

Active Reading

Section: How We Use Land

Read the passage below and answer the questions that follow.

We use land for many purposes, including farming, mining, building cities and highways, and recreation. Land cover is what you find on a patch of land, and it often depends on how the land is used. For example, land cover might be a forest, a field of grain, or a parking lot. There are different types of land cover and different human uses for each cover type.

Land that is covered mainly with buildings and roads is called **urban** land. For the purposes of determining land use and residence trends, the U.S. Census Bureau defines an urban area as an area that contains 2,500 or more people and usually has a governing body, such as a city council. Any population not classified as urban is considered rural. Land that contains relatively few people and large areas of open space are **rural** areas. Most land provides one or more resources that humans consume. These resources include wood in forests, crops in farmland, and mineral resources.

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 the main idea.

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

1. What is land cover?

2. List three examples of land cover.

3. According to the U.S. Census Bureau, how many people must an urban area contain?

4. What else must an urban area have?

5. Name three consumable resources that land may provide.

Active Reading *continued*

VOCABULARY DEVELOPMENT

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

6. Rural areas contain large areas of _____ and _____ people.

7. Urban areas are covered with _____, and _____, and contain _____ people.

RECOGNIZING SIMILARITIES AND DIFFERENCES

One reading skill is the ability to recognize similarities and differences between two phrases, ideas, or things. This is sometimes known as comparing and contrasting.

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

8. How is a population determined to be rural instead of urban?

9. How does land use differ between urban and rural populations?

RECOGNIZING CAUSE AND EFFECT

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

In the space provided, write the letter of the description that best matches the term or phrase.

- a. land use
- b. land cover
- c. land resource

_____ 10. field of grain

_____ 11. mining

_____ 12. wood

_____ 13. farming

_____ 14. parking lot

_____ 15. recreation

_____ 16. forest

_____ 17. minerals

_____ 18. food crop

_____ 19. building cities and highways

Active Reading**Section: Urban Land Use**

Read the passage below and answer the questions that follow.

Environmental conditions in the center of a city are different from those of the surrounding countryside. Cities both generate and trap more heat. The increased temperature in the city is called a **heat island**. Heat is generated by the infrastructure that makes a city run. Roads and buildings absorb more heat than vegetation does. They also retain heat longer. Atlanta, Georgia, is an example of a city that has a significant heat island.

Scientists are beginning to see that heat islands can affect local weather patterns. Hot air rises over a city, cooling as it rises, and eventually produces rain clouds. In Atlanta and many other cities, increased rainfall is a side effect of the heat island. The heat-island effect may be moderated by planting trees for shade and by installing rooftops that reflect rather than retain heat.

IDENTIFYING MAIN IDEAS

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

1. Authors often include a main idea in one sentence of a passage. In the space below, write the sentence that you think best summarizes the main idea of this passage.

2. Why does the author mention Atlanta, Georgia?

3. Scientists use conditional words such as *many*, *sometimes*, *could*, and *might* when they are writing a statement of probability rather than of fact. What conditional word does this author use? Which sentence is it in?

4. What does this conditional word suggest about the statement in which it is used?

Active Reading *continued*

VOCABULARY DEVELOPMENT

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

5. What is the condition that causes increased temperatures in a city called?

6. The prefix *infra-* means “within” or “below.” A *structure* is something that is built. Use this information to define the *infrastructure* of a city.

RECOGNIZING SIMILARITIES AND DIFFERENCES

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

7. How is temperature in urban areas different from temperature in surrounding rural areas?

8. How might the weather be different in the city than it is in the surrounding countryside?

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.

9. What is the result of increased temperature in a city?

10. Explain how heat can affect a city’s weather.

11. What can city dwellers do to counteract the heat-island effect?

Active Reading**Section: Land Management and Conservation**

Read the passage below and answer the questions that follow.

People use enormous amounts of wood. The worldwide average is 1,800 cm³ of wood used per person each day. However, on average, each person in the United States uses about 3.5 times this amount. This is the equivalent of each person in the United States cutting down a tree that is 30 m tall every year. About 1.5 billion people in developing countries depend on firewood as their main source of fuel.

