

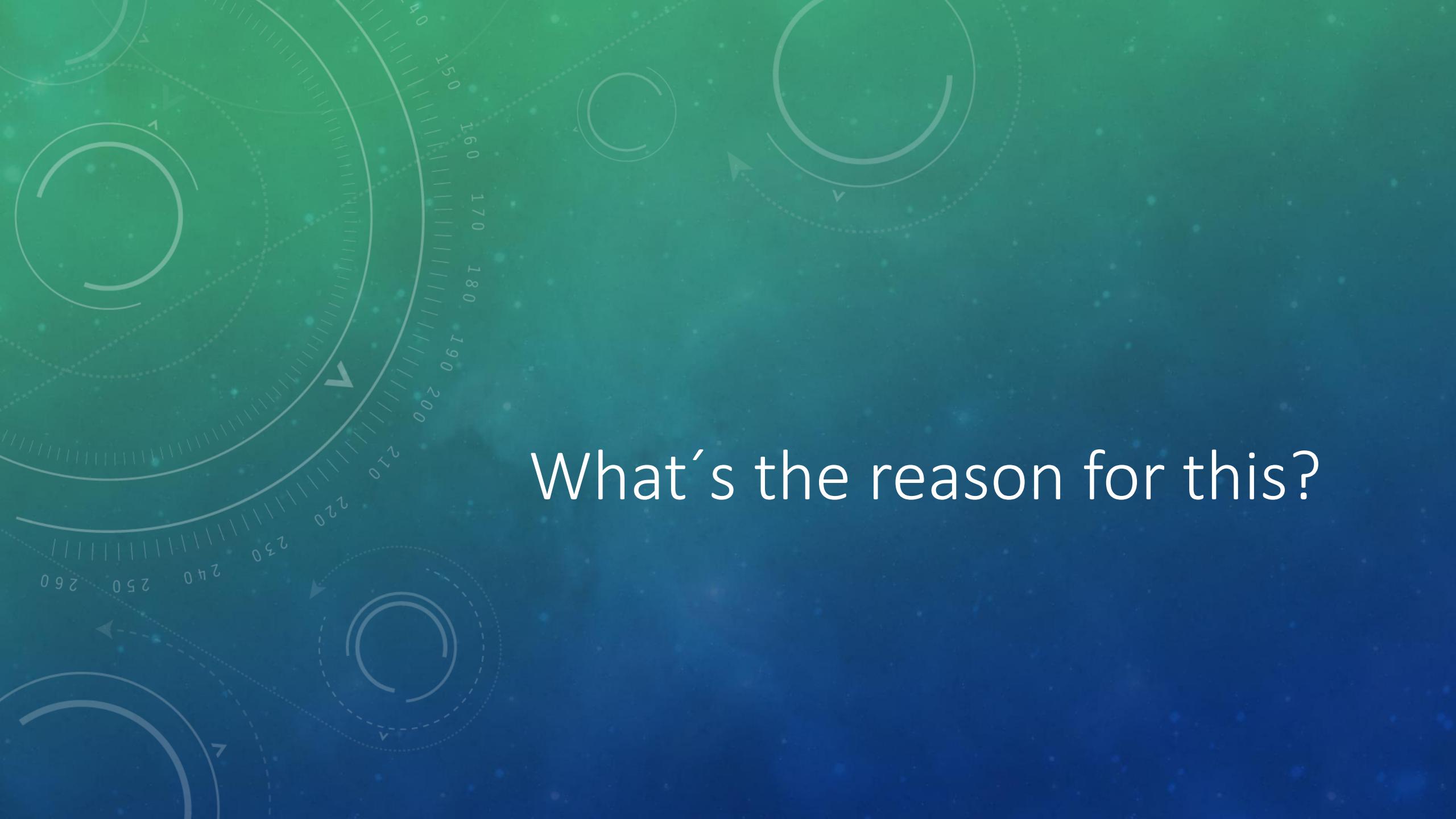


# WEATHER AND CLIMATE



Do the clothes dry faster on  
a sunny day or a cloudy day?



