

The climate is the average weather conditions over a long period of time. It is the difference in time that separates climate from weather. The climate of any region can generally be specified with three factors:

Date _____ Per. _____

1. **Rainfall:** Rainy climates are moist, while arid climates are dry.
2. **Average Temperature:** Tropical climates are always warm. Polar climates are usually cold, and temperate climates are seasonal.
3. **Temperature Range:** Continental climates (far from oceans) have large seasonal temperatures changes. Locations near large bodies of water have less extremes in the warmest and coolest months.

Most of New York has a mid-latitude climate, with hot summers and cold winters, and reasonable rainfall distributed throughout the year. This is a temperate, humid, continental climate.

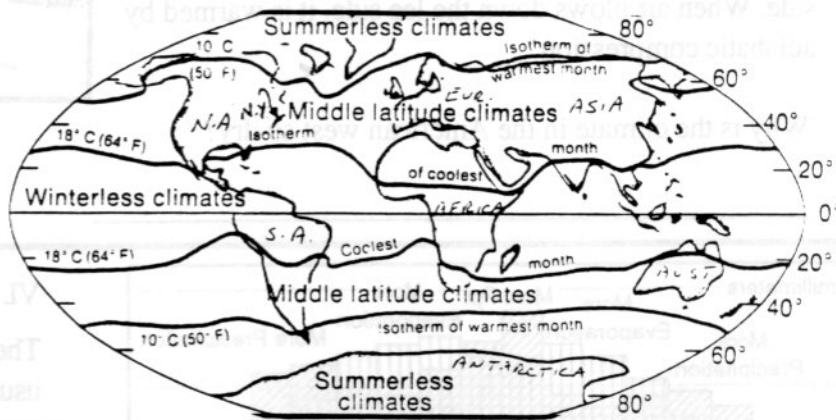
The sections below illustrate how geographic factors affect the climate of a region.

I. Latitude

As the latitude increases, the average temperature...

Where is January the middle of summer?

There are no seasons near the _____



II. Altitude

Because air cools as it rises, the average temperature in mountain regions is lower than the average temperature in nearby lowland locations.

What word describes the cooling of a gas by expansion? _____



Annual Temperature Ranges in °C

III. Nearness to Oceans

The greatest temperature ranges occur...

On Land, or, Over the Oceans
(Please circle one.)

Specifically, where on this map do the greatest temperature ranges occur?

Oceans moderate coastal climates because of water's high _____

IV. Ocean Currents

Places near the oceans can be affected by warm and cold ocean currents. Look carefully at this diagram. How do ocean currents affect the climates in...

Great Britain? _____

California? _____



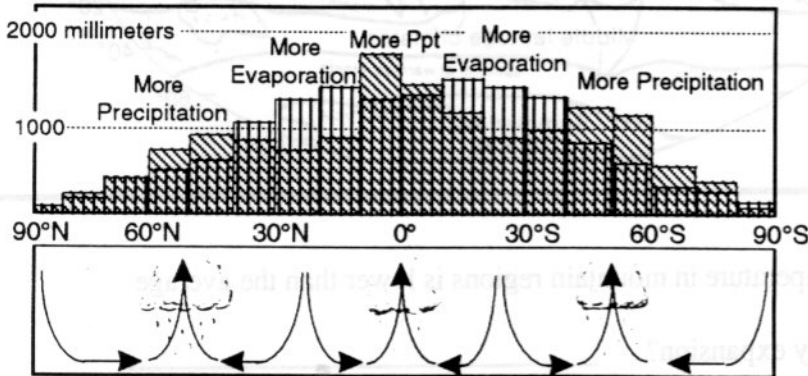
V. Mountain Barriers

The American deserts have more arid weather with greater extremes in temperature than surrounding areas.

Mountains that surround these deserts cause the air to lose its moisture as rain and snow on the windward side. When air blows down the lee side, it is warmed by adiabatic compression

Why is the climate in the American west so dry?

Ocean Currents can Warm or Cool Nearby Coastal Climates



Latitude and the Balance between Annual Precipitation and Potential Evapotranspiration

VI. Prevailing Winds

The origin of air blowing into a place usually has a strong affect on the climate.

For example, New York borders the Atlantic Ocean, yet the ocean has little affect on most of New York State because our prevailing winds come from the _____.

According to the diagram above, why is there so much rainfall near the equator? _____

How does each of these factors affect the local climate:

1. Altitude: _____
2. Mountain Ranges: _____
3. Nearness to Water: _____
4. Ocean Currents _____
5. Latitude: _____