

Ch 17.3 Temperature Controls

Why Temperatures Vary

- Factors other than latitude that exert a strong influence on temperature include heating of land and water, altitude, geographic position, cloud cover, and ocean currents.

Land and Water

- Land heats more rapidly and to higher temperatures than water. Land also cools more rapidly and to lower temperatures than water.

Geographic Position

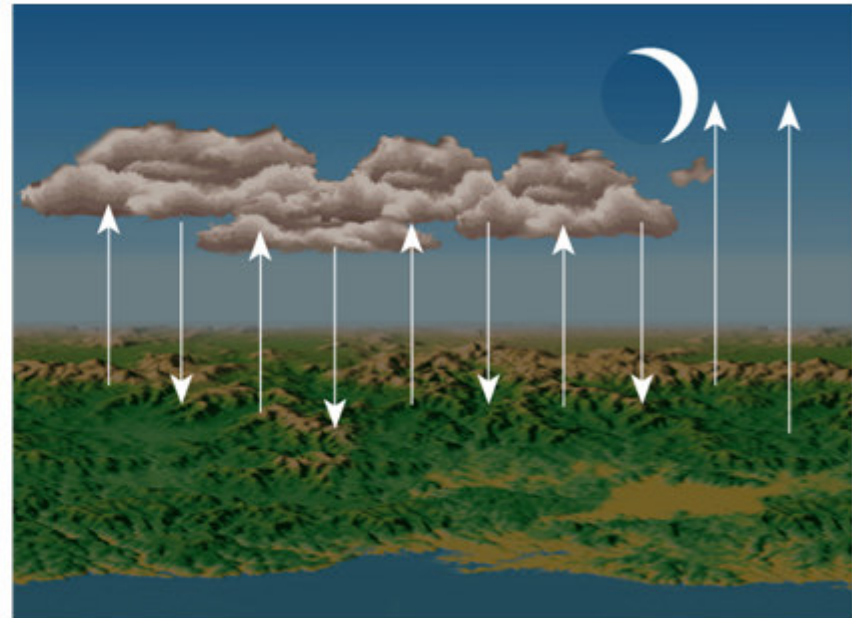
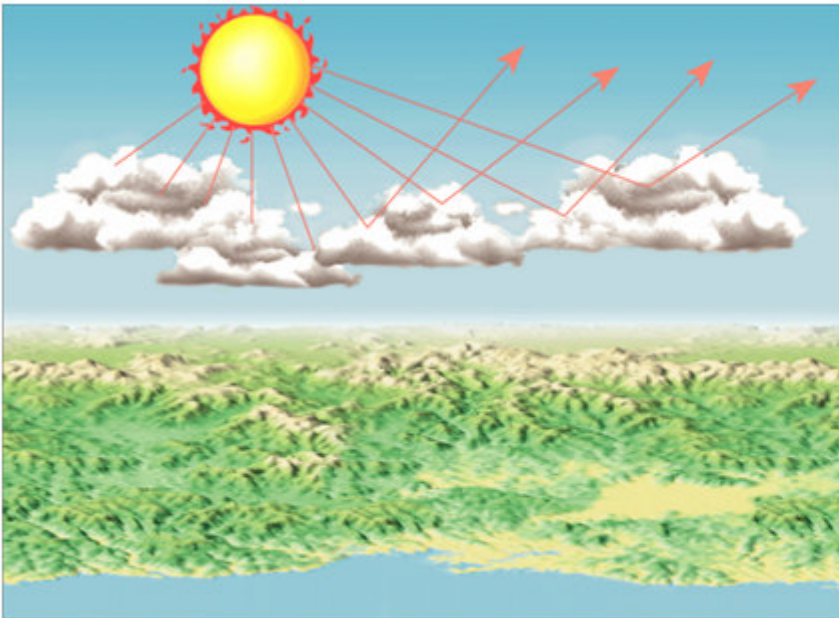
- The geographic setting can greatly influence temperatures experienced at a specific location.

Altitude

- The altitude can greatly influence temperatures experienced at a specific location.

Cloud Cover and Albedo

- **Albedo** is the fraction of total radiation that is reflected by any surface.
- Many clouds have a high albedo and therefore reflect back to space a significant portion of the sunlight that strikes them.



World Distribution of Temperature

- **Isotherms** are lines on a weather map that connect points where the temperature is the same.
- Isotherms generally trend east and west and show a decrease in temperatures from the tropics toward the poles.