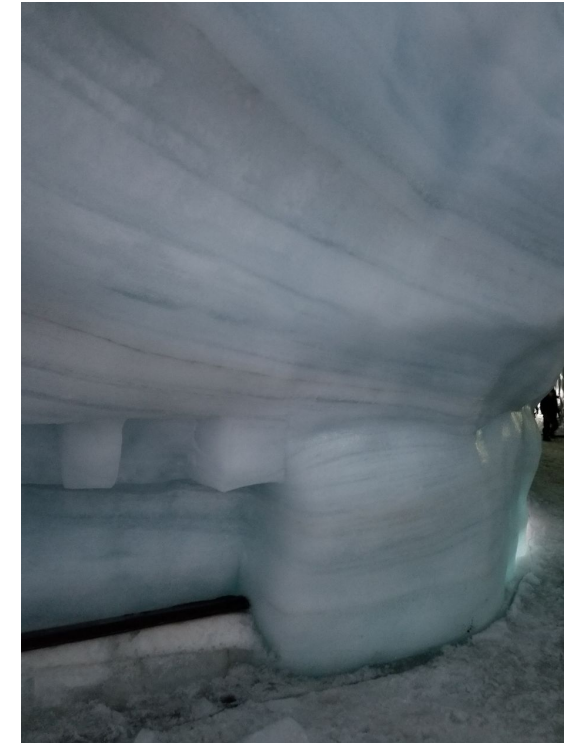


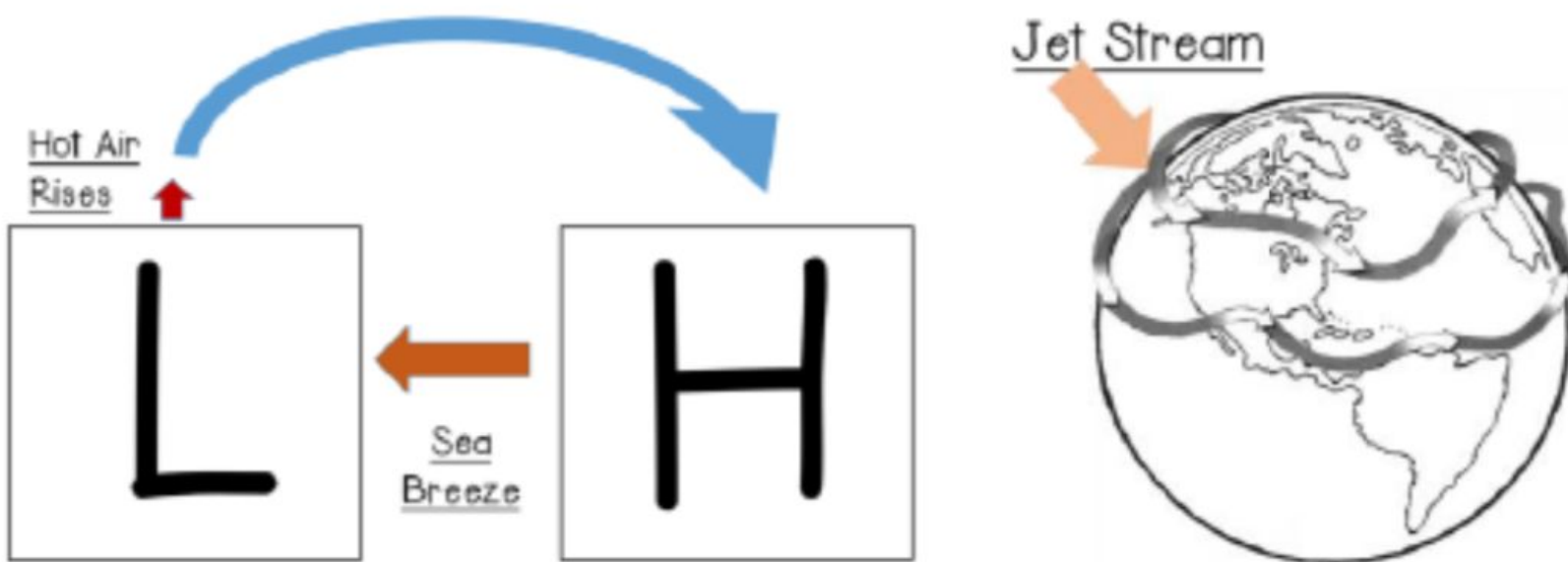
What is Climate?

