

WEATHER AND CLIMATE

Weather – It is an hour- to- hour, day to day condition of the atmosphere.

Example- a hot or humid, cloudy or sunny, pleasant or breezy, rainy weather,

Weather can change dramatically from day to day.

Climate – The average weather condition of a place for a longer period of time represents the climate of a place.

TEMPERATURE

The degree of hotness and coldness of the air is known as temperature.

The temperature we feel everyday is the temperature of the atmosphere.

It changes not only between day and night but also from season to season. Summers are hotter than winters.

Factor influencing the distribution of temperature

Insolation influences the distribution of temperature.

Insolation is the incoming solar energy intercepted by the earth.

The amount of insolation decreases from the equator towards the poles. Therefore, the temperature decreases in the same manner.

Temperature in cities is much higher than that of villages. The crowded high rise buildings of the cities trap the warm air and thus raise the temperature of the cities.

Do you know?

The standard unit of measuring temperature is **degree Celsius**.

It was invented by Anders Celsius.

On the Celsius scale the water freezes at 0 °C and boils at 100 °C.

WEATHER INSTRUMENTS

Thermometer: It is an instrument that measures temperature.

Barometer: It measures atmospheric pressure.

Rain gauge: It measures the amount of rainfall.

Wind vane: It shows the direction of the wind.

AIR PRESSURE

Air pressure is defined as the pressure exerted by the weight of air on the earth's surface.

- Air above us presses us with a great force on our bodies but we don't even feel it because the air presses us from all directions and our body exerts a counter pressure.
- As we go up the layers of atmosphere, the pressure falls rapidly.
- The air pressure is highest at sea level and decreases with height.
- Horizontally the distribution of air pressure is influenced by the temperature of the air at a given place.

LOW-PRESSURE AREA

In areas where temperature is high the air gets heated and rises. This creates a low-pressure area.

Low pressure is associated with cloudy skies and wet weather.

HIGH PRESSURE AREA

In areas having low temperature, the air is cold. It is therefore heavy. Heavy air sinks and creates a high pressure area.

High pressure is associated with clear and sunny skies.

Very important thing to keep in mind-

The air always moves from high pressure areas to low pressure areas.

DO YOU KNOW?

On the moon there is no air and hence no air pressure.

Astronauts have to wear special protective space suits filled with air when they go to the moon.

If they didn't wear these space suits, the counter pressure exerted by the body of the astronauts would make the blood vessels burst. The astronauts would bleed.

WIND

The movement of air from high-pressure areas to the low-pressure areas is called Wind.

We can see wind at work as it blows dry leaves or uproots trees during a storm.

At times wind can be strong that it is difficult to walk against it or to hold an umbrella on a windy day.

DO YOU KNOW?

A wind is named after the direction from which it blows, e.g. the wind blowing from the west is called westerly.