, you discovered that the populations of some bird species around Barrie have been changing since the early 1970s. If you wanted to determine whether Barrie's urban sprawl was the cause, what evidence would you look for?

18. Either animals or wind can transport pollen from one flower of a seed plant to another. Which kind of pollination is likely to result in dull, smaller, and non-fragrant flowers? Which kind is likely to result in bright, larger, and fragrant flowers? Explain your answers.

19. The following graph shows the relationship between the number of plantain seeds planted per square metre and the average number of seeds produced per individual.

a. Describe the pattern that is shown in the graph.

b. What is a possible explanation for this pattern?



20. Extrapolation involves estimating the pattern of a graph beyond the existing data. In **Figure 2.1**, you examined a graph that shows the growth of an elephant population. If you were extrapolating, would you use a straight line, as suggested by the most recent data? Make sure that you consider **Figure 2.5** before answering.

Communication C

21. BIG IDEAS Ecosystems are dynamic and have the ability to respond to change, within limits, while maintaining their ecological balance. What are some potential problems that may occur on Earth when the human population reaches its peak?

22. BIG IDEAS People have the responsibility to regulate their impact on the sustainability of ecosystems in order to preserve them for future generations. In Section 2.4, you read about the two ways that coffee is grown. How might what you read influence the type of coffee you would buy? What if shade-grown coffee is more expensive? Would this affect your decision? Explain.

23. Have you ever participated in an activity that you consider ecotourism? Describe your experience. If you have not participated in such an activity, describe and explain an ecotourism activity you would like to participate in.

24. Argue why an animal that is hunted by humans, such as the wild turkey, may never reach an ecosystem's carrying capacity. Do you think this is a problem for the ecosystem or the animal?

25. Every species contributes innumerable services that benefit other species in its ecosystem. Draw a table, that includes visuals, of examples of these services.

Application A

26. When populations get too small, they may become extinct unless the remaining individuals can reproduce with individuals from a nearby population. Why would this solution not work for redside dace populations?

27. Many First Nations cultures believe that humans are the only living things that disregard the laws of carrying capacity. Explain whether you agree or disagree with this statement and why.

28. In developed countries such as Canada, the birth rate and death rate are low. In the transition from developing to developed country, the death rate of a country always drops well before the birth rate, usually about two generations before. What would this mean for population growth during the time between the drop in death rate and the drop in birth rate?

29. In 1901, the famous early American naturalist John Muir made the following comment about some of his favourite places in the American West: "It is a mistake to suppose that the water is the cause of the tree groves being there. On the contrary, the groves are the cause of the water being there." What did he mean?

30. A wildlife biologist observed that an insect-eating migratory bird species was declining summer after summer in Canada. The biologist studied the nesting habits of these birds, but found that they were successfully raising their young. Speculate about what the problem might be.