

Coriolis Effect Activity

How does Earth's rotation affect wind?

If the earth was not spinning, the wind would always blow straight from the south in the Southern Hemisphere, and from the north in the Northern Hemisphere pushing the surface ocean currents straight as well. However, the earth DOES spin (rotate). This turning of the earth has a very important effect on the wind, called the Coriolis Effect, deflecting the winds and ocean currents around the earth to the right in the Northern Hemisphere and to the left in the Southern Hemisphere. The Coriolis Effect is zero at the equator. The Coriolis Effect states that because the Earth is spinning, surface air and waters move in a clockwise direction in the Northern Hemisphere and in a counterclockwise direction in the Southern Hemisphere.

PREDICT:

What will happen when you or your partner attempts to draw a straight line from the North Pole to the equator and from the South Pole to the Equator, as the other person rotates a balloon slowly?

MATERIALS:

2 balloons per group, 2 markers

PROCEDURE:

- Blow up a balloon and tie it off. Try to get the balloon as round as possible. (This is the Earth.)
 - Estimating the middle of the balloon draw a line around the middle of the balloon. **This represents the equator.**
 - One person should rotate the balloon **SLOWLY** to the **right** while the other person draws a line straight **down from the top of the balloon** to the center (equator).
 - One person should rotate the balloon **SLOWLY** to the **right** while the other person draws a line from the **bottom of the balloon straight up to the center** (equator) as the balloon rotates.
- CHANGE MARKERS...
- One person should rotate the balloon **SLOWLY** to the **left** while the other person draws a line straight **down from the top of the balloon** to the center (equator).
 - One person should rotate the balloon **SLOWLY** to the **left** while the other person draws a line from the **bottom of the balloon straight up to the center** (equator) as the balloon rotates.

WHAT DO YOU THINK?

1. What happened to the line as you rotated the balloon?
2. What happens to the line as you got closer to the center of the balloon?
3. What is the relationship between the direction of motion of the balloon and the wind currents on Earth?
4. How does this activity demonstrate the Coriolis effect?

CHALLENGE:

5. How might changing the speed at which the balloon is rotated affect your results?
6. Repeat the activity using a different balloon and speed (slower or faster) to see if your prediction was correct? Explain what you observed.