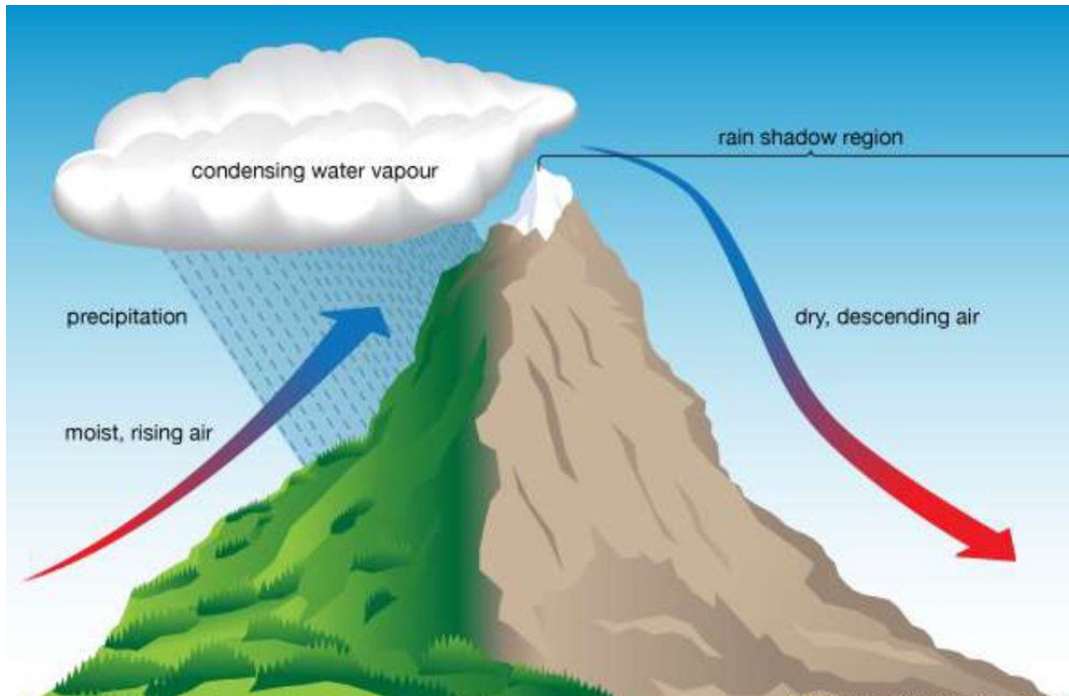


## ***What is Orographic Lifting?***



Windward Side ↑

### **Orographic Lifting**

↑ Leeward Side

As airflow encounters a mountain or hill, it is forced to rise; this is referred to as orographic lift. If the flow is sufficiently humid, clouds form on the windward side of mountains and are called orographic clouds. The type of cloud that forms depends on the air stability and moisture content. These clouds often provide precipitation on the windward side as a result of rapid condensation due to rapidly decreasing temperatures with increasing altitude.

Air also rises up a slope due to daytime heating so both orographic and thermal lifting often work together to produce tall, vertically developed cumulus clouds. Therefore, hilly areas are often cloudier than nearby lower land.

Deserts are often found on the leeward side of mountains as dry, cool air descends creating what meteorologists refer to as a rain shadow region.

***Understand Main Ideas:***

1. Describe Orographic Lifting.
  
  
  
  
  
  
  
  
  
  
2. What tends to be on the leeward side of mountains?
  
  
  
  
  
  
  
  
  
  
3. What type of clouds are produced by orographic lift? What is another term for these clouds when they originate from this upward movement of air on the windward side of mountains or hills?

***Think Critically:***

4. What would meteorologists call a thunderstorm that originated from orographic lifting?
  
  
  
  
  
  
  
  
  
  
5. What term is used to describe the residual energy from solar radiation that charges water vapor, and if generated fast enough, causes thunderstorms?