

6 Assessment Answer key

Lesson 6.1

UNDERSTAND KEY CONCEPTS

1. d 2. c
3. They cut trees to plant crops and introduced nonnative plants, pigs, chickens, dogs, and rats.
4. Sample answer: breathable air, drinkable water, fertile soil, fossil fuels

THINK CRITICALLY

5. Sample answer: Every possible material should be placed in recycle bins, including cans, bottles, plastics, and paper. Food wastes should be composted. Hazardous wastes should be collected and disposed of in safe ways.
6. Sample answer: Both renewable and nonrenewable resources are made by natural ecosystems. However, renewable resources can be produced or replaced by a healthy ecosystem while nonrenewable resources cannot be within a reasonable amount of time.
7. Sample answer: Because they are large and homogeneous, monocultures are more vulnerable to disease and pests because if a disease attacks one plant, it can quickly spread to all the other plants and destroy the entire monoculture.

Lesson 6.2

UNDERSTAND KEY CONCEPTS

8. c 9. b 10. b 11. a
12. In sustainable forestry, trees are replanted after they are cut, and no more are cut down than are needed or that can be replaced. In deforestation, trees are cut arbitrarily and are not replanted.
13. industrial and agricultural chemicals, residential sewage, and nonpoint sources such as grease and oil washed off streets by rain or the chemicals released into the air by factories and automobiles

THINK CRITICALLY

14. Sample answer: Covering soil with mulch or compost near the bases of plants could reduce soil erosion. A simple experiment to test this hypothesis would be to grow two areas of the same crop, using mulch or compost in one area and not in the other. Results would support the hypothesis if the area of crops with mulch or compost produced more than the area without.
15. 400,000 parts per million
16. Sample answer: The acid rain kills organisms in the affected lakes. Without organisms, their wastes, and the turbulence caused by their activities, the water remains clear and blue.

Lesson 6.3

UNDERSTAND KEY CONCEPTS

- 17. b
- 18. a small area of habitat surrounded by a different habitat
- 19. ecosystem diversity, species diversity, genetic diversity

THINK CRITICALLY

- 20. Sample answer: The loss of biodiversity would limit the medicines that could be developed, make crop plants more vulnerable to diseases, and it would make ecosystems less stable, productive, and valuable.
- 21. Species diversity is the number of different species in the biosphere or in a particular area. Ecosystem diversity refers to the variety of habitats, communities, and ecological processes in the biosphere.

Lesson 6.4

UNDERSTAND KEY CONCEPTS



- 22. d 23. b
- 24. Earth's temperatures are getting warmer, sea ice is melting, and sea levels are rising.
- 25. Sample answer: Organisms move toward cooler places away from the equator and from warm lowlands to cooler, higher altitudes. Plants flower and animals breed earlier as though spring begins earlier.

THINK CRITICALLY

- 26. The ozone layer hasn't repaired itself fully yet because CFCs can remain in the atmosphere for a century. CFCs were widely used for many decades before the ban went into place, so their effects are still visible.
- 27. Sample answer: The steps taken include regulating how many fish could be caught in U.S. waters, closing certain areas to fishing until stocks recover, closing some areas seasonally to allow fishes to breed and spawn, and using aquaculture as an alternative to fishing. Overfishing is a complex issue because fleets from other countries fish outside of U.S. territorial waters, and countries are reluctant to accept conservation efforts that could cause job loss.

28. Sample answer: The catch would decrease.
29. Sample answer: The fishing of bluefin tuna should be regulated, strictly limiting the catch for at least the next decade.

WRITE ABOUT SCIENCE

30. Sample answer: Wetlands naturally filter toxins and other materials from water, making the water resources safer for humans, as well as healthier for affected ecosystems. In addition, wetlands provide habitats for many species, increasing an area's ecosystem diversity and species diversity.
31.  Sample answer: Species diversity in an area contributes to the overall biodiversity of the area. Biodiversity's benefits to society include contributions to medicine and agriculture and the provision of ecosystem goods and services.
32.  Sample answer: Most coastal waters are in the photic zone. As a result, they receive plenty of solar energy for the producers that support the food chains there. In addition, runoff from rivers and streams may bring nutrients to coastal waters that also increase the productivity of these ecosystems. Finally, estuaries, the intertidal zone, and the coastal ocean provide varied habitats that encourage biodiversity.

Analyzing Data

PURPOSE Students will draw conclusions about the effect of introduced species in the United States.

PLANNING Review with students how species introduced to new habitats can become invasive and threaten biodiversity in the habitat.

ANSWERS

33. b

34. c

Answers

1. C
2. C
3. C
4. A
5. B
6. B
7. A
8. C
9. A
10. Sample answer: They can use it to analyze human impact on ecosystems and make comparisons among different populations.