

Skills Worksheet

Active Reading

Section: Evolution

Read the passage below and answer the questions that follow.

Resistance is the ability of one or more organisms to tolerate a particular chemical designed to kill it. An organism may be resistant to a chemical when it contains a gene that allows it to break the chemical down into harmless substances. By trying to control pests and bacteria with chemicals, humans promote the evolution of resistant populations.

Consider the evolution of pesticide resistance among corn pests. A pesticide is sprayed on corn to kill grasshoppers. Most of the grasshoppers die, but a few survive. The survivors happen to have a gene that protects them from the pesticide. The surviving insects pass on the gene to their offspring. Each time the corn is sprayed, the insect population changes to include more and more resistant members. After many sprayings, the entire population may be resistant, making the pesticide useless. The faster an organism reproduces, the faster its populations can evolve.

IDENTIFYING MAIN IDEAS

One reading skill is the ability to identify the main idea of a passage. The main idea is the main focus or key idea. Frequently, a main idea is accompanied by supporting information that offers detailed facts about main ideas.

Read each question and write the answer in the space provided.

1. When might an organism be resistant to a chemical?

2. What main idea do the details in the second paragraph support?

VOCABULARY DEVELOPMENT

Read each question and write the answer in the space provided.

3. Define *resistance*.

4. Write a sentence using the word *resistance*.

Active Reading *continued*

SEQUENCING INFORMATION

One reading skill is the ability to sequence information, or to logically place items or events in the order in which they occur.

Sequence the statements below to show the steps in insects' development of resistance to pesticides. Write "1" on the line in front of the first step, "2" on the line in front of the second step, and so on.

- _____ 5. Remaining grasshoppers reproduce, passing on the resistant gene.
- _____ 6. Corn is sprayed with a pesticide.
- _____ 7. Some grasshoppers survive.
- _____ 8. The pesticide is rendered useless after many sprayings.
- _____ 9. The survivors' offspring are sprayed again.
- _____ 10. A cycle continues of the most pesticide-resistant members of the population surviving each spraying and reproducing.

RECOGNIZING CAUSE AND EFFECT

One reading skill is the ability to recognize cause and effect.

Read each question and write the answer in the space provided.

11. What makes an organism resistant to a chemical?

12. What human activity promotes the evolution of organisms that are resistant to certain chemicals?

13. When a pesticide is sprayed and there are still survivors, what can you assume about them?

14. If an organism reproduces quickly, its population can

_____ faster.

forest fire far away can affect the air in the city.

- 19.** The forest floor may become littered with branches, leaves, and dead trees because fungi play an important role in breaking down dead organisms. Although bacteria also break down dead organisms, the lack of fungi could decrease the rate of decomposition of biotic factors in this forest ecosystem.

Active Reading

SECTION: ECOSYSTEMS: EVERYTHING IS CONNECTED

1. living and nonliving things
2. each other; abiotic factors
3. living and once living
4. nonliving
5. “without” or “not”
6. B
7. A
8. A
9. B
10. B
11. A
12. A
13. B
14. A
15. B
16. A
17. 1
18. 5
19. 2
20. 3
21. 4

SECTION: EVOLUTION

1. when it contains a gene that allows it to break the chemical down into harmless substances
2. the evolution of pest resistance among corn pests
3. the ability of one or more organisms to tolerate a particular chemical designed to kill it
4. Answers may vary.
5. 3
6. 1
7. 2
8. 6
9. 4

10. 5
11. It contains a gene that allows it to break the chemical down into harmless substances.
12. the attempt to control pests and bacteria with chemicals
13. They have a pesticide-resistant gene.
14. evolve

SECTION: THE DIVERSITY OF LIVING THINGS

1. b
2. a
3. c
4. b
5. d
6. a
7. miniature skeletons
8. Like bacteria, fungi break down bodies and body parts of dead organisms and sometimes cause diseases.
9. Bodies and body parts of dead organisms are broken down.
10. athlete’s foot
11. They give blue cheese its strong flavor.
12. Yeasts produce the gas that makes bread rise.

Map Skills

1. Organism: any individual from a population. Population: human; oak tree; blue-jay; toad; squirrel. Community: park.
2. oak tree; toad
3. biotic
4. Answers may vary.
5. Answers may vary but students should recognize that a decrease in the human population would most likely lead to an increase in the non-human population.

Quiz

SECTION: ECOSYSTEMS: EVERYTHING IS CONNECTED

- | Matching | Multiple Choice |
|----------|-----------------|
| 1. b | 6. d |
| 2. e | 7. b |
| 3. a | 8. a |
| 4. d | 9. a |
| 5. c | 10. d |