

**Active Reading**

Ch. 13

**Section: Climate and Climate Change****Read the passage below and answer the questions that follow.**

You know that the temperature and precipitation change with the seasons. But do you know what causes the seasons? The seasons result from the tilt of Earth's axis (about  $23.5^\circ$  relative to the plane of its orbit). Because of this tilt, the angle at which the sun's rays strike the Earth changes as the Earth moves around the sun.

During summer in the Northern Hemisphere, the Northern Hemisphere tilts toward the sun and receives direct sunlight. The number of hours of daylight is greatest in the summer. Therefore, the amount of time available for the sun to heat the Earth becomes greater. During summer in the Northern Hemisphere, the Southern Hemisphere tilts away from the sun and receives less direct sunlight. During summer in the Southern Hemisphere, the situation is reversed. The Southern Hemisphere is tilted toward the sun, whereas the Northern Hemisphere is tilted away.

**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. How much does Earth tilt on its axis?

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2. The number of hours of daylight is greatest when?

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3. Where is the Northern Hemisphere in relation to the sun in summer?

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

- \_\_\_\_\_ 4. Which of the following sentences best states the main idea of the passage?
- a. The amount of time for the sun to heat Earth becomes greater.
  - b. The seasons result from the tilt of Earth on its axis.
  - c. The Southern Hemisphere is tilted away from the sun.
  - d. Temperature and precipitation change with the seasons.

**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.**

5. What season is it in the Northern Hemisphere when the Southern Hemisphere is tilted toward the sun?

\_\_\_\_\_

6. What season is it in the Southern Hemisphere when the Northern Hemisphere is tilted away from the sun?

\_\_\_\_\_

**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 causes the seasons?

\_\_\_\_\_

\_\_\_\_\_

8. How does the tilt of Earth affect sunlight?

\_\_\_\_\_

\_\_\_\_\_

9. How does the amount of time in which the sun can warm Earth affect the seasons?

\_\_\_\_\_

\_\_\_\_\_

10. Where is the Southern Hemisphere in relation to the sun when it is summer in the Northern Hemisphere?

\_\_\_\_\_

\_\_\_\_\_

11. Where is the Northern Hemisphere in relation to the sun when it is summer in the Southern Hemisphere?

\_\_\_\_\_

\_\_\_\_\_

**Active Reading**

Ch. 13

**Section: The Ozone Shield****Read the passage below and answer the questions that follow.**

High levels of UV light can kill single-celled organisms called *phytoplankton* that live near the surface of the ocean. The loss of phytoplankton could disrupt ocean food chains and reduce fish harvests. In addition, a reduction in the number of phytoplankton would cause an increase in the amount of carbon dioxide in the atmosphere.

Some scientists believe that increased UV light could be especially damaging for amphibians, such as toads and salamanders. Amphibians lay eggs that lack shells in the shallow water of ponds and streams. UV light at natural levels kills many eggs of some species by damaging unprotected DNA. Higher UV levels might kill more eggs and put amphibian populations at risk. Ecologists often use the health of amphibian populations as an indicator of environmental change due to the environmental sensitivity of these creatures.

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

1. Authors sometimes use one person, place, or thing as the main focus of their writing. What group of organisms is the center of focus in the first paragraph of this passage?

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2. Where do these organisms live?

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3. What group of organisms is the center of focus in the second paragraph?

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4. Where do these organisms lay their eggs?

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5. In your own words, state the main idea of this passage.

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**Active Reading** *continued*

6. What is notable about the eggs of these organisms?

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7. Why do ecologists use amphibians to gauge environmental change?

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**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.**

8. What effect does a high level of UV light have on phytoplankton?

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9. If the number of phytoplankton decreases, what happens to the amount of carbon dioxide in the atmosphere?

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10. If the number of phytoplankton decreases, what happens to the food chains in the ocean?

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11. What effect does UV light have on amphibians?

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12. What in an amphibian egg is damaged by UV light?

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13. If UV levels are increased, what is likely to happen to amphibian populations?

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**Active Reading**

Ch. 13

**Section: Global Warming****Read the passage below and answer the questions that follow.**

Many scientists think that the increasing greenhouse gases in our atmosphere result in increasing the average temperature on Earth. The result, they believe, will be a warmer Earth. This predicted increase in global temperature is known as **global warming**. Earth's average global temperature increased during the 20th century. Many scientists project that the warming trend that began in the 20th century will continue throughout the 21st century. However, not all scientists agree that the observed global warming is due to greenhouse gases. Some scientists believe that the warming is part of natural climatic variability. They point out that widespread fluctuations in temperature have occurred throughout geologic time.

**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.

**In the space provided, write the letter of the term or phrase that best completes each statement.**

- \_\_\_\_\_ 1. Earth's average temperature \_\_\_\_\_ during the 20th century.
- |              |                    |
|--------------|--------------------|
| a. increased | c. stayed the same |
| b. decreased | d. fluctuated      |
- \_\_\_\_\_ 2. Scientists predict that the Earth's average temperature will \_\_\_\_\_ throughout the 21st century.
- |                         |                           |
|-------------------------|---------------------------|
| a. stabilize            | c. begin to decrease      |
| b. continue to increase | d. fluctuate more sharply |
- \_\_\_\_\_ 3. Many scientists blame the presence of \_\_\_\_\_ in the atmosphere for Earth's increased average temperature.
- |           |                     |
|-----------|---------------------|
| a. CFCs   | c. ozone            |
| b. oxygen | d. greenhouse gases |

**VOCABULARY DEVELOPMENT**

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

4. The predicted increase in Earth's average temperature is known as
- \_\_\_\_\_

**Active Reading** *continued*

5. What is another key term for this chapter that appears in this passage?

\_\_\_\_\_

6. *Global* can mean “worldwide.” Given this definition, whom would you say is affected by global warming?

\_\_\_\_\_

\_\_\_\_\_

**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.**

7. What do those scientists who believe the Earth is experiencing global warming use as evidence to support their claims?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

8. What do these scientists say is the cause of global warming?

\_\_\_\_\_

\_\_\_\_\_

9. What do those scientists who do *not* believe the Earth is experiencing global warming use as evidence to support their claims?

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

10. What do these scientists say is the cause of the increase in temperature throughout the 20th century?

\_\_\_\_\_

\_\_\_\_\_