Word-Building Activity: Sentence Completion

Directions: Study the terms and definitions below. On each line, write the term that correctly completes each sentence.

atmosphere n. a thin layer of gases that surrounds Earth
exosphere n. the atmospheric layer that is farthest from Earth
ionosphere n. the region within the mesosphere where ions are located
mesosphere n. the layer of the atmosphere that is directly above the stratosphere
stratosphere n. the layer of the atmosphere that is directly above the troposphere
thermosphere n. the layer of the atmosphere that is directly above the mesosphere
troposphere n. the layer of atmosphere that is closest to Earth's surface

1. The second atmospheric layer, the ____________, includes a region known as the ozone layer.

2. Birds, bats, and insects fly in the ____________, which is the lowest layer of the atmosphere.

3. The ____________ is the layer between the stratosphere and the thermosphere.

4. Beyond the thermosphere is the ____________, which is the atmospheric layer that is farthest from Earth.

5. Earth's ____________ contains water vapor, nitrogen, carbon dioxide, oxygen, and other gases.

6. The ____________ extends from the mesosphere to the exosphere.

7. Spectacular auroras might occur when charged particles in the ____________ emit vivid colors.
Energy Transfer in the Atmosphere

**Key Concept** How does energy transfer from the Sun to Earth and the atmosphere?

**Directions:** Study the diagram. Then explain what the diagram shows at each step on the lines below.

1. 

2. 

3. 

4. 

**Directions:** Answer each question on the lines provided.

5. What name is given to the process depicted in the diagram?

6. Which gases in the atmosphere contribute the most to this process?
Energy Transfer in the Atmosphere

Key Concept: How are air circulation patterns within the atmosphere created?

Directions: On the line after each item, write conduction, convection, or radiation to indicate the type of thermal energy transfer that it represents.

1. the warming rays of the Sun ____________________

2. the flow of ocean currents ____________________

3. a branding iron making a mark ____________________

4. hot feet from hot sand ____________________

5. a cool breeze ____________________

6. heat from glowing coals ____________________

7. high-altitude air streams ____________________

8. the warmth of a heating pad ____________________

Directions: On the line before each item, write A if it involves the absorption of thermal energy, or write R if it involves the release of thermal energy.

9. water freezing ____________________

10. ice melting ____________________

11. water evaporating ____________________

12. water vapor condensing ____________________
Lesson Quiz A

Energy Transfer in the Atmosphere

Multiple Choice

Directions: On the line before each question or statement, write the letter of the correct answer.

1. Most of the energy that reaches Earth from the Sun is
   A. visible light.
   B. ultraviolet light.
   C. infrared radiation.

2. When the Sun’s energy reaches Earth,
   A. most of it is absorbed by clouds.
   B. more than 90 percent of it is reflected.
   C. about half of it is absorbed by Earth’s surface.

3. Why doesn’t Earth become hotter with time as the Sun shines on it?
   A. The Sun gives off less energy every day.
   B. Earth sends back into space the same amount of energy it receives.
   C. Earth’s greenhouse effect is not strong enough to heat up the planet.

4. Which gases are most responsible for the warming that occurs with the greenhouse effect?
   A. nitrogen and oxygen
   B. methane and carbon monoxide
   C. carbon dioxide and water vapor

Matching

Directions: On the line before each definition, write the letter of the term that matches it correctly. Each term is used only once.

5. builds storm clouds as rapidly rising air cools
   A. conduction
   B. latent heat
   C. radiation
   D. temperature inversion
   E. unstable air
   F. convection

6. energy transfer by objects that are touching

7. cooler air trapped beneath warmer air

8. energy transfer by electromagnetic waves

9. energy transfer due to warm, rising air

10. changed when water changes state

Earth's Atmosphere