Think about the climate in the area that you live. Is it typically warm and dry? Is it cool and wet? Or do you live in an area that has different conditions depending on the season? Climate is the general weather of an area over a long period of time, and includes seasonal changes in weather. The terms CLIMATE and WEATHER are NOT the same thing! Recall that weather is simply the conditions of the atmosphere at a particular time and place and can change quickly and frequently. Climate is a more general snapshot of the weather conditions over a long period of time. There are several factors that affect the climate of an area.



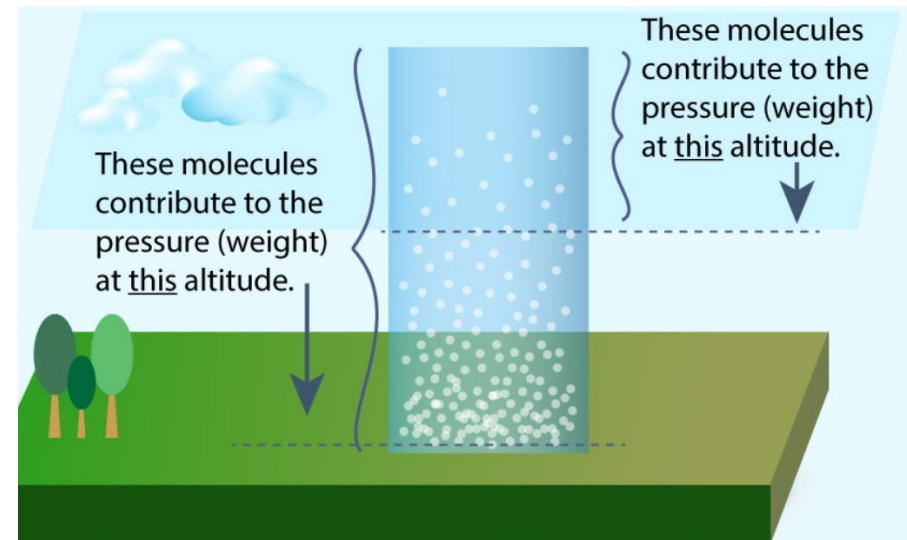
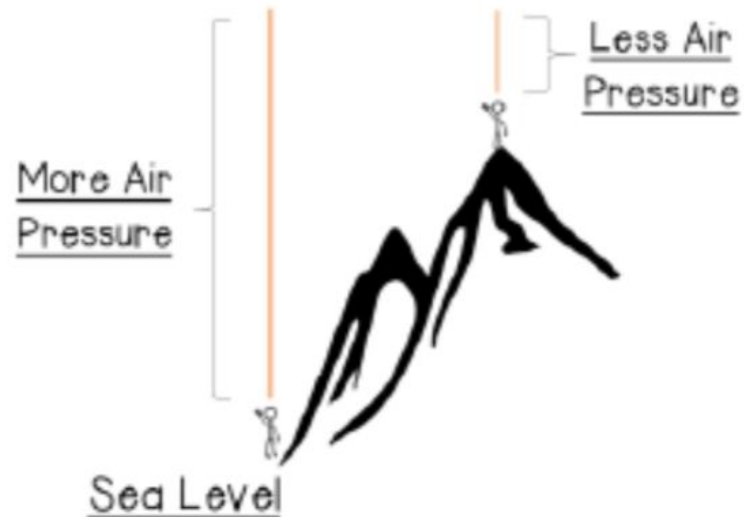
Wind

The uneven heating of the Earth by the sun creates global wind patterns. Wind is formed when air moves from an area of high pressure to an area of low pressure. The jet stream is a narrow band of fast moving air that encircles the Earth. A jet stream forms at the boundaries between hot and cold air masses. Jet streams move from west to east because of Earth's rotation.



