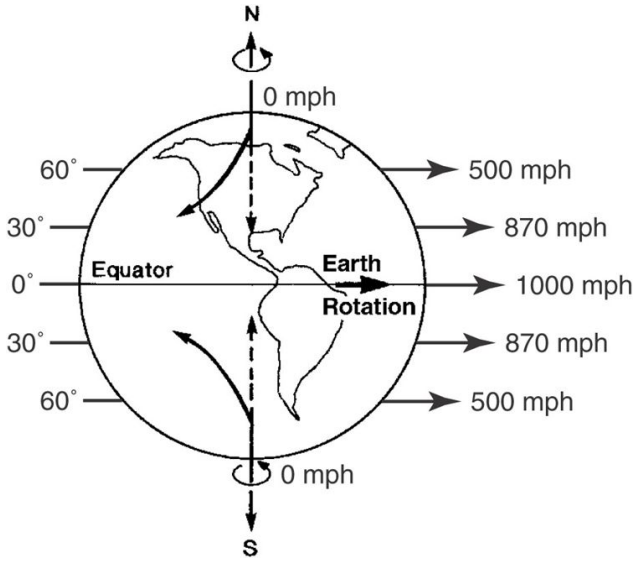
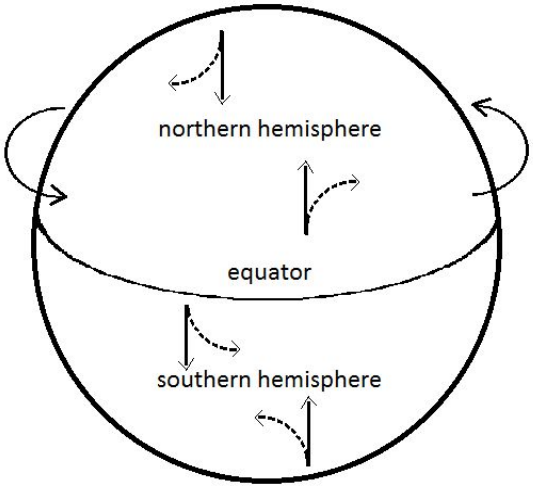
Earth Science Name: _____

The Coriolis Effect





Earth Rotates in a Counter-Clockwise Direction

The Coriolis effect describes the pattern of deflection taken by objects not firmly connected to the ground as they travel long distances around and above the Earth. The Coriolis effect is responsible for many large-scale weather patterns.

The key to the Coriolis effect lies in the Earth's rotation. Specifically, the Earth rotates faster at the Equator than it does at the poles. Earth is wider at the Equator, so to make a rotation in one 24-hour period, equatorial regions race nearly 1,674 kilometers per hour. Near the poles, the Earth rotates at a sluggish .00008 kph.

The development of weather patterns, such as cyclones and trade winds, are examples of the impact of the Coriolis effect.

In the Northern Hemisphere, currents are deflected to the right. This causes storm systems such as hurricanes to rotate counter-clockwise.

In the Southern Hemisphere, currents are deflected to the left. As a result, storm systems such as cyclones rotate clockwise.

Outside storm systems, the impact of the Coriolis effect helps define regular wind patterns around the globe including the trade winds, the prevailing westerlies, & the polar easterlies.

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Understand Main Ideas:

1. What is the coriolis effect?

2. What does the coriolis effect do to storm systems in the Northern Hemisphere?

3. What does the coriolis effect do to storm systems in the Southern Hemisphere?

4. Why does Earth rotate faster at the equator than it does at the poles?

Think Critically:

5. What would the weather be like on Earth without the Coriolis Effect?