The background features a series of concentric circles in white and light gray. Some circles have arrows pointing clockwise or counter-clockwise around them. The numbers 140, 150, 160, 170, 180, 190, 200, 210, 220, 230, 240, 250, and 260 are visible along the outer edges of these circles.

What's the reason for this?



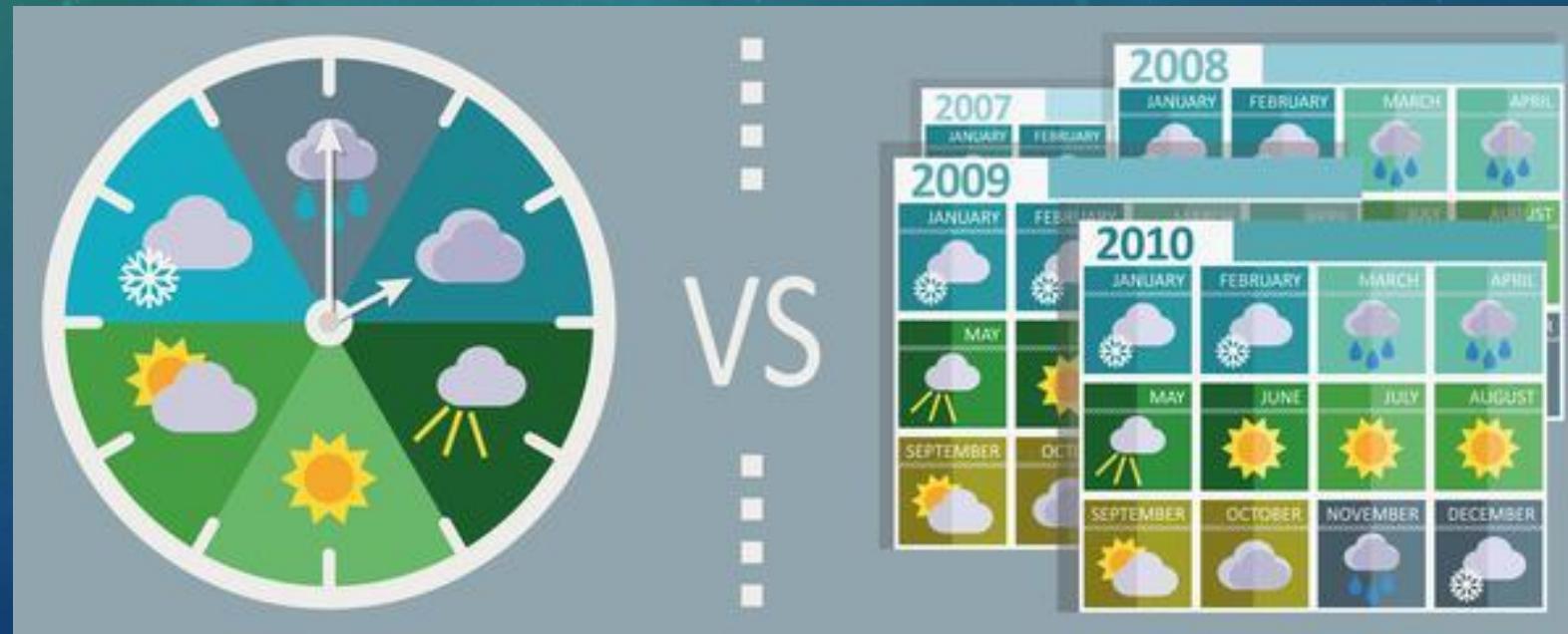
On a sunny there is less water vapour in the air, which helps the clothes dry faster



