

Chapter 19 Air Pressure and Wind

Section 19.1 Atmosphere Characteristics


This section explains what air pressure is and how it is measured. It also describes the factors that cause and control wind.

Reading Strategy

As you read, write the main ideas for each topic in the table. For more information on this Reading Strategy, see the **Reading and Study Skills** in the **Skills and Reference Handbook** at the end of your textbook.

Topic	Main Ideas
Air Pressure Defined	Air pressure is the weight of air above. It is exerted in all directions.
Measuring Air Pressure	a.
Factors Affecting Wind	b.

Air Pressure Defined

- Air pressure is the pressure exerted by the _____ of air above a certain point.
-  Why doesn't the weight of air above a table crush it? _____

- Is the following sentence true or false? Average air pressure is about the same as that produced by a column of water 10 m high. _____

Measuring Air Pressure

- Circle the letter of the instrument used to measure air pressure.
 - thermometer
 - barometer
 - anemometer
 - aneroidometer

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5. ➡ When air pressure increases, the mercury in the tube of a mercury barometer _____.
6. Is the following sentence true or false? The mercury barometer was invented by Galileo. _____
7. List two advantages of the aneroid barometer over the mercury barometer. _____

Factors Affecting Wind

8. ➡ Wind is caused by horizontal differences in _____.
9. ➡ Is the following sentence true or false? Pressure differences that cause wind are generated by unequal heating of Earth’s surface. _____
10. ➡ What three factors combine to control wind? _____

11. ➡ How are isobars related to pressure gradients? _____

12. ➡ Due to the Coriolis effect, winds in the Northern Hemisphere are deflected to the _____.
13. Is the following sentence true or false? The Coriolis effect occurs because Earth rotates underneath the path of moving objects. _____
14. How does friction affect wind? _____

15. _____ are high-altitude fast-moving rivers of air that travel from west to east.
16. Complete the table below.

Factors That Affect Wind		
Factor	Ultimate Cause	Effect on Wind
Pressure Differences	unequal heating of Earth's surface by the sun	
Coriolis Effect		
Friction		