





5.1 How Populations Grow

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Lesson Objectives

-  List the characteristics used to describe a population.
-  Identify factors that affect population growth.
-  Describe exponential growth.
-  Describe logistic growth.

Describing Populations

For Questions 1–5 complete each statement by writing the correct word or words.

1. The _____ is the area in which a population lives.
2. Population density is the _____ of individuals per unit area.
3. How the individuals are spaced in their range is a population's _____.
4. Growth rate is how quickly a population _____ in size.
5. To find the _____ of a population, count the number of males and females of each age.

Population Growth

For Questions 6–10, write True if the statement is true. If the statement is false, change the underlined word or words to make the statement true

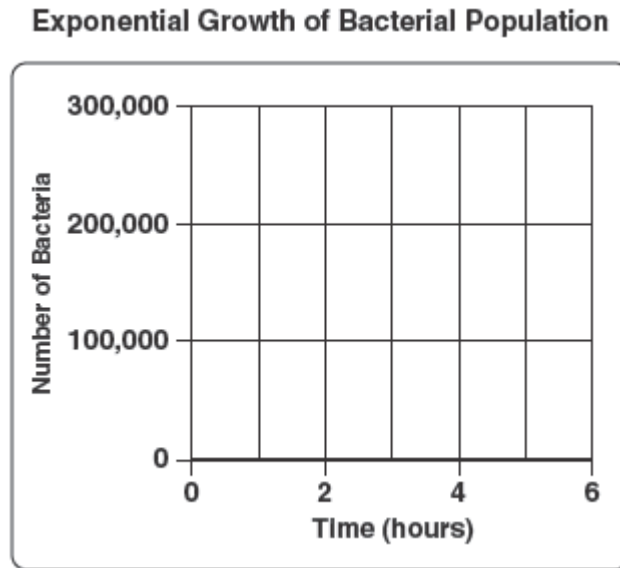
- _____ 6. If the death rate is less than the birthrate, the population is likely to shrink.
- _____ 7. Immigration increases population size.
- _____ 8. Young animals may immigrate from the place where they were born to establish new territories.
- _____ 9. A high birthrate and immigration decrease population size.
- _____ 10. Populations grow if more individuals are born than die in a period of time.

Exponential Growth

12. Describe the conditions in which exponential growth occurs.

13. Can exponential growth occur in a population of organisms that take a long time to reproduce? Why or why not?

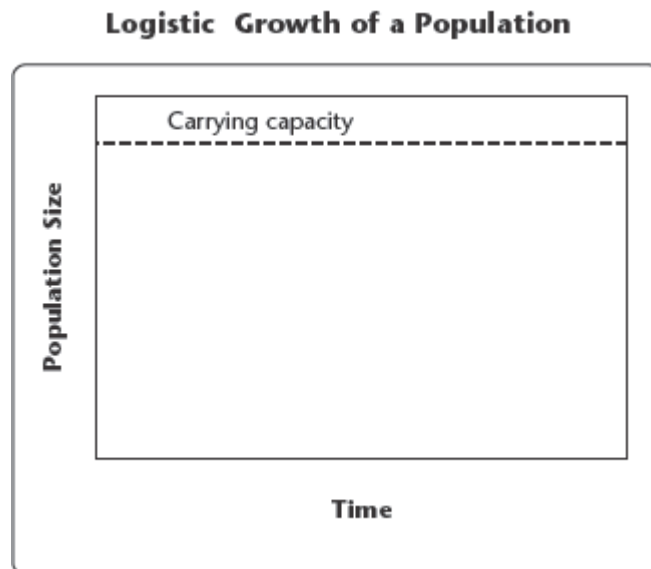
14. Complete the graph by drawing the characteristic shape of exponential population growth.



15. What letter is used to refer to the characteristic shape of an exponential growth curve?

Logistic Growth

16. Complete the graph by drawing the characteristic shape of logistic population growth.



17. What letter is used to refer to the characteristic shape of the logistic growth curve?

18. When real-world populations of plants and animals are analyzed, why do they most often have the logistic growth curve?

19. What does the term carrying capacity refer to?

20. Complete the table to name and explain three phases of logistic growth. Use the terms *growth rate*, *population size*, and *carrying capacity* in your explanations.

| Phases of Logistic Growth | | |
|---------------------------|------------|-------------|
| Phase | Phase name | Explanation |
| 1 | | |
| 2 | | |
| 3 | | |

Apply the Big idea

21. What is an example of a limiting factor that humans use to control the carrying capacity of an environment for a particular type of organism? Explain your answer.