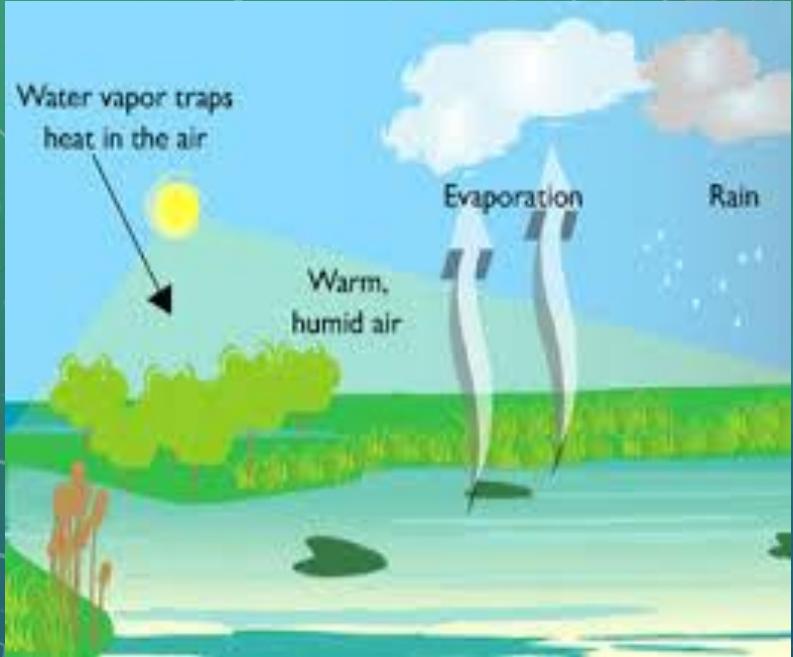
# **What is Weather and Climate?**

**Weather** and **climate** are different from each other over the time they are described.

While **weather** refers to the condition of atmosphere over a short period of time, usually up to two weeks, **climate** refers to the conditions of atmosphere over much longer periods of time.



# Humidity:



It's a measure of the amount of water vapour in the air. Water vapour is water in its gaseous state.



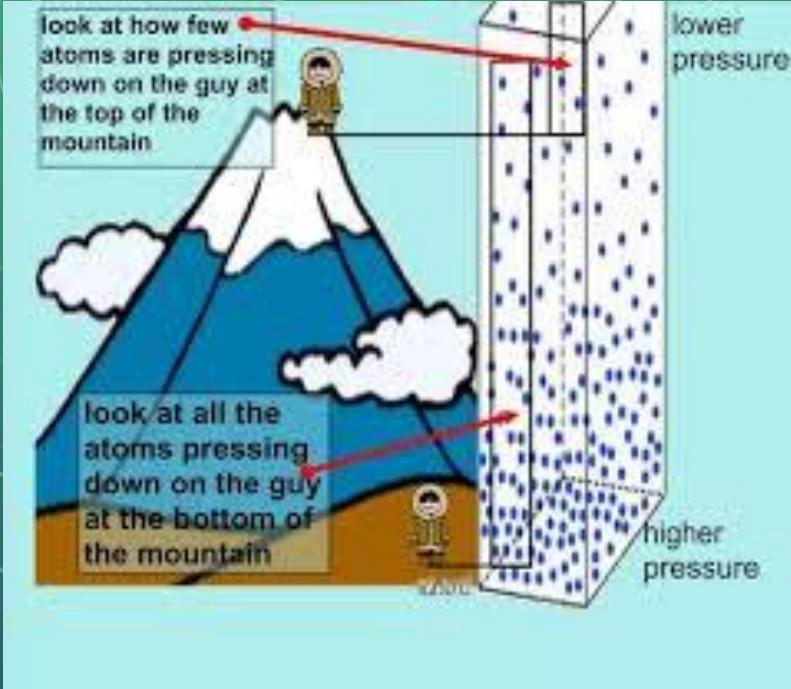


a hygrometer measures how humid or dry the air is.



