

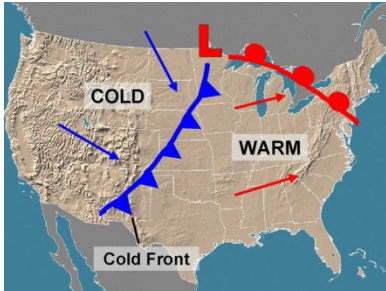
## Weather & Winds Review

This should NOT be a large component of the test, but it is helpful to look over at least once. That way if you have any MC questions on this topic you have a better chance of picking out a correct answer. If this is a FR question, I will go on strike.

Weather: Short term atmospheric condition, typically lasts for hours to days.

Me: What's the weather?

You: Cloudy, warm, cold, humid, raining, windy, etc.



**Warm Fronts:** Large masses of air that bring warmer air temps

**Cold Fronts:** large masses of air that bring colder air temps. Most thunderstorms are produced along cold front boundaries.

Why? As dense cold air sinks, it pushes the warmer air up. In some conditions, this warm air will be unstable and as it rises will produce towering clouds called thunderheads. These clouds will produce thunderstorms.

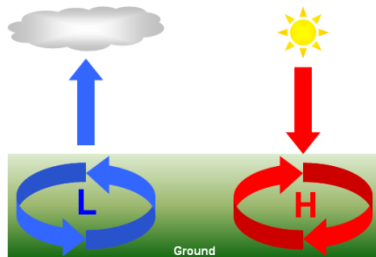


Blue mass: cold front (heavy, sinks)  
Green mass: warm front, being pushed up (hot air rises)  
Thunderhead cloud produced

Weather can also be impacted by **atmospheric pressure**. Due to unequal heating of the earth's surface, there are some areas of high pressure and other areas of low pressure. Areas of high pressure usually bring sunny, warm to hot weather. North Texas' hot summer weather is usually due to a cap of high pressure sitting over us in July, August and early September. Low pressure systems usually bring clouds and stormy weather with them. WHY? It's very complex and don't need to know why for APES. But consider taking a meteorology class as an elective if interested.

Easy visual below:

Low= bad weather



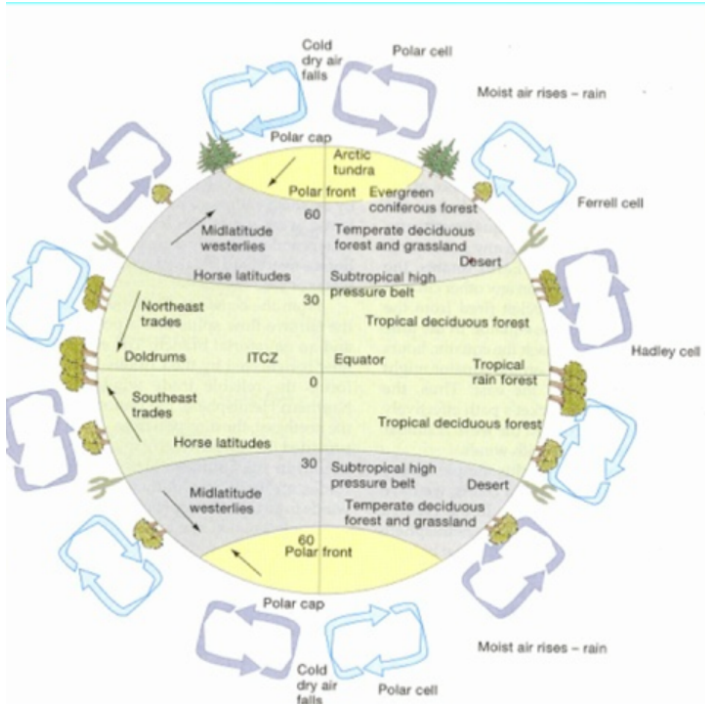
High= sunny weather



Cool fact: Hurricanes and tornadoes are also low pressure systems!

**Changing weather patterns:** We expect more EXTREME WEATHER in the future due to climate change. Some places will get even rainier (Bangladesh, so worsening flooding), and some place may experience more severe draughts (states like Texas are expected to have more frequent, extreme draughts).

## Global Winds



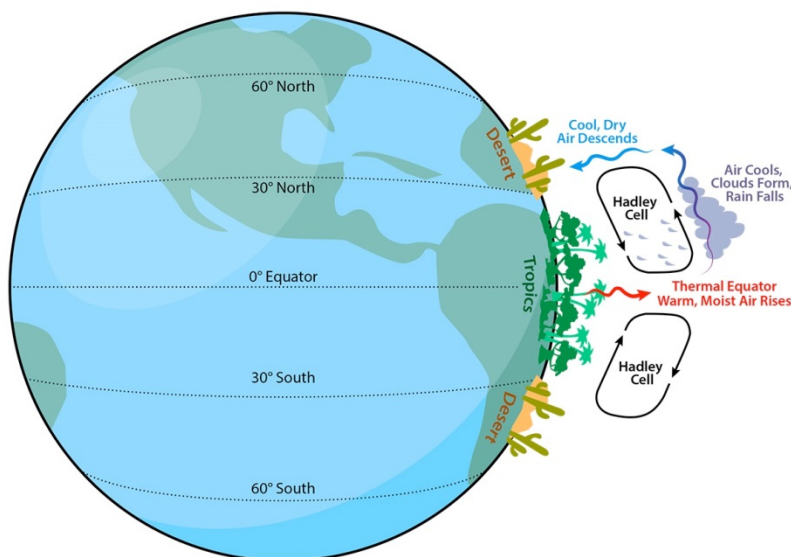
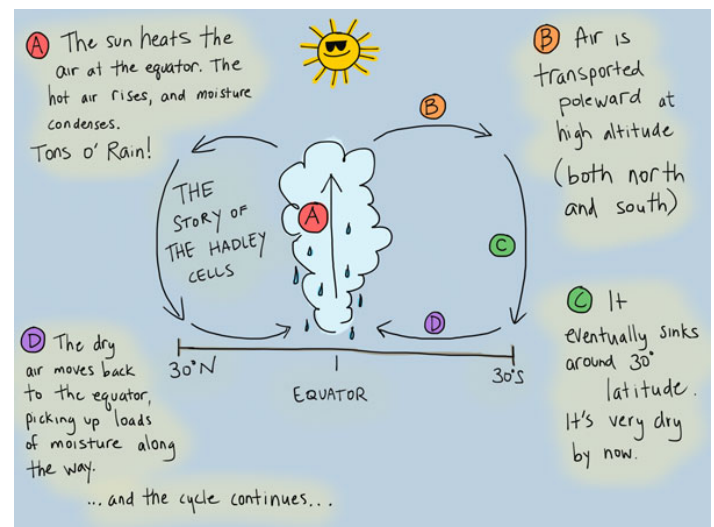
Heat and moisture are distributed over the earth's surface by vertical air currents that form six large convection cells.

**Polar Cells:** Cold air, flowing from the poles. Found between 60-90° North and South of the equator

**Farrel Cells:** Found between 30-60° north and south of the equator

**\*\*Hadley Cells:** Found between equator and 30° north and south of the equator.

**\*\*Let's look at a Hadley cell more closely.** These cells are responsible for the great rainforests AND deserts on Earth.



The direction of airflow and the rising and falling of air masses in these convection cells determine the earth's general climate zones.

The results of this heat and moisture distribution lead to forests, grasslands and deserts that make up the earth's biomes. (go back and look at the map at the top of this page...Shows distribution of biomes)