

Bellringer **REVIEW**:

- What causes high pressure systems?
- What's an effect of a low pressure system?

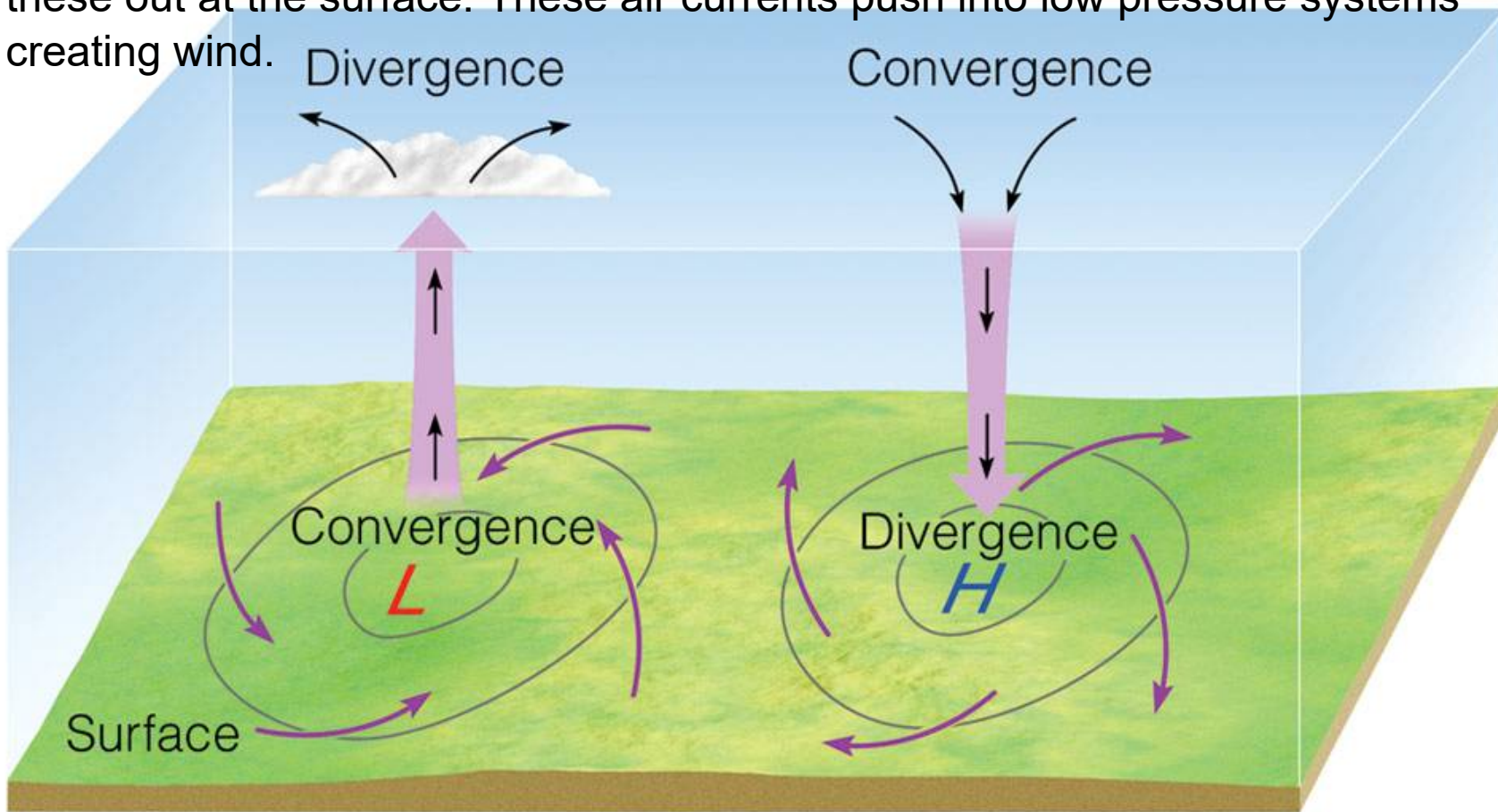
Learning Objectives:

- I can explain how uneven heating of Earth's atmosphere combined with the Coriolis effect create an atmospheric circulation system including, Hadley cells, trade winds, and prevailing westerlies that move heat energy around Earth..

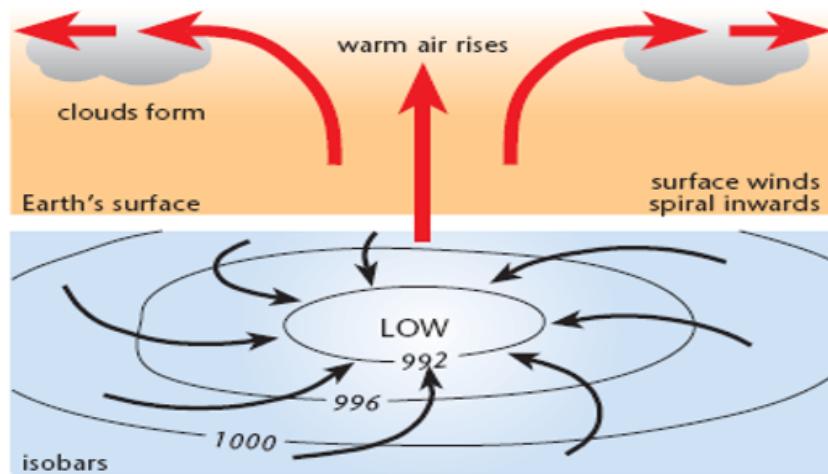
Check for Understanding Questions:

- What are some things that cause wind?
- What causes the Coriolis Effect?
- What two things create an atmospheric circulation system?

