

CH 17: THE ATMOSPHERE STUDY GUIDE

Vocabulary

ozone, troposphere, stratosphere, mesosphere, thermosphere, summer solstice, winter solstice, autumnal equinox, spring equinox, heat, temperature, and isotherm

	Never	Sometimes	Usually	Always
I maintained a positive attitude				
I stayed focused and alert during class				
I asked questions when I was confused				
I participated in classroom discussion and answered questions				
I completed and turned in work from class				
I complete and look over my bellringers				
I concentrated on taking good notes to help me review				
I took my notebook home to study for the test				

Reviewing Content

Choose the letter that best answers the question or completes the statement.

- What is a description of atmospheric conditions over a long period of time?
 - Climate
 - Meteorology
 - Precipitation
 - Weather
- The bottom layer of the atmosphere in which we live is called the
 - mesosphere.
 - stratosphere.
 - thermosphere.
 - troposphere.
- This layer of atmosphere contains ozone that filters UV radiation.
 - Mesosphere
 - Stratosphere
 - Thermosphere
 - Troposphere
- The average kinetic energy of all the atoms and molecules that make up a substance is referred to as
 - radiation.
 - greenhouse effect.
 - temperature.
 - heat.
- The two principle absorbers of radiation emitted by Earth's surface are carbon dioxide and
 - nitrogen.
 - oxygen.
 - ozone.
 - water vapor.
- On a map showing temperature distributions, what are the lines connecting points of equal temperature?
 - Isobars
 - Isotemps
 - Isotherms
 - Equigrads
- Which gas is most abundant in clean, dry air?
 - Argon
 - carbon dioxide
 - nitrogen
 - oxygen
- Select the best description of air.
 - It is a compound.
 - It is an element.
 - It is a mixture.
 - It is mainly oxygen and carbon dioxide
- Which of the following is true about equinoxes?
 - They occur in June and December.
 - The sun's vertical rays are striking either the Tropic of Cancer or the Tropic of Capricorn.
 - Lengths of daylight and darkness are equal everywhere.
 - The length of daylight in the Arctic and Antarctic Circles is 24 hours.

Understanding Concepts

- Why are temperature variations greater over dry land than they are over water?
- Describe the ozone.
- In what ways can geographic position be considered a temperature control?
- Describe the two principle motions of Earth.
- Explain why Earth's atmosphere is mainly heated from the ground up.
- Describe the effects of cloud cover on air temperature.
- Why do temperatures increase in the stratosphere?
- What causes the position of the noon sun to vary by up to 47 degrees over a year's time?

Critical Thinking

18. Analyzing Data - Using the data in the table, determine which types of surfaces have the highest average albedos.

Albedo of Various Surfaces	
Surface	Percent Reflected
Clouds, stratus <300 meters thick	25-63
150-300 meters thick	45-75
300-600 meters thick	59-84
Average of all types and thicknesses	50-55
Concrete	17-27
Crops, green	5-25
Forest, green	5-10
Meadows, green	5-25
Ploughed field, moist	14-17
Road, blacktop	5-10
Sand, white	30-60
Snow, fresh-fallen	80-90
Snow, old	45-70
Soil, dark	5-15
Soil, light (or desert)	25-30
Water	8*

*Typical albedo value for a water surface. The albedo of a water surface varies greatly depending upon the sun angle.

19. Inferring - Yakutsk is located in Siberia at about 60 degrees north latitude. This Russian city has one of the highest average annual temperature ranges in the world: 62.2°C. Explain the reasons for the very high annual temperature range.
20. Making Generalizations - Speculate on the changes in global temperatures that might occur if Earth had substantially more land area and less ocean area than it does at present.
21. Applying Concepts - Why are carbon dioxide and water vapor such important components in Earth's atmosphere?

Use the diagram below to answer the question 24 & 25

22. Identify what hemisphere each city is in and explain why.
23. Describe the possible reasons for different temperatures for city A and city B.

