

Coriolis Effect

Apparent Wind Shift

WEATHER
Senior High School
Earth Science

Objective:

Build understanding of Coriolis Effect on global wind and weather patterns.

Procedure:

Observe a demonstration about the Coriolis Effect before beginning this worksheet.

1. Because of the Coriolis Effect, wind in the northern hemisphere always shifts to the _____ (*right or left*) and shifts to the _____ (*right or left*) in the southern hemisphere.

Answer the following questions on the "World Continents" map. Use pencil.

2. Using the information from the previous worksheet "Global Winds: Hadley Cells", label all the zones of Low pressure (0° , 60°) with several RED **L** 's and the zones of High pressure ($\sim 30^{\circ}$, 90°) with several BLUE **H** 's.
3. Recall the effects that the Coriolis Effect has on wind in each of the hemispheres. Connect all zones of HIGH pressure (blue **H** 's) to zones of Low pressure (red **L** 's) with (green) curved lines to represent how the wind actually moves across the surface of the Earth. (*Note: Be sure that you have your lines curving the correct direction for each hemisphere.*)

Check with your teacher before moving to the next section.

4. **Doldrums.** The zone of low pressure at the equator is called the Doldrums because there is very little wind and sailing ships would get stuck in this zone for weeks at a time causing the sailors to be extremely bored while they waited for the wind to fill their sails. Label this zone on the edges of your map.
5. **Trade Winds.** The trade winds blow between 30°N and the equator and 30°S and the equator. They receive their name because these winds carried many of the trade ships from Europe to the new world, America. Label the trade winds on the edges of your map.
6. **Prevailing Westerlies.** These winds move air between 30°N and 60°N in the Northern Hemisphere and between 30°S and 60°S in the Southern Hemisphere. They get their name because they move weather from the West to the East across those latitudes. Label these on the edges of your map.
7. **Polar Easterlies.** These winds blow between the poles and the 60°N (in the N. Hemisphere) and 60°S (in the S. Hemisphere). They drive wind from the East to West at each of the poles. Label them on the edges of your map.
8. Locate Billings, Montana ($45.8^{\circ}\text{ N } 108.5^{\circ}\text{ W}$) on your map and label it with a yellow star.
9. **ESSAY:** Explain why most of the weather that Billings receives originates to the West of us. Use details from this worksheet to provide evidence.