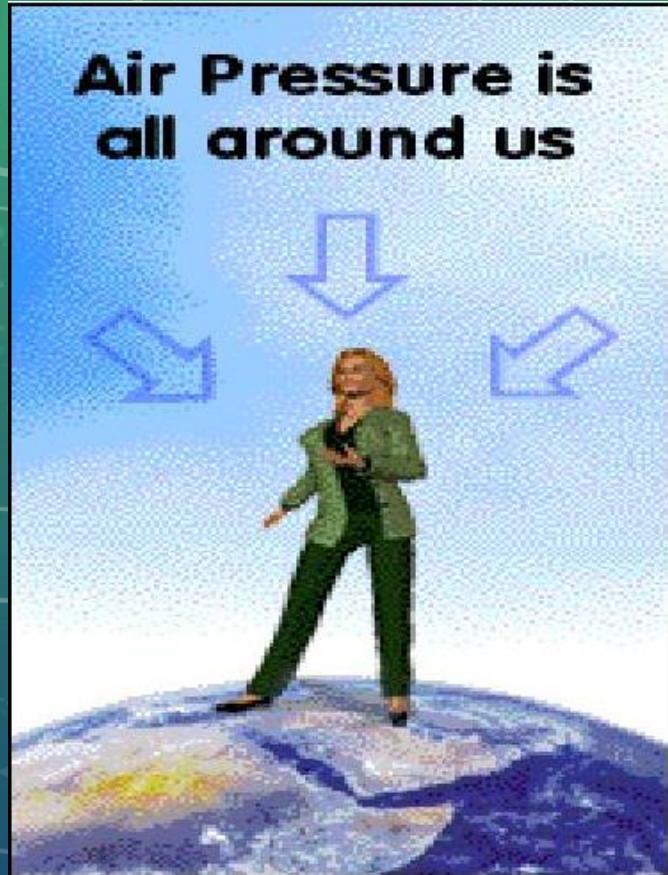
A 100% humidity reading means that the air cannot hold any more water vapour. it also means that it will probably rain

# Atmospheric pressure:



Air is everywhere around us. Although we cannot see or feel air, we know it is present because of wind and **atmospheric pressure**.





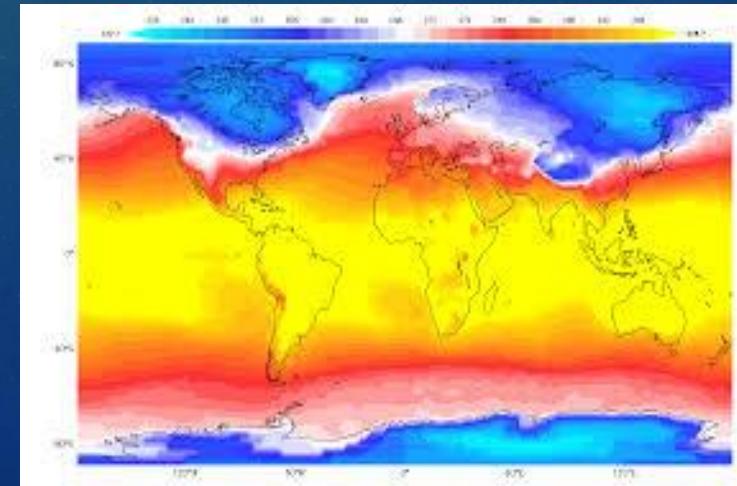
**Air Pressure is  
all around us**

Air is pushing on us all the time.  
The force of its push on an area is  
known as atmospheric pressure.  
Atmospheric pressure is pressing on  
us from all sides and at all times.

