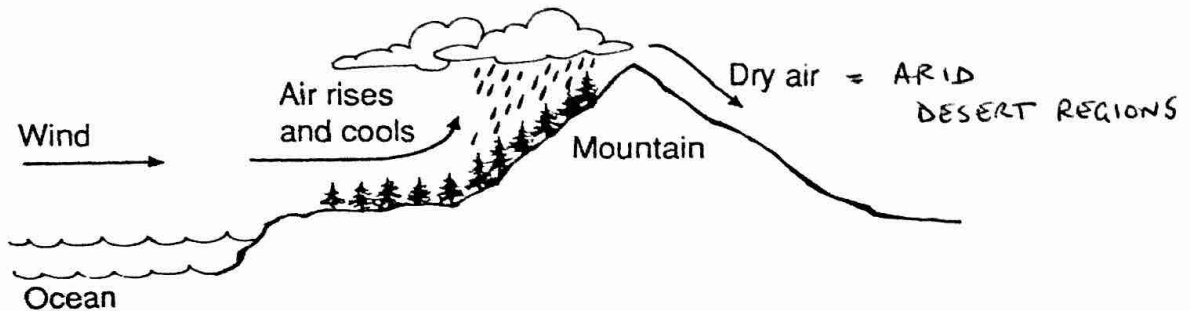


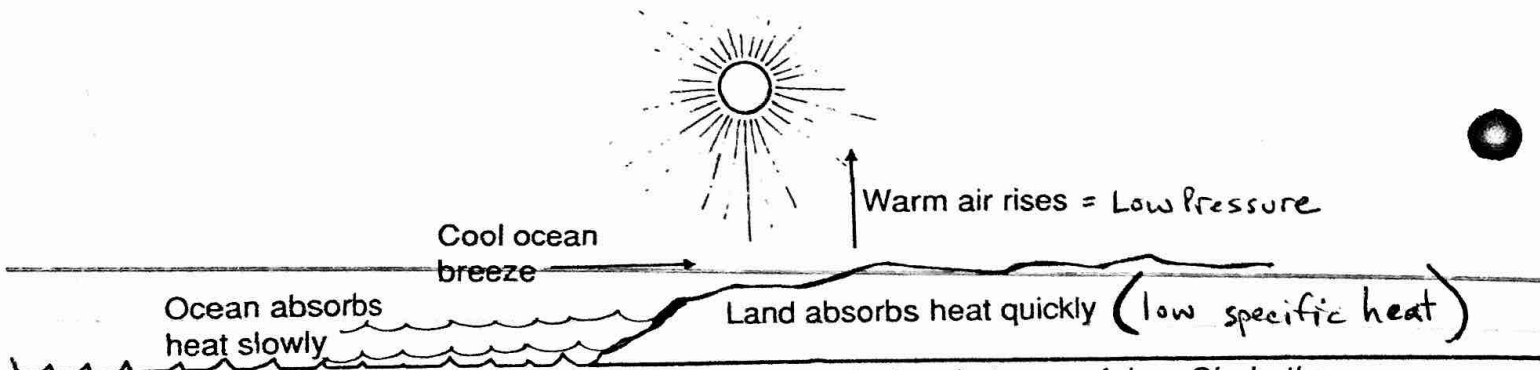
# Mountains and Oceans Make a Difference

Do you live near a mountain or an ocean? If so, do you know how the mountain or the ocean affects the weather in your area? Study the diagrams below to see how.

**Effect of Mountain on Weather**



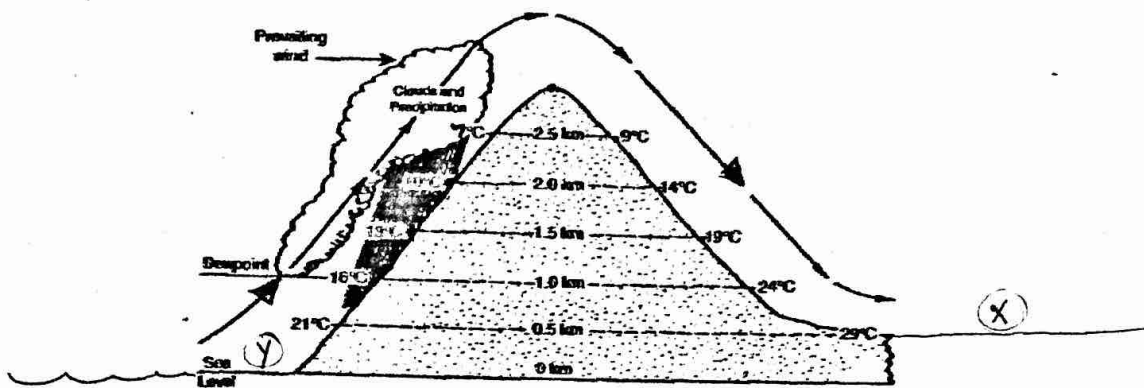
**Effect of Ocean on Weather in Summer**



Use the diagrams to decide if each statement below is true or false. Circle the correct answer.

- True False 1. As the wind blows against a mountain, it rises and cools.
- True False 2. Many clouds form on the windward side of a mountain (the side that faces the wind).
- True False 3. The windward side of a mountain gets less rain than the other side.
- True False 4. Fewer plants grow on the windward side of a mountain.
- True False 5. Land absorbs heat from the sun faster than the ocean does.
- True False 6. In the summer, the land along a coastline stays cooler than the ocean.
- True False 7. As the warm air above coastal land rises, cool sea breezes blow across the land.
- True False 8. Oceans have a cooling effect on coastal areas in the summer.  
They moderate temperatures = small range.

## OROGRAPHIC EFFECT



1. Label the windward and leeward sides of the mountain.
2. As the air moves down the leeward side of the mountain, what changes will occur?
3. As a parcel of air moves up a mountainside, what happens to air temperature? Explain why this happens.
4. Estimate the air temperature at the top of the mountain.
5. On which side of the mountain and at what elevation is the relative humidity probably 100%?
6. What type of environment is probably located at the base of the mountain on the leeward side (location X)?
7. What type of environment is probably located on the windward side of the mountain at location Y?
8. As air moves up the windward side of the mountain, the air
 

a. Compresses and warms	c. compresses and cools
b. Expands and warms	d. expands and cools
9. Compared to the temperature and humidity conditions at location Y, the conditions at location B are
 

a. Warmer and less humid	c. warmer and more humid
b. Cooler and less humid	d. cooler and more humid
10. What effect on daytime temperatures do clouds have? EXPLAIN
11. What effect on nighttime temperatures do clouds have? EXPLAIN.