



STUDENT WORKSHEET

# Atmospheric Pressure and the Coriolis Effect

## Part 1

Imagine you are floating above Earth's north pole. Which direction does Earth rotate from your viewpoint above the pole?



Circle one:    clockwise            counter-clockwise



Now imagine you are floating above Earth's south pole. Which direction does Earth rotate from your viewpoint above the pole?



Circle one:    clockwise            counter-clockwise



At Earth's poles are areas of high atmospheric pressure (indicated by H), and a bit closer to the equator are low pressure areas (indicated by L). Draw arrows to indicate the direction air travels on this map.



Explain why you drew the arrows the way you did.

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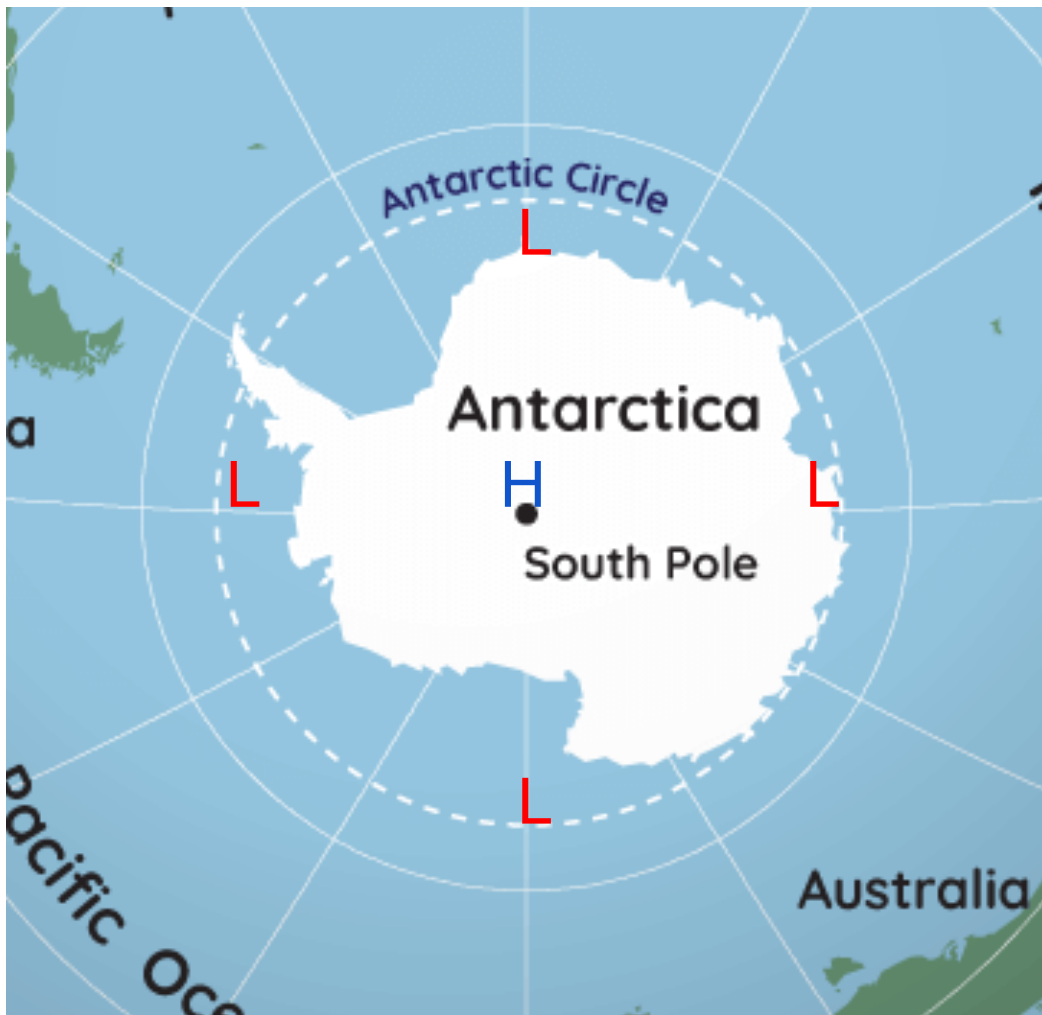
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Think about what you know about the direction Earth rotates and the direction wind travels. Predict how the wind will move as Earth rotates. Write your prediction here:

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Now, ask a partner to slowly rotate this page in the correct direction as you draw arrows showing the wind direction. Describe what is happening. Does this match your prediction?

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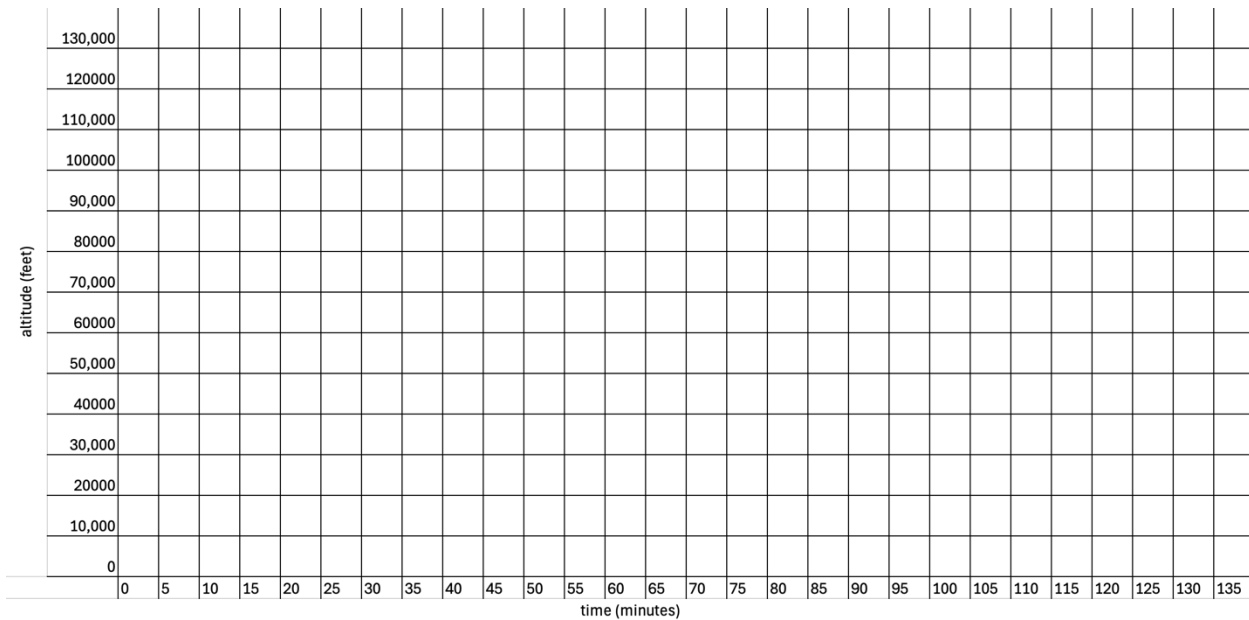
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## Part 2

The ASTHROS mission will rise to a height of approximately 130,000 feet where it will circle Antarctica while studying star-forming regions in space. Use the graph below to plot the balloon's progress as it rises at a rate of 1,000 feet per minute.



How long will it take to reach its target altitude? \_\_\_\_\_



Now think about what you know about helium balloons as they rise. Look at the photo of a high-altitude balloon in Antarctica before launch. Sketch what you think the balloon will look like at its target altitude and explain your thinking.

High altitude balloon at Earth's surface

High altitude balloon at 130,000 feet



Explain why you drew the balloon the way you did: \_\_\_\_\_

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