Name _____ Class _____ Date _____

CHAPTER

VOCABULARY

Populations in Ecosystems

Vocabulary Preview

Read the passage below to prepare for the exercise that follows.

A population is all the individuals of the same species within a community. The maximum rate of reproduction of a population is its biotic potential. This is the rate at which a population would produce offspring if every new individual lived and reproduced at maximum capacity. Populations never achieve their biotic potential because the environment can only support a limited number of organisms. The maximum number of individuals of a species that can be supported by the environment is called the carrying capacity. Populations tend to stabilize, or stop growing in size, when the carrying capacity of the environment is reached. The environmental factors that limit the size of populations are called limiting factors. Limiting factors combine to establish the carrying capacity of a given environment. There are three distinct phases of population growth. The lag phase is a period of very slow growth. If conditions become favorable, the lag phase is followed by a period of very rapid growth called the exponential growth phase. As the carrying capacity of the environment is approached, the population begins to stabilize. This is called the stabilization phase.

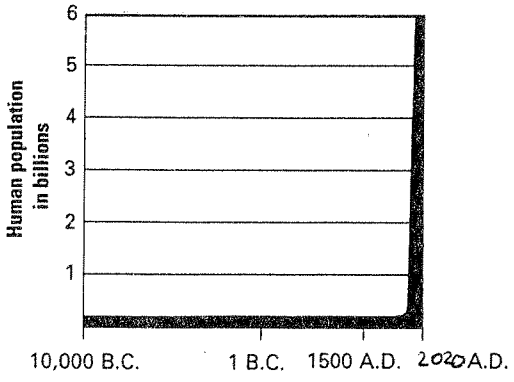
Supply the word or phrase necessary to make each of the following statements true.

1. The population of great white sharks in the North Pacific remains about the same year after year. This population is exhibiting the _____ phase of growth.
2. Rabbits were introduced to Australia in the twentieth century. Facing no serious predation or competitors, the original population of two dozen exploded to more than half a billion. Until people intervened to control the rabbit population, virtually every rabbit survived and reproduced. Thus for a time the rabbit population came close to realizing its _____ .

Study the graph below and answer the accompanying questions.

3. What phase of growth is the human population experiencing now? _____
4. Has the human population begun to stabilize yet? Explain. _____

   _____
5. What phase of population growth do you think the human race has experienced for most of its existence? _____



6. Has the planet reached its carrying capacity for the human population yet? Explain. _____

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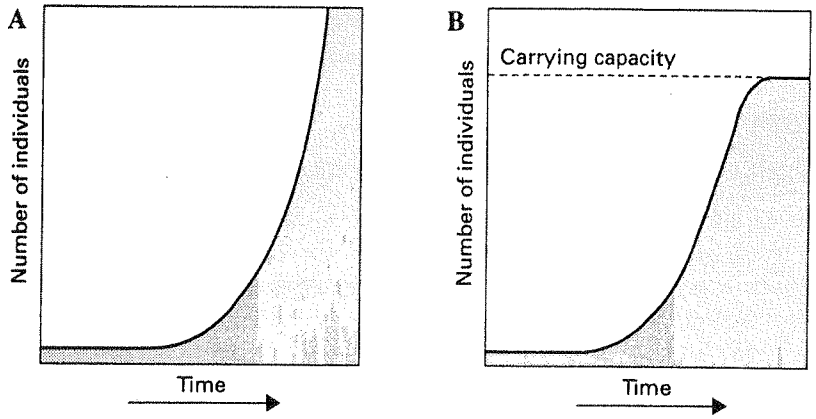
Vocabulary Checkup

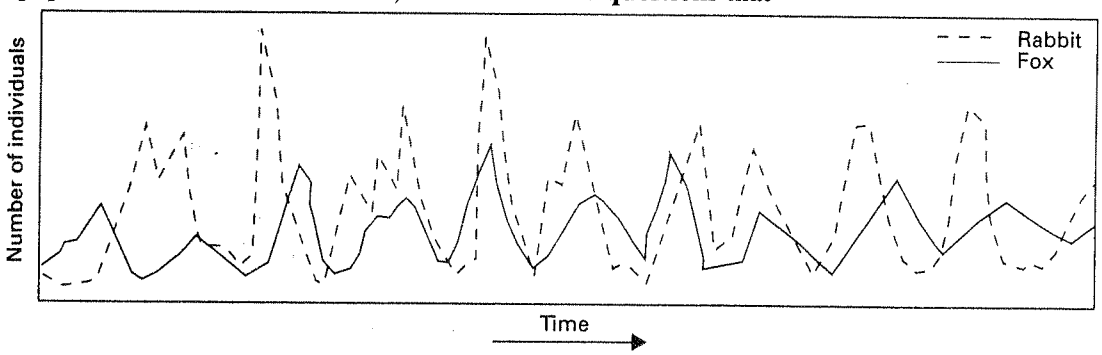
Each of the following graphs shows a type of population curve. Study the graphs and then follow the directions below.



_____ _____

7. In the space provided, identify the type of population curve shown in graph A.
8. In the space provided, identify the type of population curve shown in graph B.
9. Label the lag phase in each of the graphs above.
10. Label the exponential phase in each of the graphs above.
11. Label the stabilization phase in the appropriate graph above.

Study the population curves shown below, then answer the questions that follow.



12. What kind of relationship does the graph indicate exists between the fox and rabbit populations? Explain. _____

_____

13. What term is given to this type of population curve? _____

In the space provided, explain how the terms in each pair differ in meaning.

14. density-dependent factor, density-independent factor _____

_____

15. birth rate, growth rate _____

_____

Supply the term described by each of the following statements.

16. _____ Period of rapid population growth during which the number of individuals repeatedly doubles
17. _____ The number of individuals of the same species in a given area
18. _____ The number of deaths that occur in a population in a given amount of time