

Chapter 19 Air Pressure and Wind

Section 19.2 Pressure Centers and Winds

This section describes cyclones, anticyclones, and global wind patterns.

Reading Strategy

As you read about pressure centers and winds, complete the table indicating to which hemisphere the concept applies. Use *N* for Northern Hemisphere, *S* for Southern Hemisphere, or *B* for both. 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.

Cyclones rotate counterclockwise.	a.
Net flow of air is inward around a cyclone.	b.
Anticyclones rotate counterclockwise.	c.
Coriolis effect deflects winds to the right.	d.

Highs and Lows

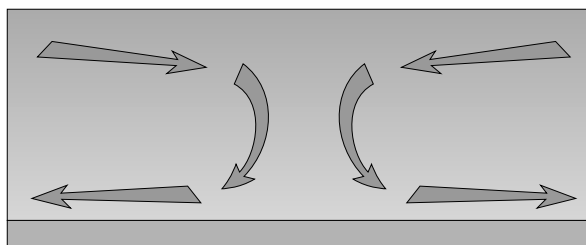
- Cyclones are centers of _____ pressure associated with clouds and precipitation.
- 👉 Is the following sentence true or false? In an anticyclone, the value of the isobars increases from the center to the outside.

- 👉 List the factors that cause winds in the Northern Hemisphere to blow inwards and counterclockwise around lows.

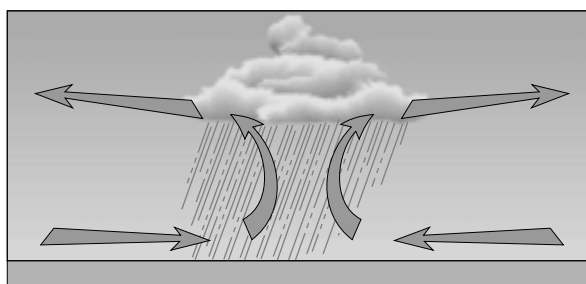
- 👉 Is the following sentence true or false? In the Southern Hemisphere, winds around a cyclone flow outward.

- These figures show side views of the air movement in a high and low. Select the letter of the figure that identifies each of the following air movements.

- _____ surface low
- _____ divergence aloft
- _____ surface high
- _____ surface divergence
- _____ calm, clear weather



A.



B.

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6. Why do weather reports always emphasize cyclones and anticyclones? _____

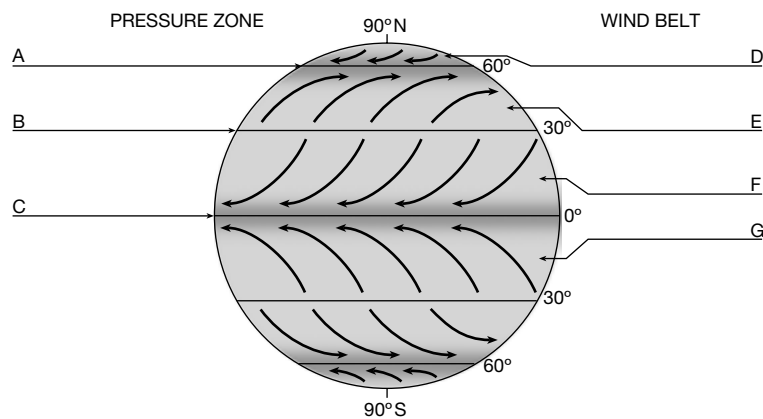
Global Winds

7. 🗑️ How does the atmosphere balance the amounts of energy received at different parts of Earth's surface?

8. Is the following sentence true or false? Earth's rotation causes the two-cell convection system to break down into smaller cells.

9. Select the appropriate letter in the figure that identifies each part of the global circulation model.

- _____ NE trade winds
- _____ polar easterlies
- _____ equatorial low
- _____ westerlies
- _____ subtropical high
- _____ SE trade winds
- _____ subpolar low



10. In which zone in the figure does sinking dry air produce deserts in some areas? _____
11. Circle the letter of the winds near the equator that blow from easterly directions.
- | | |
|----------------|---------------------|
| a. jet streams | b. westerlies |
| c. trade winds | d. polar easterlies |
12. The interaction of westerlies and polar easterlies produces the _____.
13. Is the following sentence true or false? Inward and upward airflow at the equatorial zone is associated with clouds and precipitation.

14. In North America, seasonal temperature differences over _____ disrupt the global pressure pattern.
15. What causes monsoons? _____