The timber industry classifies forest lands into three categories—virgin forest, which is forest that has never been cut; native forest, which is forest that is planted and managed; and tree farms, which are areas where trees are planted in rows and harvested like other crops. The two most widely used methods of harvesting trees are clear-cutting and selective cutting. *Clear-cutting* is the process of removing all of the trees from an area of land. Clear-cutting large areas destroys wildlife habitat and causes soil erosion. The main alternative is selective cutting, which is usually practiced on smaller areas owned by individuals. *Selective cutting* is the process of cutting and removing only middle-aged or mature trees. Selective cutting is more expensive than clear-cutting, but selective cutting is usually much less destructive.

IDENTIFYING MAIN IDEAS

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In the space provided, write the letter of the term or phrase that best answers each question.

- _____ 1. How many people in developing countries rely on firewood for fuel?
- | | |
|----------------|----------------|
| a. 30 million | c. 1.5 billion |
| b. 3.5 billion | d. 1.5 million |
- _____ 2. How much wood does the average person (worldwide) use per day?
- | | |
|--------------------------|----------|
| a. 3.5 cm ³ | c. 30 m |
| b. 1,800 cm ³ | d. 1.5 m |
- _____ 3. How much wood does the average person in the United States use per day?
- | | |
|--------------------------|--------------------------|
| a. 1,800 cm ³ | c. 6,300 cm ³ |
| b. 5,400 cm ³ | d. 1,050 m |

Active Reading *continued*

VOCABULARY DEVELOPMENT

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|----------------------------|---|
| _____ 4. clear-cutting | a. forest that is planted and managed |
| _____ 5. virgin forest | b. forest that has never been cut |
| _____ 6. selective cutting | c. the process of cutting and removing only middle-aged or mature trees |
| _____ 7. tree farms | d. the process of removing all trees from an area of land |
| _____ 8. native forest | e. areas where trees are planted in rows and harvested like other crops |

RECOGNIZING SIMILARITIES AND DIFFERENCES

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

9. What comparison does the author use to show how much wood a person in the United States uses?

10. What are the similarities between clear-cutting and selective cutting?

11. What are the differences between clear-cutting and selective cutting?

12. What are the advantages and disadvantages of clear-cutting versus selective cutting?

Active Reading

Ch. 15

Section: Feeding the World

Read the passage below and answer the questions that follow.

Between 1950 and 1970, Mexico increased its production of wheat eight-fold and India doubled its production of rice. Worldwide, increases in crop yields resulted from the use of new crop varieties and the application of modern agricultural techniques. These changes were called the *green revolution*. Since the 1950s, the green revolution has changed the lives of millions of people.

However, the green revolution also had some negative effects. Most new varieties of grain produce large yields only if they receive large amounts of water, fertilizer, and pesticides. In addition, the machinery, irrigation, and chemicals required by new crop varieties can degrade the soil if they are not used properly. As a result of the overuse of fertilizers and pesticides, yields from green revolution crops are falling in many areas. Grain production in the United States has decreased since 1990, partly because the amount of water used for irrigation has decreased during the same period.

IDENTIFYING MAIN IDEAS

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Write the letter of the term or phrase in the space provided, that best completes each statement.

- _____ 1. Between 1950 and 1970, the green revolution led to
- increases in crop yields worldwide.
 - the failure of new crop varieties.
 - water shortages in the United States.
 - grain shortages in Mexico and India.
- _____ 2. *Irrigation* refers to
- | | |
|------------------------------|---|
| a. varieties of crop yields. | c. fertilizer used to increase crop yields. |
| b. water used for crops. | d. machinery used to harvest crops. |
- _____ 3. According to the passage, one problem with the green revolution is that
- few people have access to new techniques and machinery.
 - it did not last long enough to make a difference in grain production.
 - it led to widespread drought.
 - it led to the overuse of fertilizers and pesticides.

