

Chapter 4

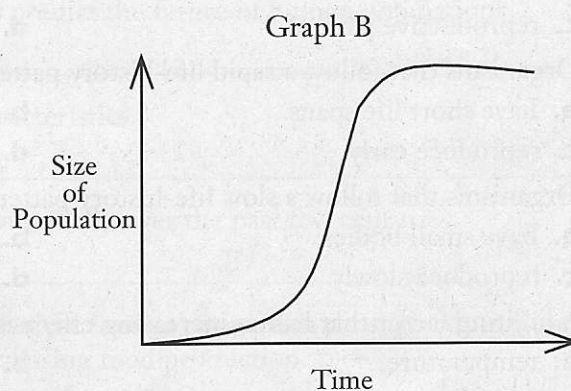
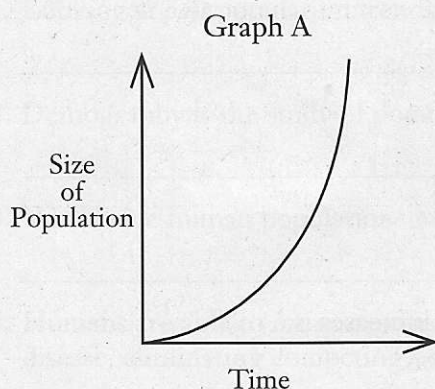
Population Biology

Reinforcement and Study Guide

Section 4.1 Population Dynamics

In your textbook, read about the principles of population growth.

Refer to Graphs A and B below. Answer the following questions.



1. What type of population growth is shown in Graph A? Explain this type of growth.

2. Which graph shows the most likely growth of a squirrel population living in a forest? _____

3. Which graph shows a population's growth under ideal conditions? _____

4. Why don't populations of organisms grow indefinitely?

Use each of the terms below just once to complete the passage.

grows

carrying capacity

below

births

above

under

deaths

exceed

The number of organisms of one species that an environment can support is called its

(5) _____. If the number of organisms in a population is (6) _____ the

environment's carrying capacity, births (7) _____ deaths and the population

(8) _____. If the number of organisms rises (9) _____ the carrying capacity

of the environment, (10) _____ will exceed (11) _____. This pattern will

continue until the population is once again at or (12) _____ the carrying capacity.

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Population Biology, *continued*

Reinforcement and Study Guide

Section 4.1 Population Dynamics,
continued

Circle the letter of the choice that best completes the statement.

13. The most important factor that determines population growth is the organism's
a. social pattern. b. carrying capacity.
c. reproductive pattern. d. feeding pattern.
14. Organisms that follow a rapid life-history pattern
a. have short life spans. b. have small bodies.
c. reproduce early. d. all of the above
15. Organisms that follow a slow life-history pattern
a. have small bodies. b. mature rapidly.
c. reproduce slowly. d. all of the above
16. A limiting factor that has an increasing effect as population size increases is
a. temperature. b. habitat disruption.
c. drought. d. competition.

In your textbook, read about how organism interactions limit population size.

Answer the following.

17. The snowshoe hare is a primary source of food for the Canadian lynx. Explain how the lynx population size changes when the hare population increases.

18. Explain how the change in the lynx population size affects the hare population.

19. What is the relationship between the lynx and the hare called?

20. When does competition decrease the size of a population?

21. What can cause an organism to exhibit stress, and what symptoms of stress can lead to a decrease in population size?

**Chapter
4****Population Biology, *continued*****Reinforcement and Study Guide****Section 4.2 Human Population Growth**

In your textbook, read about demographic trends.

Determine if the statement is true. If it is not, rewrite the italicized part to make it true.

1. Looking at *past* population trends is a good way to predict the future of human populations.

2. Demography is the study of population *health* characteristics.

3. Worldwide human populations have *decreased* exponentially over the past few centuries.

4. Humans are able to *increase* environmental effects on the human population through controlling disease, eliminating competing organisms, and increasing food production.

5. To tell whether a population is *growing*, you must know the difference between the birthrate and the death rate.

6. The death rate is *decreasing* in the United States.

7. The birthrate is *increasing* in the United States.

8. *Birthrate* is the number of offspring a female produces during her reproductive years.

9. In the United States, families are now *smaller* than in previous decades.

10. Birthrates and death rates of countries around the world *are basically the same*.

11. If a country has a high death rate, it *may also* have a high birthrate.

12. If a country has a low death rate and a *high* birthrate, it will grow slowly, if at all.

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4
Population Biology, continued
Reinforcement and Study Guide
**Section 4.2 Human Population Growth,
continued**

For each statement in Column A, write the letter of the item in Column B that completes the statement correctly.

Column A	Column B
_____ 13. Population growth will change if the largest _____ of a population is in its post-reproductive years.	a. age structure
_____ 14. The proportions of a population that are at different _____ make up its age structure.	b. stable
_____ 15. If you know a population has a large group of individuals in their pre-reproductive years, you would predict that the population's growth will be _____.	c. proportion
_____ 16. If the proportions of a population at different age levels are fairly equal, the population will be _____.	d. fertility
_____ 17. The population growth of a country depends on its birthrate, death rate, and _____ rate.	e. rapid
_____ 18. To make predictions about the growth of a population, demographers must know its _____.	f. age levels

Complete each statement.

19. _____ is the movement into and out of populations.
20. _____ is the movement of humans into a population.
21. _____ is the movement of humans from a population.
22. Immigration and emigration of people have no effect on total _____ population.
23. Immigration and emigration of people affect _____ population growth rates.
24. Suburban growth due to _____ has placed stress on schools and various public services.