

Active Reading

Section 2: 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, insects that are resistant to the pesticide will have a greater chance of survival and reproduction. As a result, the insect population will evolve to include more and more resistant members.

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 gene for resistance.
- _____ 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.