Earth, Sunlight, and Seasons

Fill in the Blank: Use the Word Bank

Word Bank: solar radiation • cooler • equator • axis • flattened

1. Earth is nearly spherical, but its poles are slightly _____.
2. The imaginary line through both poles around which Earth rotates is its _____.
3. The line dividing Earth into Northern and Southern Hemispheres is the _____.
4. Energy reaching Earth from the Sun is called _____.
5. Thermal energy moves from warmer places toward places that are _____.

Vocabulary Matching

Write the letter of the correct definition beside each numbered term.

1. axis _____
2. equator _____
3. solar radiation _____
4. hemisphere _____
5. thermal energy _____

a. A. Energy transferred because of the motion of particles in matter.

b. B. The imaginary line around the middle of Earth, halfway between the poles.

c. C. Energy from the Sun that travels through space.

d. D. One half of Earth, divided by the equator.

e. E. An imaginary line through the North and South Poles around which Earth rotates.

LIVEWORKSHEETS

Earth, Sunlight, and Seasons

Multiple Choice Questions

Choose the best answer for each question. Use the reading, including its correction about Earth's rotation.

1. Which statement accurately describes Earth's surface and the locations of its poles?
    a. Earth has a smooth surface, and both poles lie on continents.
    b. Earth has an uneven surface; the North Pole lies in an ocean, and the South Pole lies on Antarctica.
    c. Earth has an uneven surface; the North Pole lies on Antarctica, and the South Pole lies in an ocean.
    d. Earth has a smooth surface, and both poles lie in oceans.
2. Which statement correctly connects Earth's rotation with the Sun's apparent daily movement?
    a. Earth rotates westward; the Sun appears to rise in the east.
    b. Earth rotates eastward; the Sun appears to rise in the west.
    c. Earth rotates westward; the Sun appears to set in the east.
    d. Earth rotates eastward; the Sun appears to rise in the east and set in the west.
3. During July, which seasonal comparison follows from the reading?
    a. The United States experiences summer while the Southern Hemisphere experiences winter.
    b. Both hemispheres experience summer because Earth is closer to the Sun.
    c. The United States experiences winter while the Southern Hemisphere experiences summer.
    d. Both hemispheres experience winter because sunlight spreads over larger areas everywhere.
4. Why does the angled flashlight model help explain colder conditions near Earth's poles?
    a. Angled light concentrates the same energy onto a smaller area.
    b. Angled light changes all visible radiation into invisible radiation.
    c. Angled light spreads the same energy over a larger area.
    d. Angled light explains why land always stays warmer than water.

LIVEWORKSHEETS

Earth, Sunlight, and Seasons

5. After sunset, nearby ocean water remains warmer than the land. Which explanation best matches the reading?
    a. Water cools faster than land, so it loses its energy first.
    b. Land cools faster than water, allowing ocean water to remain warmer.
    c. Water and land always warm and cool at identical rates.
    d. Thermal energy always moves from cooler places toward warmer places.

6. Which statement best explains the opposite seasons in January in the Northern and Southern Hemispheres?
    a. Both hemispheres have winter because Earth is farther from the Sun.
    b. The Northern Hemisphere has winter, and the Southern Hemisphere has summer because Earth's tilted axis causes the hemispheres to receive different amounts of sunlight.
    c. The Northern Hemisphere has summer, and the Southern Hemisphere has winter because Earth rotates each day.
    d. Both hemispheres have summer because Earth's axis is tilted.

7. How does direct sunlight near the equator differ from angled sunlight near the poles?
    a. Direct sunlight spreads over a larger area and produces less concentrated heating than angled sunlight.
    b. Angled sunlight concentrates energy on a smaller area, making the poles warmer than the equator.
    c. Direct sunlight concentrates energy on a smaller area near the equator, while angled sunlight spreads energy over a larger area near the poles.
    d. Direct and angled sunlight always heat the same area equally.

8. Which statement best describes how land and ocean water heat and cool, and how thermal energy moves?
    a. Land heats and cools more slowly than water, and thermal energy moves from cooler places toward warmer places.
    b. Land heats and cools faster than water, and thermal energy moves from warmer places toward cooler places.
    c. Land and water always heat and cool at the same rate, and thermal energy does not move between them.
    d. Water heats and cools faster than land, and thermal energy always moves from cooler places toward warmer places.

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