

Review and Reinforce

11.1
6th grade

The Air Around You

Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ More than three fourths of the air we breathe is oxygen.
2. _____ Argon is the second most abundant gas in air.
3. _____ Plants need carbon dioxide to produce food.
4. _____ Without nitrogen in the air, a fire will not burn.
5. _____ When fuels such as coal and gasoline are burned they release nitrogen into the air.
6. _____ Condensed water vapor in the atmosphere forms clouds.
7. _____ Energy from the wind drives the motions in the atmosphere.

Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

8. atmosphere
9. water vapor
10. weather

Lesson _____

The Air Around You

Fill in the blank to complete each statement.

1. The amount of _____ in the air varies greatly from place to place and time to time.
2. Gases in air that are present in very small amounts are called _____ gases.
3. Earth is surrounded by an envelope of gases called the _____.
4. When gasoline is burned it releases the gas _____.
5. Clouds form when water vapor _____ out of the air.
6. The term used to describe the condition of Earth's atmosphere at a given place or time is _____.

Write the letter of the correct answer on the line at the left.

- | | |
|---|---|
| 7. ___ What do dust, smoke, salt, and chemicals have in common? | 8. ___ Which of these does a fire need to burn? |
| A They are gases in air. | A argon |
| B They make up water vapor in air. | B carbon dioxide |
| C They are particles in air. | C nitrogen |
| D They are found only in pure air. | D oxygen |
| 9. ___ Which of these do plants need to make food? | 10. ___ Which of these makes up about 21 percent of the atmosphere? |
| A argon | A argon |
| B carbon dioxide | B carbon dioxide |
| C nitrogen | C nitrogen |
| D oxygen | D oxygen |

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6th grade

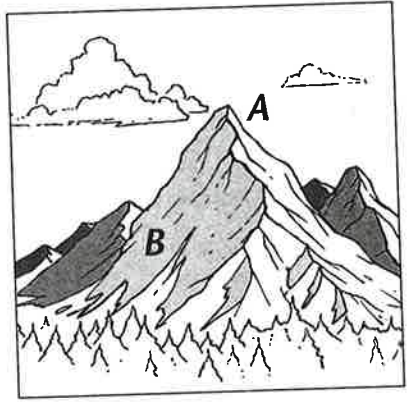
Review and Reinforce

Air Pressure

Understanding Main Ideas

Fill in the blank to complete each statement. Use the illustration to answer Questions 3–6.

1. When air pressure increases, the liquid in a mercury barometer _____.
2. An aneroid barometer does not use _____.
3. Air pressure is greater at point _____.
4. Altitude is greater at point _____.
5. Density of the air is greater at point _____.



Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

6. air pressure
7. barometer
8. density
9. mercury barometer
10. aneroid barometer
11. altitude

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Lesson Quiz

Air Pressure

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

- _____ To calculate the density of a substance divide its mass by its weight.
- _____ The higher the altitude, the lower the air pressure.
- _____ Most weather reports for the general public use millibars as units of air pressure.
- _____ As altitude increases, the density of the air increases.
- _____ Air pressure is the result of the weight of a column of air pushing on an area.
- _____ The level of mercury in a barometer falls as the air pressure falls.

Fill in the blank to complete each statement.

- Air pressure at sea level is _____ than air pressure at the top of a mountain.
- Two instruments used to measure air pressure are the mercury barometer and the _____.
- Air pressure doesn't crush you because molecules in air push _____.
- The amount of mass in a given volume of air is its _____.

Review and Reinforce

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6th grade

Layers of the Atmosphere

Understanding Main Ideas

Fill in the blank to complete each statement.

1. The middle layer of Earth's atmosphere is the _____.
2. The upper region of the stratosphere is warm because energy from the sun is absorbed by the _____.
3. The exosphere is the outer layer of the _____.
4. The _____ contains almost all the mass of the atmosphere.
5. The _____ is thicker over the equator than over the poles.
6. The lower layer of the thermosphere is the _____.

Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

7. stratosphere
8. thermosphere
9. troposphere
10. mesosphere

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Lesson Quiz

Layers of the Atmosphere

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ The troposphere is thickest over the equator.
2. _____ Water forms thin, feathery clouds of ice at the top of the exosphere.
3. _____ The upper stratosphere is cooler than the lower stratosphere.
4. _____ The mesosphere contains the ozone layer.
5. _____ The ionosphere is the lower layer of the thermosphere.
6. _____ Most meteoroids burn up in the ionosphere.

Write the letter of the correct answer on the line at the left.

- | | |
|--|---|
| <p>7. ___ Which layer of the atmosphere has no definite outer limit?</p> <p>A thermosphere
B stratosphere
C mesosphere
D troposphere</p> | <p>8. ___ In which layer does Earth's weather occur?</p> <p>A mesosphere
B stratosphere
C thermosphere
D troposphere</p> |
| <p>9. ___ Which layer is just above the stratosphere?</p> <p>A troposphere
B exosphere
C mesosphere
D thermosphere</p> | <p>10. ___ In which layer can air temperatures reach 1,800°C?</p> <p>A mesosphere
B thermosphere
C exosphere
D stratosphere</p> |

Review and Reinforce

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6th grade

Energy in Earth's Atmosphere

Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ Electromagnetic waves are classified according to wavelength.
2. _____ Visible light with the shortest wavelengths are red and orange light.
3. _____ Infrared radiation is visible to humans.
4. _____ During the day, the sky appears blue because of scattering.
5. _____ As it passes through the atmosphere, some infrared radiation is absorbed by the ozone layer.

