

Lesson Review

Vocabulary

Fill in the blanks with the terms that best complete the following sentences.

- 1 The _____ is a mixture of gases that surrounds Earth.
- 2 The measure of the force with which air molecules push on a surface is called _____.
- 3 The _____ is the process by which gases in the atmosphere absorb and reradiate heat.

Key Concepts

4 List Name three gases in the atmosphere.

5 Identify What layer of the atmosphere contains the ozone layer?

6 Identify What layer of the atmosphere contains almost 80% of the atmosphere's total mass?

7 Describe How and why does air pressure change with altitude in the atmosphere?

8 Explain What is the name of the uppermost layer of the atmosphere? Why does it feel cold there, even though the temperature can be very high?

Critical Thinking

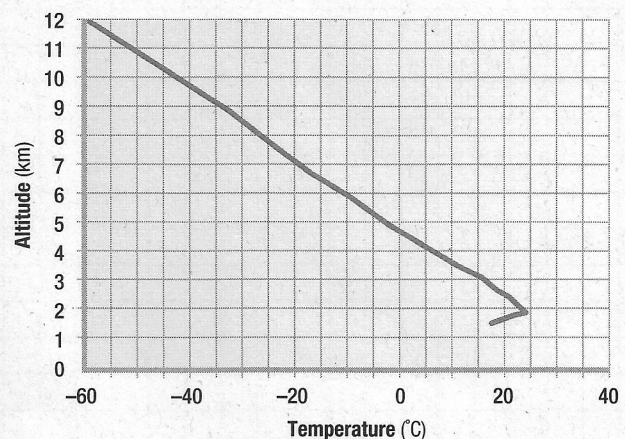
9 Hypothesize What would happen to life on Earth if the ozone layer was not present?

10 Criticize A friend says that temperature increases as altitude increases because you're moving closer to the sun. Is this true? Explain.

11 Predict Why would increased levels of greenhouse gases contribute to higher temperatures on Earth?

Use this graph to answer the following questions.

Changes in Temperature with Altitude



Source: National Weather Service. Data taken at Riverton, Wyoming, 2001

12 Analyze The top of Mount Everest is at about 8,850 m. What would the approximate air temperature be at that altitude? _____

13 Analyze What is the total temperature change between 3 km and 7 km above Earth's surface? _____

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In your own words, define the following terms.

1 radiation

2 convection

3 conduction

Key Concepts

4 Compare What is the difference between temperature, thermal energy, and heat?

5 Describe What is happening to a substance undergoing thermal expansion?

6 Explain What is the main source of energy for most processes at Earth's surface?

7 Summarize What happens when two objects at different temperatures touch? Name one place where it occurs in Earth's system.

8 Identify What is an example of convection in Earth's system?

Critical Thinking

9 Apply Why can metal utensils get too hot to touch when you are cooking with them?

10 Predict You are doing an experiment outside on a sunny day. You find the temperature of some sand is 28°C . You also find the temperature of some water is 25°C . Explain the difference in temperatures.

Use this image to answer the following questions.



11 Analyze Name one example of where energy transfer by radiation is occurring.

12 Analyze Name one example of where energy transfer by conduction is occurring.

13 Analyze Name one example of where energy transfer by convection is occurring.

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Fill in the blanks with the term that best completes the following sentences.

- 1 Another term for air movement caused by differences in air pressure is _____
- 2 Pilots often take advantage of the _____, which are high-speed winds between 7 km and 16 km above Earth's surface.
- 3 The apparent curving of winds due to Earth's rotation is the _____

Key Concepts

- 4 **Explain** How does the sun cause wind?

- 5 **Predict** If Earth did not rotate, what would happen to the global winds? Why?

- 6 **Explain** How do convection cells in Earth's atmosphere cause high- and low-pressure belts?

- 7 **Describe** What factors contribute to global winds? Identify areas where winds are weak.

- 8 **Identify** Name a latitude where each of the following occurs: polar easterlies, westerlies, and trade winds.

Critical Thinking

- 9 **Predict** How would local winds be affected if water and land absorbed and released heat at the same rate? Explain your answer.

- 10 **Compare** How is a land breeze similar to a sea breeze? How do they differ?

Use this image to answer the following questions.



- 11 **Analyze** What type of local wind would you experience if you were standing in the valley? Explain your answer.

- 12 **Infer** Would the local wind change if it was nighttime? Explain.