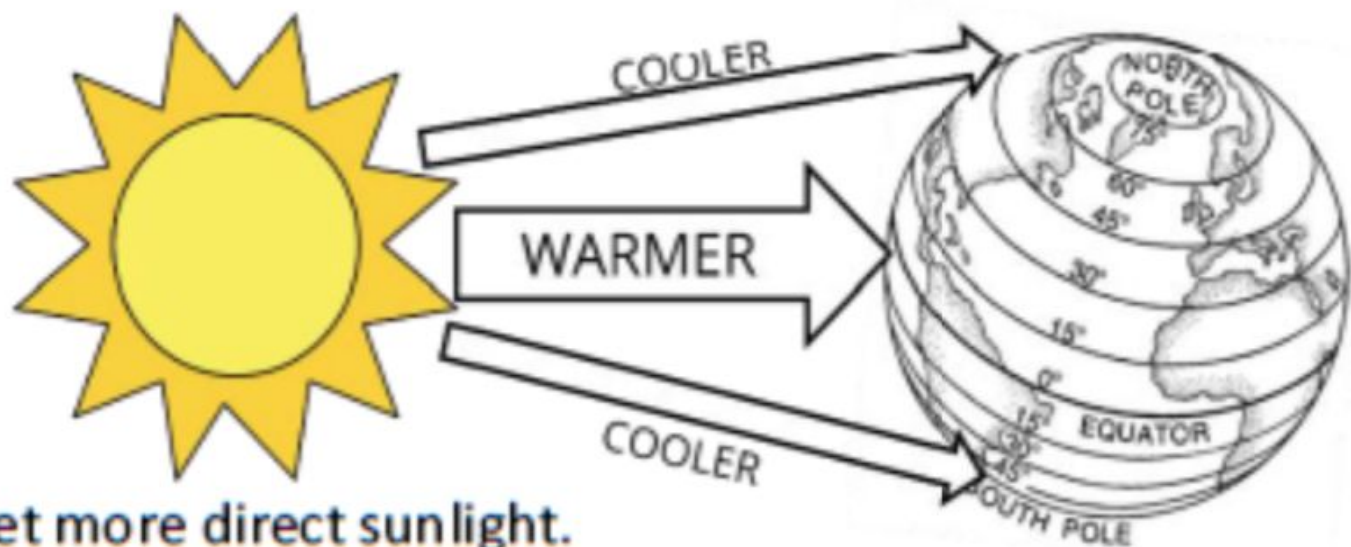
Altitude

Height above sea level impacts climate. There are fewer molecules of air the higher up you go. So, there are fewer molecules to absorb heat and temperatures are cooler at higher elevations. Temperatures go down about 3.3°F for every 1,000 feet or 6°C for every 1,000 meter increase in elevation.



Latitude

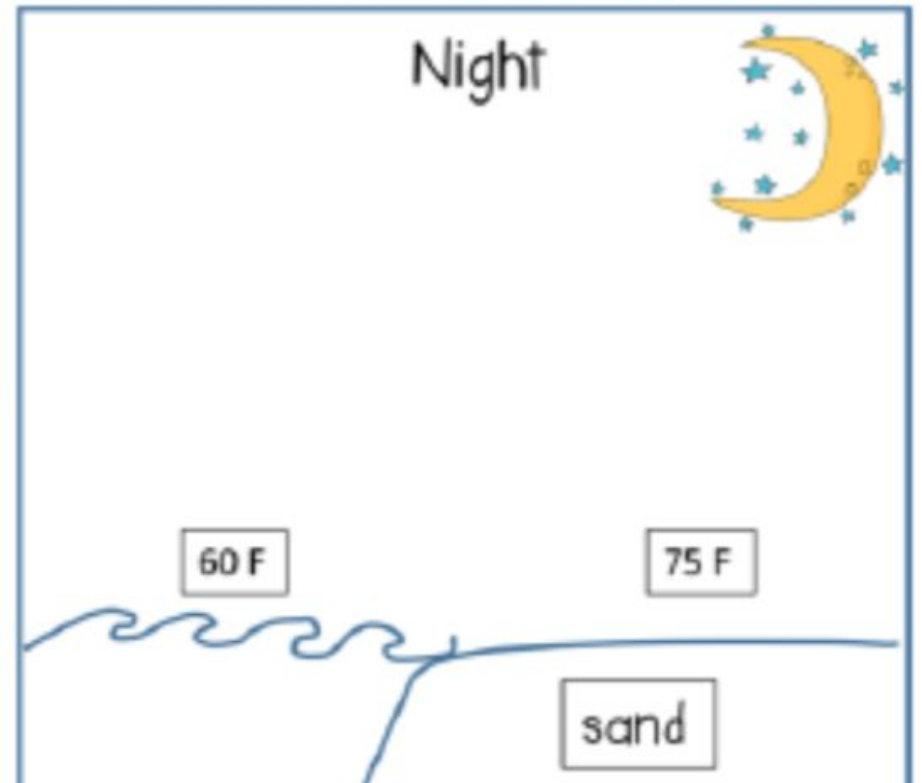
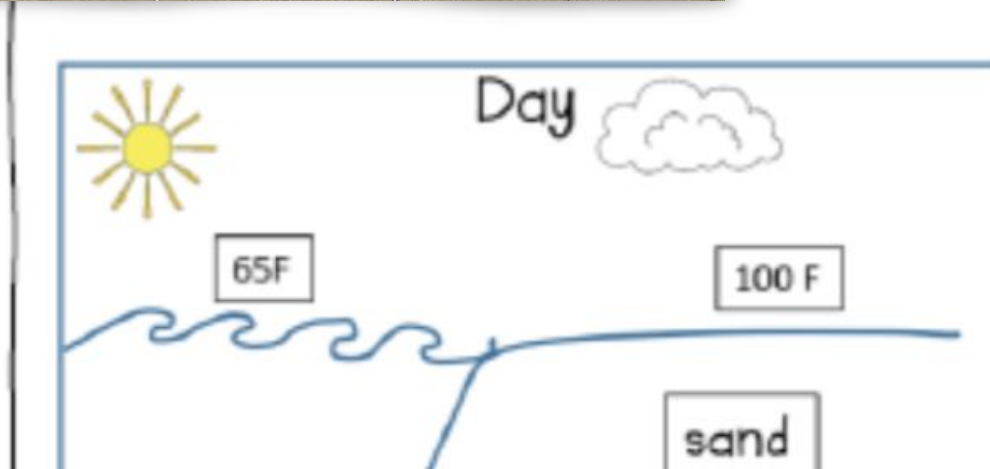
Latitude is the distance (measured in degrees) of a location north or south of the equator. Places closest to the equator are generally warmer because they get more direct sunlight. Different climates correspond to specific latitude regions.