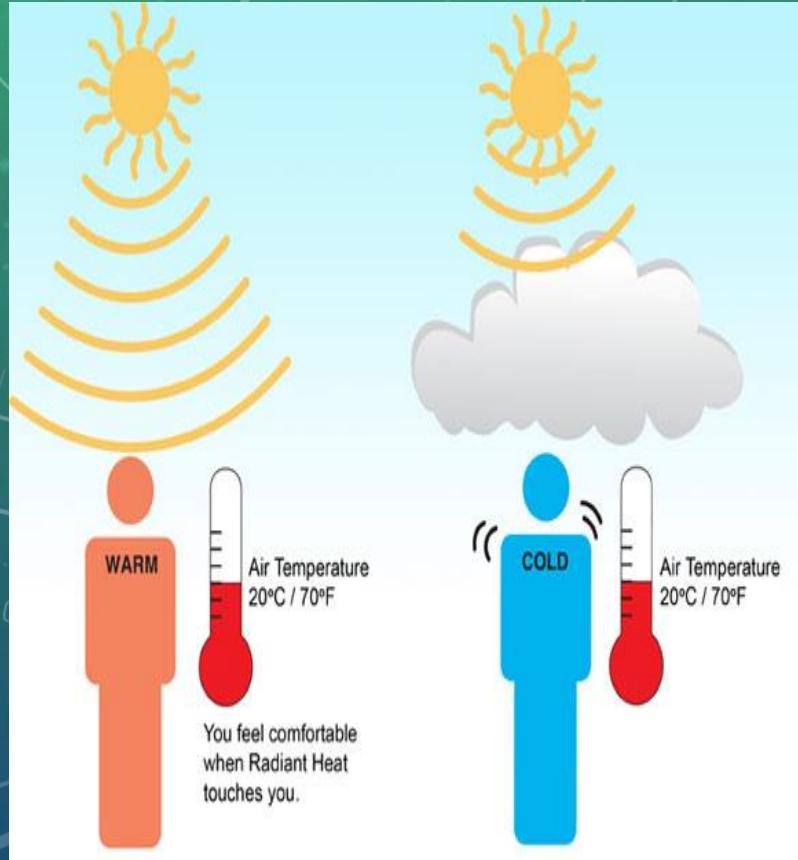
# Understanding the features of weather:



There are many factors that affect the weather of a region. These factors are air temperature, wind speed and direction, clouds and rainfall.



- **Air temperature:**  
Air temperature is usually higher during the day than during the night. air temperature changes throughout the day due to several factors.





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**Cloud cover:**  
the sun heats up the ground  
and the sea during the day.  
clouds help lower the air  
temperature by providing  
shade from the sun.



- **Wind speed and direction:**  
Different areas can have different atmospheric pressure. air moves from an area with high pressure to an area with low pressure. this movement of air caused wind.  
  
the greater the difference in the atmospheric pressure, the stronger the wind.



- **Clouds:**

Clouds form water vapour in the air above the surface of the earth cools and changes to visible water droplets. this happens when the air cannot hold any more water vapour at a 100% humidity level.