As the cold jet stream converges and pushes down, the coriolis effect pushes these out at the surface. These air currents push into low pressure systems creating wind.



Causes of low pressure



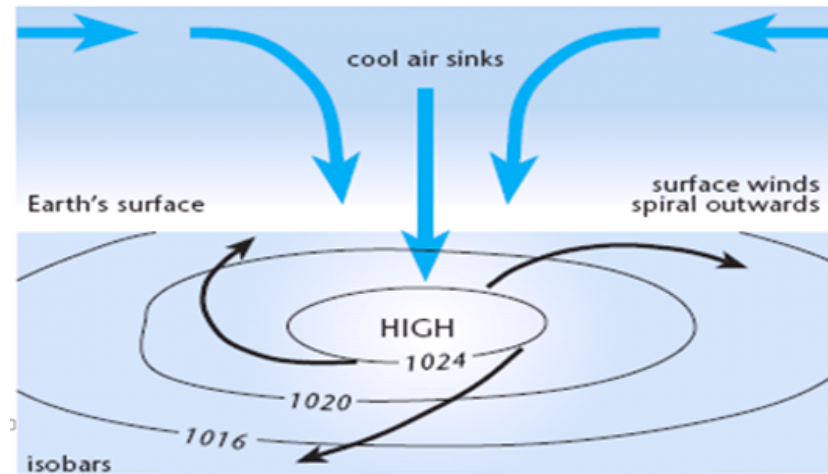
What are the weather effects?

Unstable rising air causes unsettled and changeable weather.

Typically depressions bring:

- cloudy skies
- low levels of sunshine
- wet weather
- temperatures that are mild for the time of year
- windy conditions
- changeable weather.

Causes of high pressure



What are the weather effects?

Typically these pressure belts bring stable weather conditions:

- clear skies
- sunshine
- dry weather
- high day and low night temperatures
- calm weather
- dew and frost
- fog and mist

Weather Project

During this week we will be watching the weather. We will record the forecasted high and low temperatures for each day. Also record what kind of weather occurs, for example: cloudy, rainy, cold, clear, sunny, etc. We will record the actual temperatures on the following day. All data will be recorded into data tables as seen below.

| Forecast temperatures and weather | | | |
|-----------------------------------|---------|--------|---------|
| Day | High °F | Low °F | Weather |
| Mon | | | |
| Tue | | | |
| Wed | | | |
| Thurs | | | |
| Fri | | | |

| Actual temperatures and weather | | | |
|---------------------------------|---------|--------|---------|
| Day | High °F | Low °F | Weather |
| Mon | | | |
| Tue | | | |
| Wed | | | |
| Thurs | | | |
| Fri | | | |

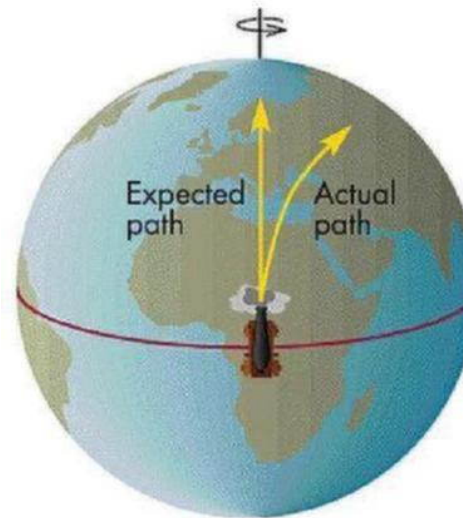
Look up your favorite weather app or news and copy down the above information. If you'd like to keep track of additional information (dew point, humidity, etc.) go for it!