Water vs Land

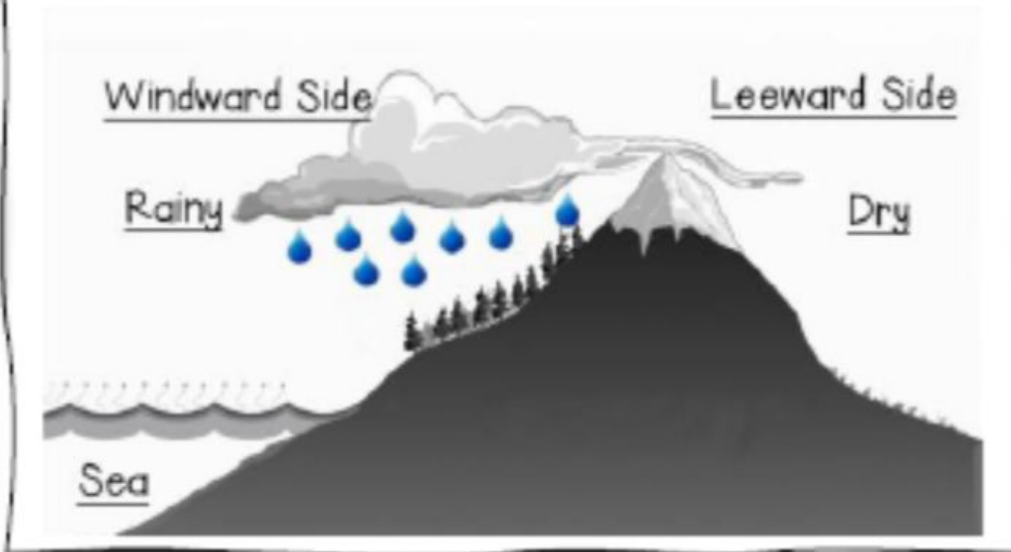
Water takes longer than land to heat up and cool down. There is less fluctuation in temperature in coastal areas.



Landforms

Mountains affect rain patterns. Mountains have a rainy side and a dry side. Warm, moist air rises. As it rises, it cools and condenses forming rain. The air is then dry and there is no more moisture in it, so the other side of the mountain is left dry, forming what is known as a rain shadow.

Windward - upwind (wetter side)
Leeward - Downwind (drier side)



Ocean Currents

Water of the world's oceans are always on the move and impact weather patterns. Global ocean currents affect climates. Gyres are the circular patterns ocean currents move in.

Coriolis Effect: Earth rotates from west to east. This curves the path of the winds. If the Earth didn't rotate, the wind would blow straight towards the equator. Winds curve because of Earth's rotation.

Rotation of Earth 