Active Reading *continued*

Ch-15

VOCABULARY DEVELOPMENT

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

4. The verb *yield* means “to bear or bring forth as a natural product.” Use this information to define *crop yield*.

RECOGNIZING SIMILARITIES AND DIFFERENCES

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

5. How did Mexico benefit from the green revolution between 1950 and 1970? How did India benefit?

6. How was agriculture after the green revolution different from agriculture before the green revolution?

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.

7. What do new varieties of grain require to produce large yields?

8. Why has grain production in the United States decreased since 1990?

9. Why are yields from green revolution crops falling in many areas?

10. What effect do the machinery, irrigation, and chemicals required by new crop varieties have on soil?

Active Reading

Ch. 15

Section: Crops and Soil**Read the passage below and answer the questions that follow.**

In North America, insects eat about 13 percent of all crops. Crops in tropical climates suffer even greater insect damage because the insects grow and reproduce faster in these climates. In Kenya, for example, insects destroy more than 25 percent of the nation's crops. Worldwide, pests destroy about 33 percent of the world's potential food harvest.

Insects are one of several types of organisms considered pests. A *pest* is any organism that exists where you do not want it or that exists in large enough numbers to cause economic damage. Humans try to control populations of many types of pests, including plants, fungi, and microorganisms.

Wild plants often have more protection from pests than do crop plants. Wild plants grow throughout a landscape, so pests have a harder time finding and feeding on a specific plant. Crop plants, however, are usually grown together in large fields, which provide pests with a one-stop source of food. Wild plants are also protected from pests by a variety of pest predators that live on or near the plants. Some wild plants have also evolved defenses to many pests, such as poisonous chemicals that repel pests.

IDENTIFYING MAIN IDEAS

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

1. What is a *pest*?

2. List three types of pest populations that humans try to control.

Write the letter of the phrase in the space provided, that best answers the question.

- _____ 3. How much of the potential food harvest do pests destroy worldwide?
- | | |
|----------------|---------------|
| a. 100 percent | c. 33 percent |
| b. 50 percent | d. 10 percent |

Ch. 15

Active Reading *continued*

RECOGNIZING SIMILARITIES AND DIFFERENCES

One reading skill is the ability to recognize similarities and differences between two phrases, ideas, or things. This is sometimes known as comparing and contrasting.

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

4. How does insect damage to crops in Kenya compare to insect damage to crops in North America?

5. Why do crop plants have less protection from pests than do wild plants?

The following statements apply to either wild plants or to crop plants. In the space provided, write "WP" if the statement applies to wild plants or "CP" if the statement applies to crop plants.

- _____ 6. grow throughout a landscape
- _____ 7. provide pests with a one-stop source of food
- _____ 8. have evolved defenses against many pests
- _____ 9. are protected from pests by pest predators that live on or near the plants
- _____ 10. grow together in large fields

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. Why do crops in tropical climates suffer greater damage than crops in North America?

12. Why do humans try to control pest populations?

Ch. 15

Active Reading *continued*

VOCABULARY DEVELOPMENT

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

5. The prefix *aqua-* refers to “water.” The verb *culture* means “to foster the growth of living things.” Use this information to define *aquaculture*.

In the space provided, write the letter of the definition that best matches the term.

- | | |
|--------------------|-----------------------------------|
| _____ 6. migrate | a. gather in |
| _____ 7. circulate | b. reach adulthood |
| _____ 8. harvest | c. flow without obstruction |
| _____ 9. mature | d. move from one place to another |

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 the process of raising and harvesting salmon. Write “1” on the line in front of the first step, “2” on the line in front of the second step, and so on.

- _____ 10. The salmon are released.
- _____ 11. The salmon return to their birthplace.
- _____ 12. The salmon are raised on a ranch until they reach a certain age.
- _____ 13. The salmon are captured and harvested.
- _____ 14. The salmon migrate downstream to the ocean.
- _____ 15. The salmon grow to adulthood.

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.

16. How does circulating clean water contribute to the operation of a fish farm?

17. Why do salmon return to their birthplace after they mature?
