



The climate of any place is the average conditions of weather over a long period of time. When we consider the weather, we think of the conditions of the atmosphere over the past few hours. Climate includes both the average temperature and precipitation, as well as the expected seasonal variations in these factors.

There are a variety of ways to classify climates. The system shown on the map to the left uses the local plant and animal communities to classify the climate. However, other climate systems use altitude above sea level, latitude (distance from the equator), average precipitation and a variety of other factors to designate regions with relatively uniform climates. The local plant community (biome) is an especially good indicator of the climate because of the sensitivity of plants to geographic and atmospheric conditions.

1. What biome is used to classify the coldest climate in North America? _____
2. According to this map and classification system, what kind of climate does New York have? _____

Page 3 of this activity shows a map of an imaginary continent. Letters A through H show the locations of eight weather stations. Each station matches one of the paragraphs on page 2, and one of the graphs below the map on page 3.

Procedure:

- A. Carefully read one of the paragraphs on page 2. Each one contains important clues that will help you understand and identify the local climate. Note that the first paragraph has been labeled for you. The first one should help you understand how the process works.
- B. Choose the best letter from the map on page 3 to locate that kind of climate. Label the paragraph with the most appropriate letter. (Each letter will be used just once.) If you are uncertain about which letter matches, re-read the paragraph.
- C. In the boxes surrounding the map on page 3, write in the correct climate types at each location from the list of eight climate types at the bottom of page 2.
- D. Examine the graphs on the bottom of page 3. Label each with the letter of the paragraph on page 2 that best describes the climate shown by each graph. (Note that each graph includes both temperature and precipitation variables in a yearly cycle.)

Although this location has a variable mid-latitude climate, the prevailing winds have crossed a major mountain range. There is little rainfall here because the air has dropped its moisture on the windward side of the mountains. Because it is far inland, there are large seasonal variations in temperature. C

Due to its high latitude, this location receives weak insolation. The sun is never high in the sky. Winters are bitter cold while summers are very cool. In this zone of prevailing high pressure, the wind is often descending within the atmosphere so the absolute humidity is usually low. Although the ground is usually covered by snow, there is very little precipitation.

The highest temperatures occur at this station in January and February. July and August are the coolest winter months. The climate is temperate, but there is little precipitation because this is a zone of prevailing high pressure and descending air.

This station is influenced by a nearby warm ocean current. The climate is temperate and seasonal variations are moderate. The coastal location also insures that there is sufficient humidity to provide good precipitation throughout the year.

The next place has an average temperature about the same as the previous location. But the seasonal variations are much greater. Winters are often bitter cold and the summers are very hot. Precipitation, largely from summer thunderstorms and winter blizzards, is not very plentiful.

Warm temperatures and daily rainfall make this climate truly tropical. This location has never had a frost or a drought. Rising air in this zone of low pressure causes almost daily precipitation.

The latitude of this location might lead you to think that it would always be hot at this place. But it isn't. The winds blowing into this station are cooled by adiabatic expansion as they gain altitude. The climate is consistently cool and comfortable with modest rainfall.

There is lots of rainfall here because the winds blowing up the windward side of the mountains quickly cool below the dew point. The result is perpetual clouds and rainy weather. The ocean winds, that provide the moisture, also moderate the temperatures. The climate is temperate with warm summers and cool winters.

Be sure that you have labeled each paragraph and each graph at the bottom of the next page with the appropriate letters from the map on page 3.

Also, be sure each box next to the map is labeled by the climate zone represented from the list below.

Climate Zones:	Arctic	Temperate Rainforest	Mountain
	Tropical	Humid Continental	Southern Hemisphere
	Desert	Dry, Continental	(Seasons reversed)

