
BIOLOGY

OCA - Study Guide: Chapters 5 - 6

Ecology - Ecosystems and communities

Know the following terms.

| | | |
|--------------------------|--------------------|-----------------------------|
| Age-structure diagram | desertification | Logistic growth |
| biodiversity | Emigration | Nonrenewable resource |
| Biological magnification | Endangered species | pollutant |
| Carrying capacity | Exponential growth | Population density |
| deforestation | extinction | Predator -Prey relationship |
| Demographic transition | Green revolution | Renewable resource |
| Demography | Immigration | smog |
| Density dependent | invasive species | Sustainable development |
| Density independent | Limiting Factor | |

Chapter 5.1 - How populations grow

1. Do the inquiry activity on page 118.
2. Explain the meaning of the words **Immigration and Emigration**.
3. Look at the picture of penguins on the bottom of page 120. Answer these questions. If the penguin population was 1200 at the beginning of the year, and 1600 at the end of the year what was the population growth? Suppose 250 penguin chicks died during the year. What was the growth? Now, suppose that 200 adults also died during the year, what was the growth of the population?
4. What is a J- curve growth pattern? Do J-curve growth patterns continue for very long? Why or why not?
5. What is an S-curve? What type of growth does it show? Why must J-curves become S-curves?

Chapter 5.2 - Limits to Growth - Limiting Factors

7. Explain the difference between density-dependent and density-independent factors in the growth of populations.
8. Read the Biology Issues page (128) then write a paragraph on your position of the issue.

Chapter 5.3 - Human Population Growth

9. Using the graph on page 129. Tell what you think would happen if the graph was extended another 2000 years into the future.
10. Explain what happens in stage 1, stage 2, and stage 3 of demographic transition.
11. Look at figure 5-13 on page 131. Based on the age-structure diagrams shown, which country has the most momentum for population growth? Why?
12. Look at the age-structure diagram for Sweden on page 136. Can you see any problems that this type of structure might face in the future?

Chapter 6.1 changing the landscape

13. IN what way might the earth be considered an island?
 14. How has human population growth in the last 150 years affected the earth?
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15. What was the *Green Revolution*? What has been its effect on earth?

16. What are some problems associated with Urban development? How might we prevent these problems?

Chapter 6.2 Renewable and nonrenewable resources

17. What is the difference between a renewable and a nonrenewable resource? Give examples of each.

18. Explain what is meant by sustainable development.

19. Describe what we can do to encourage sustainable development in each of the following problem areas:

Land Resources (Soil) Forest Resources Fishery Resources Air Resources Water

Chapter 6.3 Biodiversity

20. Define Biodiversity.

21. Why is diversity important?

22. What are the differences between an endangered species, a threatened species, and an extinct species?

23. Explain how each of the following threaten diversity:

Habitat Alteration Invasive Species Pollution Climate Change Overhunting

Chapter 6.4 Charting a Course for the Future

24. What is Ozone depletion? What can we do about it?

25. What is Climate Change? Why is it happening? What can we do to try and slow it down?

26. What is acid rain? What can we do to reduce it?

27. What are some of the positive outlooks for the future of our Biosphere?
