

Atmospheric Circulation

Standard 3 Objective 1 Indicator d

Chapter 22: Section 3: Directed Reading Pages 561-564

Section: Atmospheric Circulation (page 561)

1. What causes the movement of air worldwide?
2. Why does air near Earth's surface flow from the poles to the equator?
3. Where do low-pressure regions form?

THE CORIOLIS EFFECT (page 561)

4. What is the circulation of the atmosphere and of the oceans is affected by?
5. Why does air follow a curved path?
6. The curving of the path of a moving object from an otherwise straight path due to earth's rotation is called the _____.
7. In which direction does the Coriolis effect deflect moving objects in the Northern Hemisphere? And in the Southern Hemisphere?
8. What are the three looping patterns of air flow in each hemisphere called?
9. The prevailing winds that blow from east to west from 30° latitude to the equator in both hemispheres are called the _____.
10. What are the the prevailing winds that blow from west to east through the United States called?
11. What are the prevailing winds that blow from east to west between 60° and 90° in both hemispheres?

In the space provided, write the letter of the description that best matches the term or phrase.

- | | |
|-----------------------------------|---|
| _____ 12. doldrums | a. narrow bands of winds formed when warm equatorial air meets the cooler air of the middle latitudes |
| _____ 13. horse latitudes | b. narrow bands of strong winds that blow in the upper troposphere |
| _____ 14. jet streams | c. a zone of low pressure at the equator where the trade wind systems meet |
| _____ 15. subtropical jet streams | d. subtropical high-pressure zones with weak and variable winds |

LOCAL WINDS (page 564)

16. Air movement influenced by local conditions and local temperature variations often cause _____, which are not part of the global wind belts.
17. As warm air above land rises and cool air from above water moves in to replace it, a cool wind moving from water to land, called a _____, forms in the afternoon.
18. At night, as warm air above water rises and cool air from above land moves out to replace it, a cool wind moving from land to water, called a _____ forms.
19. During the day in mountainous regions, a gentle breeze called a _____ forms when warm air from the valleys moves.

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20. Explain how the Coriolis Effect affects wind flow.
21. Name and describe Earth's three global wind belts.
22. Summarize the importance of the jet streams.
23. Identify two factors that create local wind patterns.
24. Determine whether wind moving south from the equator will curve eastward or westward because of the Coriolis Effect.