

What is the difference between weather and climate?

- **Weather** : The day to day characteristics of atmospheric conditions
: basically it is climatic events that takes place during a short period of time in a local area.

Elements of Weather: All of these things impact the weather in your area

- Air temperature
- Air pressure (decreases with elevation)
- Wind (moving air)
- Humidity (moisture in the air)
- Precipitation (rain, snow, hail)
- Cloud cover

➤ **Climate:** A climatic event that takes place over a large area and or over a long time period

➤ **LOWERN....Factors that Affect Climate:**

These factors affect climate all over the world.

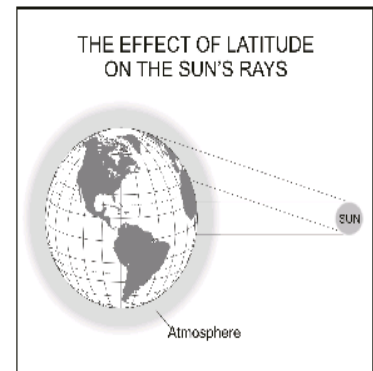
Not every factor will always play a role in the climate where you live

<p><u>L</u>ATITUDE <u>O</u>CEAN CURRENTS <u>W</u>EATHER <u>E</u>LEVATION <u>R</u>ELIEF <u>N</u>EAR WATER</p>	<p><i>The first letter of each factor can be combined to make a simple phrase that will help you remember these 6 climate factors. LOWERN</i></p> <p><u>Not every factor will impact the weather in your area....</u></p>
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Latitude

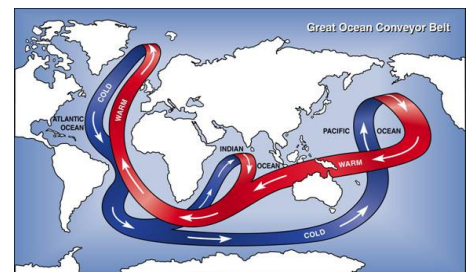
As distance from the equator (latitude) increases, the sun's rays travel farther and hit the earth's surface at an angle which spreads the sun's energy over a greater area

- The general rule for latitude is that the farther away from the equator you are the less energy that is reaching the ground at any point in time.
- Therefore, polar regions are much cooler than tropical and equatorial regions

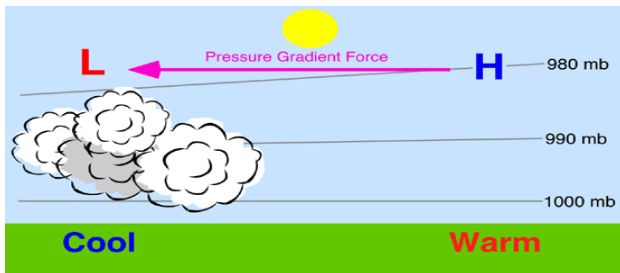


Ocean Currents

- Wind blows over ocean currents onto land
- Warm currents heat the air above the water causing a milder wetter climate even at higher latitudes
- Cold currents lead to cold dry climates, due to the fact that cold air cannot evaporate as much water as warm
- There is a moderating effect on coastal climates.
- These currents drive weather patterns, especially precipitation levels.



Wind and Air Pressure

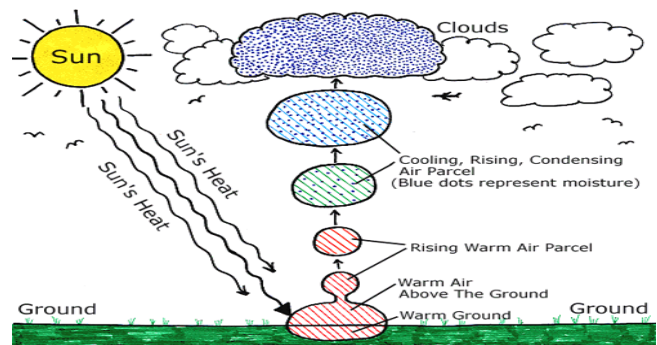


- The weight of air is called air pressure.
- Wind is caused by differences in pressure resulting from differential heating of the earth's surface
- As the air molecules are heated they move more rapidly decreasing the density of an air mass and it rises. **Areas of warm rising air have high pressures**

- Cold air is dense causing low air pressure.
- These movements lead to three distinct cells of air circulation in each hemisphere

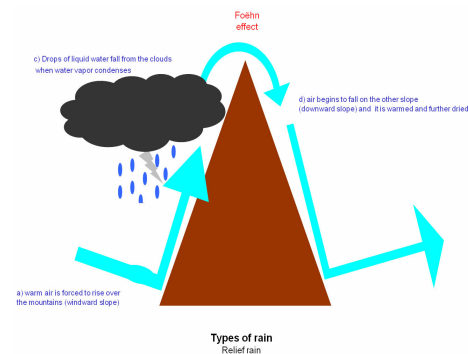
Elevation

- As altitude increases, the corresponding temperature of air decreases
- As warm moist air rises, its temperature cools causing condensation (clouds)
- At higher altitudes, you will more precipitation in the form of rain or snow



Relief

- Mountains form a natural barrier that cause air masses to rise
- As air is forced to rise it expands as gravity decreases, it becomes less dense and cools, leading to condensation.
- This happens on the windward side of the mountain.
- As air descends on the other side of the mountain (leeward side) the mountain, the other it will become **unsaturated (dry)** and the temperature will increase



Nearness to Water

- Water bodies provide a source of moisture for the land masses of the world
- Water bodies also have a moderating affect on the climates of the land masses near to them
- In the summer the water acts like an air conditioner to keep the air temperatures cool
- In the winter water acts like a heater to keep the temperatures from getting too cold
- This affect is most noticeable in the mid-latitudes where there is a constant onshore wind

