

Atmospheric Moisture and Humidity

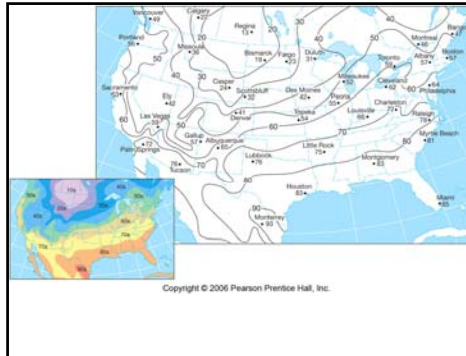


Temperature measurement

Daily maximum and minimum are measured

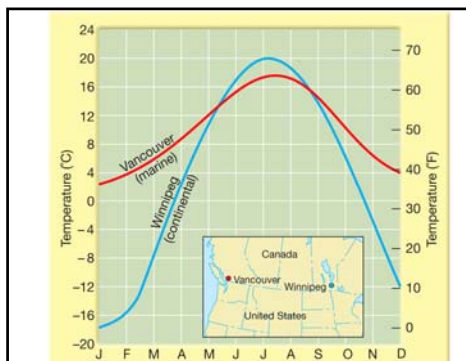
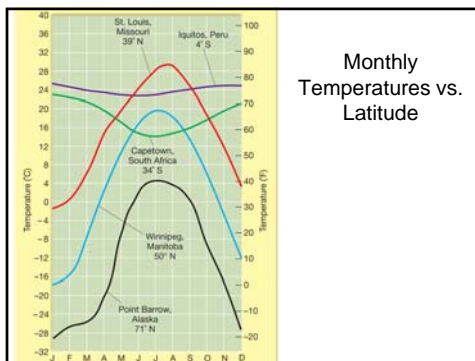
Other values calculated from these

- Daily temperature range
- Daily mean temperature
- Monthly mean temperature
- Annual mean temperature
- Annual temperature range



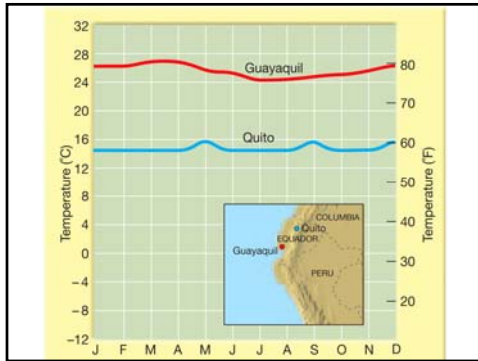
Isotherm

- Line of equal temperature
- Divides map into areas warmer than that temperature and areas cooler than that temperature
- Maps with isotherms use constant difference from one isotherm to the next
- Often colored for ease of understanding



Land-water relationship

- Water moderates the temperature
- Warmer winters and cooler summers near large bodies of water

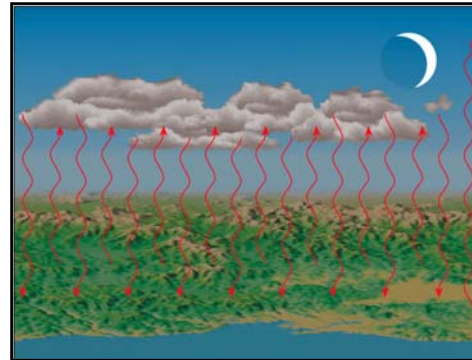
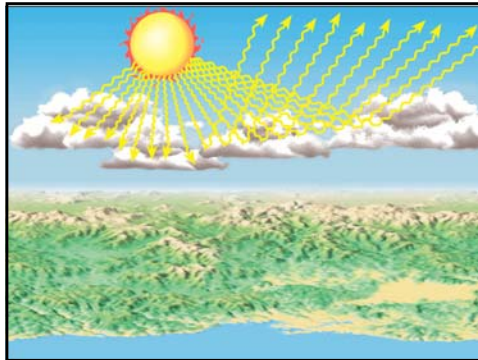


Changes in temperature with change in elevation

- Two different mechanisms
 - Earth's atmosphere is heated from below
 - Gases cool as they expand

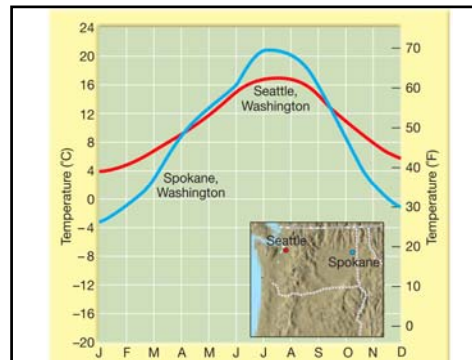
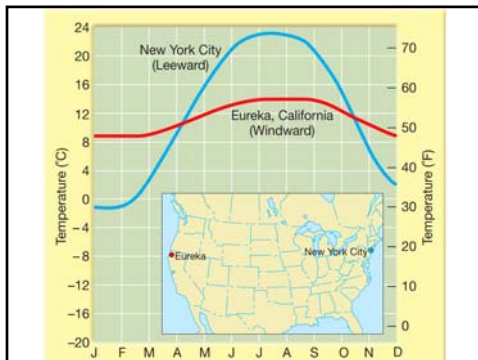
Earth's atmosphere is heated from below

- It is warmer closer to the sea level
- It is cooler at higher altitudes
- **Environmental lapse rate**
 - About 6.5° C / 1000 m
 - About 3.5° F / 1000 ft



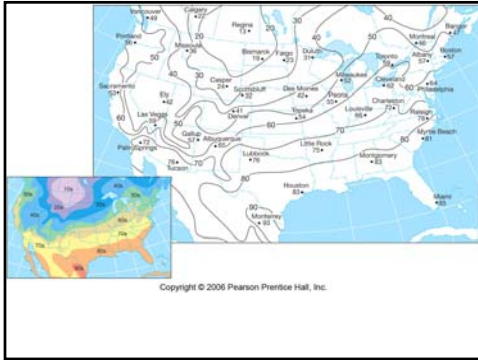
Cloudiness

- Daytime clouds shade surface, reflect energy away from area
- Nighttime clouds blanket area, reflect heat energy back toward Earth's surface



Geographic position

- Western sides of ocean basins get equatorial heat from ocean currents
 - More moderate winter temperatures on east coasts of continents
- Eastern sides of ocean basins have cold polar currents
 - Cooler year-round temperatures on west coasts of continents



- ### Controls of Temperature
- Day length
 - Sun angle
 - Land-water relationship
 - Geographic position relative to general circulation of the atmosphere and ocean
 - Altitude
 - Cloudiness

