

# Factors that Influence Climate

While an area’s climate can be the product of several factors, usually only one or two exert a major influence. In this activity you will identify factors, from those listed below, that are primarily responsible for producing the climate for the selected locations.

Leeward - Faces the south- hot, dry and sunny

Windward – Faces the North or East and is moist, lush and green

Factors that Influence Climate	
Those that affect: <b>TEMPERATURE</b>	Those that affect: <b>PRECIPITATION</b>
<b>Latitude</b> – As latitude increases, the average yearly temperature decreases.	<b>Latitude</b> – Belts of low pressure centered at latitudes of 0° and 60° N and S produce generally heavy precipitation. Belts of high pressure centered at latitudes of 30° N and S produce dry climates; sometimes even deserts.
<b>Nearness to centers of large land masses</b> – Locations near the center of a large land mass tend to have wide ranges in temperatures, both between day and night and seasonally.	<b>Nearness to centers of large land masses</b> – Locations near the center of a large land mass tend to have dry climates.
<b>Nearness to large bodies of water</b> – Large bodies of water have a “milding” effect on the temperatures of coastal areas producing low ranges in temperature, both between day and night and seasonally.	<b>Nearness to large bodies of water</b> – Areas near large bodies of water tend to have higher than average precipitation, especially areas on the leeward side of the water.
<b>Location relative to large mountain ranges</b> – Windward sides of mountain ranges are cooled while leeward side are warmed	<b>Location relative to large mountain ranges</b> – Windward sides of mountains tend to receive higher than average precipitation while leeward sides receive lower than average precipitation
<b>Altitude</b> (height above sea level) – As altitude increases, the average yearly temperature decreases.	<b>Prevailing wind direction</b> – Wind direction determine the windward and leeward side of both mountain ranges and large bodies of water.
<b>Ocean Currents</b> – Ocean currents tend to warm temperatures of eastern coastal areas and cool temperatures of western coastal areas.	

Questions: Using the table of factors that influence climate, answer the following questions about the diagram. ***The diagram represents an imaginary continent on the earth that is surrounded by water. The arrows indicate the direction of the prevailing winds. Two large mountain ranges are also indicated. Points A, B and E are located at sea level; C and D are in the foothills of the mountain; F is high in the mountains.***

1. What factor(s) would cause location F to have a colder yearly climate than any other location?
  
2. What three factors would cause location E to have the greatest annual rainfall?
  
3. Which location, C or D, would you expect to have the greater annual rainfall? \_\_\_\_ Why?

4. Which location, A or B, would you expect to have the greater range in temperature during the year? \_\_\_\_ Why?
5. Location A is in the center of a large desert. What factor(s) could account for its low annual precipitation?
6. What three factors would cause climate at location D to be cooler than at location B?
7. Which location, E or D, would be warmer? \_\_\_\_ Why?
8. Which spot would have the coolest yearly temperature? \_\_\_\_ Why?
9. Which location, E or A, would have more precipitation? \_\_\_\_ Why?