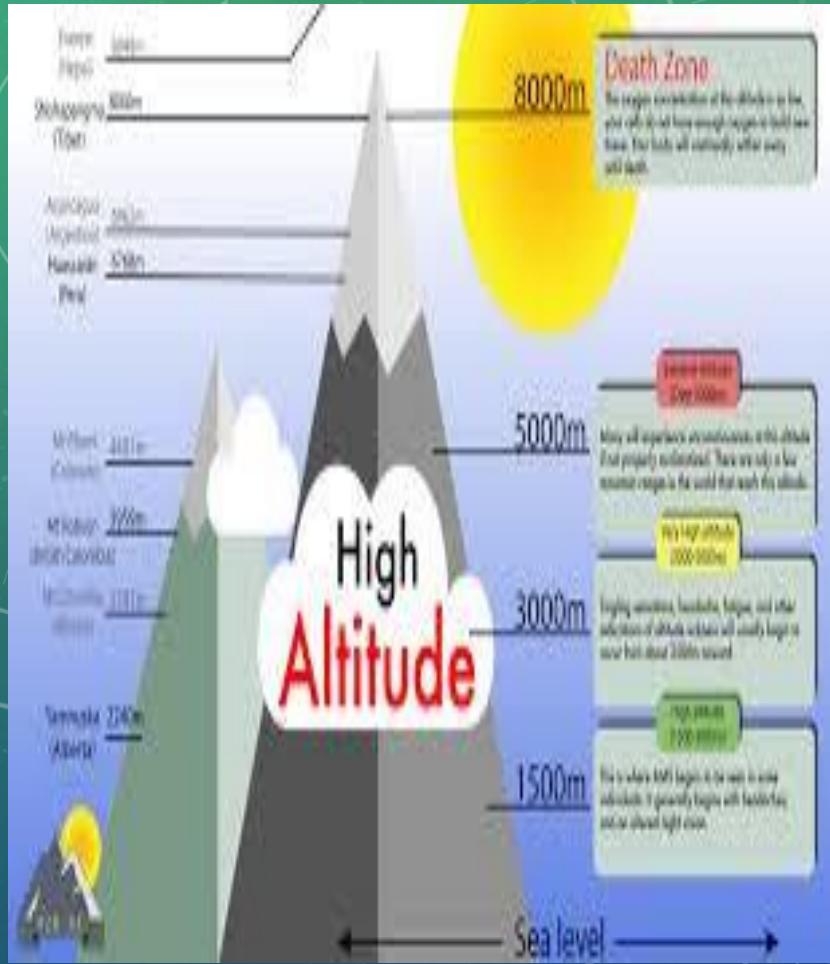


- **Rainfall:**  
Wind causes the small water droplets in the clouds to collide and form larger water droplets. the larger water droplets then fall to the ground as rain.

# Factors that affect climate

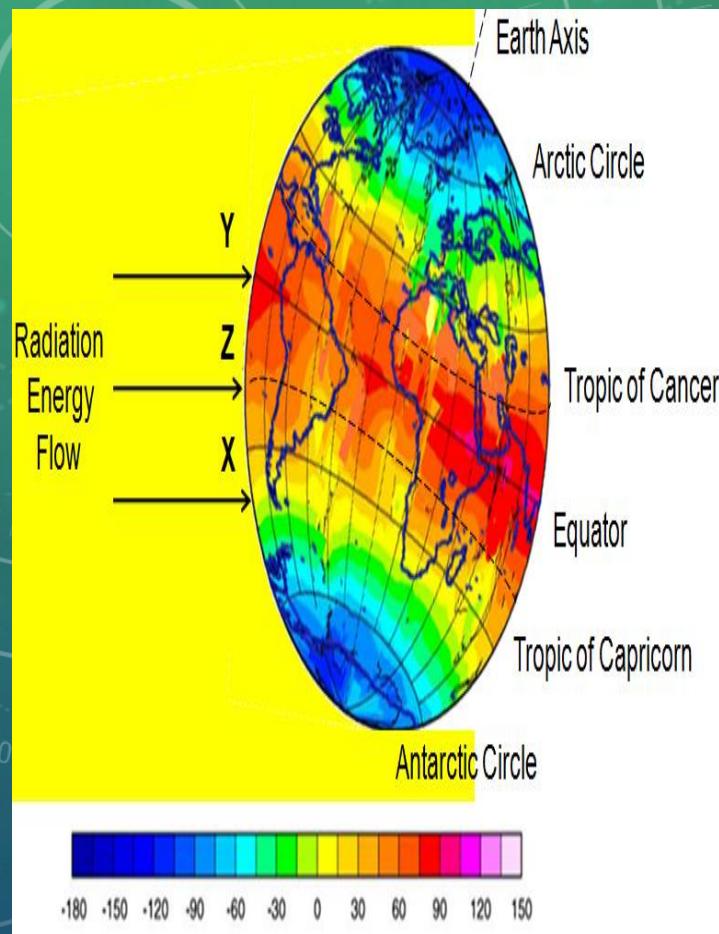


There are many factors that affect climate of a region. These factors are altitude, distance from the Equator, distance from the coast and the presence of trees and plants.