Building Vocabulary

Match each term with its definition by writing the letter of the correct definition in the right column on the line beside the term in the left column.

- | | |
|--------------------------------|--|
| 6. _____ electromagnetic waves | a. a form of energy with wavelengths that are longer than those of red light |
| 7. _____ radiation | b. the direct transfer of energy by electromagnetic waves |
| 8. _____ infrared radiation | c. reflection of light in all directions |
| 9. _____ ultraviolet radiation | d. a form of energy that can travel through space |
| 10. _____ scattering | e. the process by which gases in the atmosphere hold heat |
| 11. _____ greenhouse effect | f. a form of energy with wavelengths that are shorter than those of violet light |

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Lesson Quiz

Energy in Earth's Atmosphere

Fill in the blank to complete each statement.

1. Sunburn can result from exposure to _____ radiation.
2. Red light has a _____ wavelength than violet light.
3. A natural process called _____ holds heat in Earth's atmosphere.
4. _____ occurs when particles and gases in the atmosphere disperse light in all directions.
5. Energy from the sun travels to Earth in the form of _____.
6. About 50 percent of the sun's energy that reaches Earth is _____ by land and water, which becomes heated.

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

7. _____ Some ultraviolet radiation is absorbed by clouds in the upper stratosphere.
8. _____ The direct transfer of energy by electromagnetic waves is called radiation.
9. _____ Electromagnetic waves are classified by distance between waves.
10. _____ Scattered light looks yellower than ordinary sunlight.

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Review and Reinforce

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Heat Transfer

Understanding Main Ideas

If the statement is true, write *true*. If the statement is false, change the underlined word or words to make the statement true.

1. _____ In the troposphere, heat is transferred mostly by conduction.
2. _____ Conduction works best in some solids.
3. _____ Air temperature is usually measured with a barometer.
4. _____ The upward movement of warm air and the downward movement of cool air form a convection current.
5. _____ The farther apart the molecules in a substance are, the better they conduct heat.
6. _____ In the Fahrenheit temperature scale, water freezes at 0° and boils at 100°.

Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

7. heat
8. conduction
9. thermal energy
10. convection

Place the outside corner, the corner away from the dotted line, in the corner of your copy machine to copy onto letter-size paper.

Lesson Quiz

Heat Transfer

Write the letter of the correct answer on the line at the left.

1. ___ In which substance would heat transfer by conduction work best?
A oxygen
B iron
C water
D alcohol
2. ___ Which is true of a pot and a penny with equal temperatures?
A they have the same thermal energy
B they are both gaining thermal energy
C the penny has more thermal energy
D the pot has more thermal energy
3. ___ How is heat transferred from the sun to Earth?
A by convection currents
B by conduction
C by radiation
D by thermal energy
4. ___ Which temperature is the freezing point of water in the Celsius scale?
A 100°
B 32°
C 10°
D 0°

Fill in the blank to complete each statement.

5. The transfer of heat between two substances that are in direct contact is called _____.
6. _____ measures the total energy of the particles in a substance.
7. The transfer of heat by the movement of a fluid is called _____.
8. The average amount of energy of motion of each particle of a substance is called _____.
9. Radiation is the direct transfer of energy by _____.
10. Only the first few meters of the troposphere are heated by _____.

Review and Reinforce

11.6
6th grade

Winds

Understanding Main Ideas

Answer the following questions in the spaces provided.

1. How does heating air affect its density and pressure?

2. What are two types of local winds?

3. Describe the movement of air over two nearby land areas, one of which is heated more than the other.

4. What causes local winds to form?

5. Identify where the sun's rays strike Earth most directly and least directly.

Building Vocabulary

On a separate sheet of paper, write a definition for each of these terms.

- 6. wind
- 7. anemometer
- 8. windchill factor
- 9. sea breeze
- 10. Coriolis effect

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Lesson Quiz

Winds

Write the letter of the correct answer on the line at the left.

1. ___ What is the movement of air parallel to Earth's surface called?
A the Coriolis effect
B windchill
C wind
D air pressure
2. ___ Which of the following is a calm area on Earth's surface where warm air rises?
A polar easterlies
B doldrums
C trade winds
D prevailing westerlies
3. ___ Which of the following occurs over a small area?
A polar easterlies
B the Coriolis effect
C horse latitudes
D sea breezes
4. ___ What is an anemometer used to measure?
A wind speed
B windchill
C air pressure
D wind direction

Fill in the blanks to complete each statement.

5. If the Earth did not rotate, global winds would follow a(n) _____ path.
6. Trade winds blow from the horse latitudes toward the _____.
7. The two qualities used to describe winds are _____ and speed.
8. A local wind that blows during the day from an ocean toward land is a(n) _____.
9. The increase in cooling that wind can cause is called the _____.
10. Temperature differences between the equator and poles produce _____ currents.