The Coriolis Effect

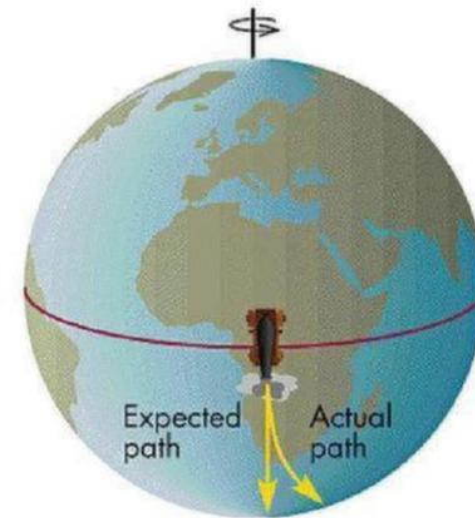
Path Without Coriolis Effect



Path With Coriolis Effect

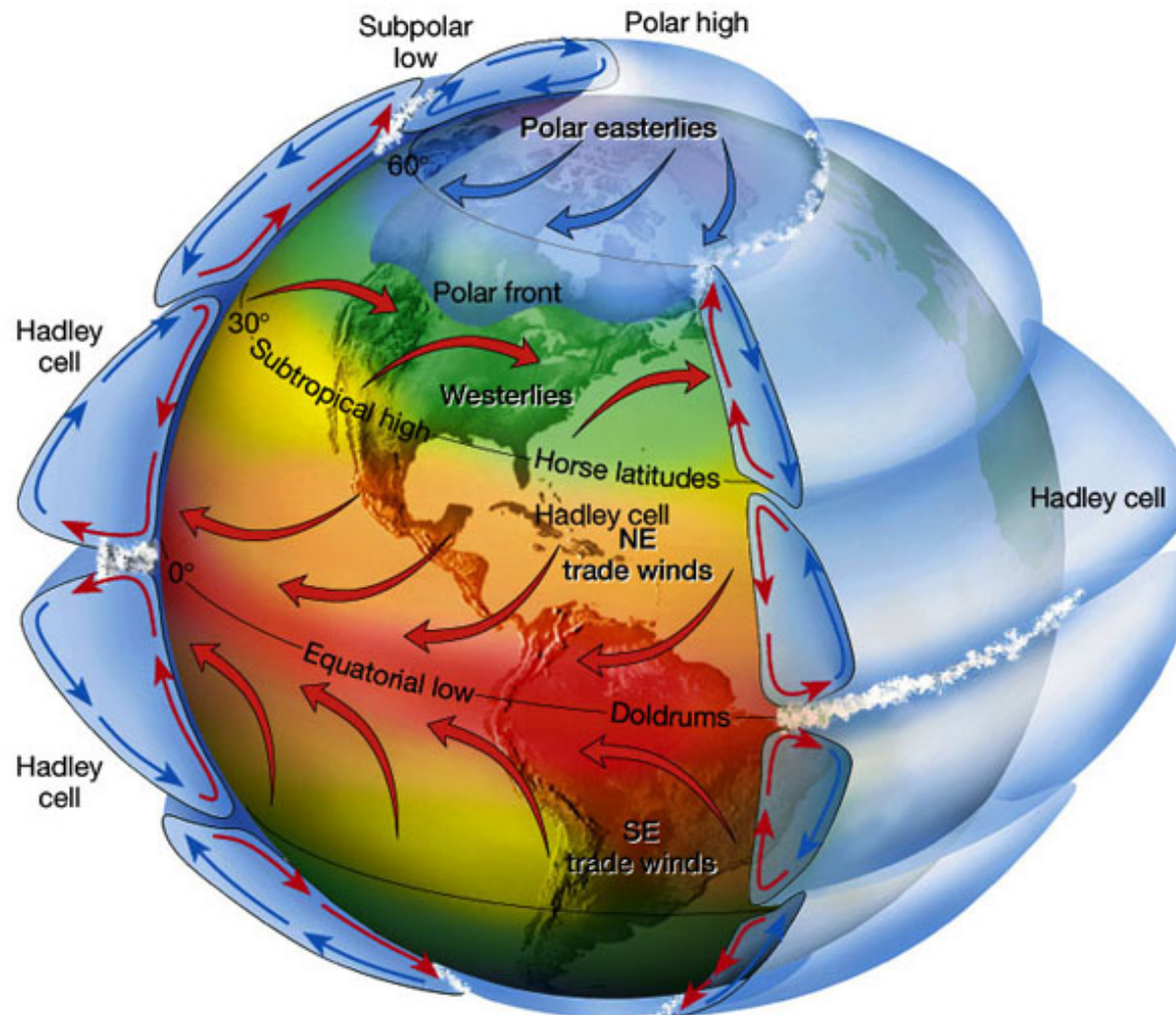


A Projectile fired northward



B Projectile fired southward

Physics explains that the angular momentum must be conserved, if a cannon ball is shot from the equator it's already moving sideways. Watch the video of the MIT students on the rotation platform. Pay attention to the ball and how it moves in comparison to their movement.



As the surface of the earth heats up and creates convection cycles, the coriolis effect causes these currents to create the atmospheric circulation systems as seen above. Watch the PBS video clip explaining the coriolis effect more fully.

Check for Understanding Questions:

- What are some things that cause wind?
- What causes the Coriolis Effect?
- What two things create an atmospheric circulation system?

Learning Objectives: Did you accomplish them?

- I can explain how uneven heating of Earth's atmosphere combined with the Coriolis effect create an atmospheric circulation system including, Hadley cells, trade winds, and prevailing westerlies that move heat energy around Earth..

Self-Evaluation

- How well did you understand the material today?
(1-Lost, 2- understand, 3-can teach it)
- How well did you and your team members participate in class?
(1-didn't do anything, 2-Bare minimum, 3-fully participated)