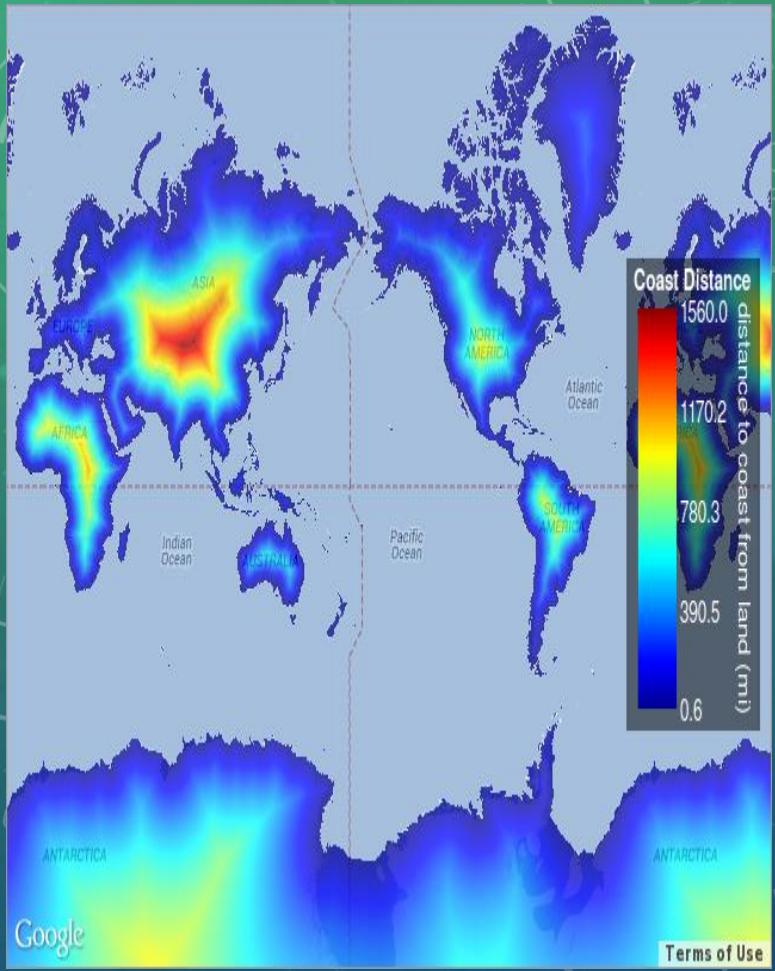


- **Altitude:**

The air in a mountain becomes colder because it is a higher altitude and has a lower atmospheric pressure. there is generally more rainfall at higher altitudes.



- **Distance from the equator:** Places in the tropics or near the equator tend to have climates, which are warm and wet. places in the polar regions or far away from the equator have polar climates, which are very cold throughout the year.



- **Distance from the coast:**  
Areas near the cost tend to have more rainfall and temperatures that are not too high or too low.  
  
for countries with different seasons, the temperatures in places near the coast are warmer in winters and cooler in summers.



- **Trees and plants:**  
Forests can lower air temperatures. water vapour given out by the trees and plants encourages the formation of clouds and rain.

## Weather and climate

### Weather

Has features  
Consisting on

#### Air temperature

Measured by

#### Room thermometer

#### Wind

- \*Speed
- \*Direction



Speed depends on  
difference in  
atmospheric pressure

Direction from area of  
higher to lower  
atmospheric pressure

#### Clouds

Formed when

Water vapor in the  
atmosphere cools and  
changes to visible water  
droplets

#### Rainfall

Depends on

#### Humidity

Measured by

#### Hygrometer

### Climate

Is affected by

#### Distance from Equator

#### Altitude

Affects

#### Atmospheric pressure

Measured by

#### Barometer

#### Trees and plants

Increases

#### Rain fall

#### Distance from the coast



## ACTIVITY 10.2

WORK IN TEAMS (3 PEOPLE)