Climate

Climate is the statistics of weather over long periods of time. It is measured by assessing the patterns of variation in temperature, humidity, atmospheric pressure, wind, precipitation, atmospheric particle count and other meteorological variables in a given region over long periods of time.

Climate change:

Climate change is a change in the statistical distribution of weather patterns when that change lasts for an extended period of time.Climate change is the change in the Earth's seasonal temperature, climate, and natural disasters. Climate change is the change in the average weather of a region. Climate change is the variation in global or regional climates over time.

Climate	Weather
climate is how the atmosphere "behaves" over relatively long periods of time.	Weather is what conditions of the atmosphere are over a short period of time
climate is the description of the long-term pattern of weather in a particular area.	weather can change from minute-to-minute, hour-to-hour, day-to-day, and season-to-season.

Reasons:

Factors that create climate conditions.They are natural causes & human factors.

Natural Causes:

- **Continental Drift:** This drift changed the position of water bodies of the landmass and the flow of ocean currents and winds. These changes affect the climate. This drift of the continents continues even today.
- **Volcanoes:** When a volcano erupts it throws out large volumes of sulphur dioxide (SO_2), water vapour, dust, and ash into the atmosphere. Although the volcanic activity may last only a few days yet the large volumes of gases and ash can influence climatic patterns for years. The gases and dust particles partially block the incoming rays of the sun leading to cooling.
- **The Earth's Tilt:** The earth is tilted at an angle of 23.5° to the perpendicular plane of its orbital path. Changes in the tilt of the earth affect the severity of the seasons. More tilt means warmer summers and colder winters; less tilt means cooler summers and milder winters.
- **Ocean Currents:** The oceans are a major component of the climate system. They cover about 71% of the Earth. The oceans absorb the sun's radiation about twice as much as the atmosphere.
- **Greenhouse effect:** The earth receives energy from the sun which warms the earth’s surface. As this energy passes through the atmosphere a certain percentage (about 30) gets scattered. Some part of this energy is reflected back into the atmosphere from the land and ocean surface. Certain gases in the atmosphere form a sort of blanket around the earth and absorb some of this energy. These gases like carbon dioxide, methane, and nitrous oxide, along with water vapour, comprise less than one per cent of the atmosphere. They are called 'greenhouse gases'. Just as the glass of the greenhouse prevents the radiation of excess energy, this ‘gas blanket’ absorbs some of the energy emitted by the earth and maintains keeps temperature levels. Hence it is named ‘greenhouse effect’. The green house effect was first recognized by a French scientist, Jean-Baptiste Fourier.

- **Global Warming:**
- **Impact of solar radiation:**The sun is seen through the dynamics of the Earth. Long-term and short-term changes in the difference of solar energy or radical influence influence the climate change in the world.
- **Changes in the Earth:** Smaller variations in the Earth's orbit are the effects of solar radiation that can change the surface of the Earth and how it manifests itself in many parts of the Earth.
- **Volcanism:**A process of transmitting goods from the bottom of the earth and overlay to its surface is called volcanism.
- **Volcanic Eruptions:** The climate in the inner part of the Earth is known as the eruption volcano eruption through the weak divisions of the Earth's rock. The volcanoes are sulfur oxide and carbon dioxide-like hydrolysis, which make the Earth hot. Some gases exposed by volcanic eruptions prohibit the arrival of sunlight into the atmosphere. This creates cold for some years.
- **Variation of the Ocean:** The sea is part of the climate system and the changes associated with the temperature on the ocean surface cause climate change, because the ocean water helps the greenhouse effect in the atmosphere. If the temperature increases, the amount of steam increases in the atmosphere. El Niño and La Nina are important events in temperature differences in the ocean surface.

Human Causes:

- **To Adding Chlorofluoro carbon in the atmosphere**:Chlorofluorocarbon is a greenhouse gas and is an important gas that can damage the ozone layer. This CFC gas is in the atmosphere at various levels. During the production of plastic products, the atmosphere is included into the atmosphere, such as the expulsion of the refrigerator, the air container, and the expulsion of liquid compressors.
- **Use of biofuel fuels**: Geothermal fuels, petroleum products and coal are used in various ways.
- **Destroying the plant:** Natural plants breathe in carbon dioxide hydroxide gas and release oxygen gas. They also contribute to nitrogen circles. Thus the amount of gases such as carbon dioxide hydroxide and excess nitrogen are controlled. But when it becomes deformed, they are likely to lead to more atmospheric conditions.
- **Animal Rearing:**When grazing animals, gases such as methane extinguish the temperature increase. Especially cows, buffalo, horses, donkeys, poultry, pig etc. are methane gas from their mouth and manure. Methane gas greenhouse gas leads to increased atmospheric pressure in the atmosphere.
- **Rice Production:** Methane is released from the land to the atmosphere when hydroelectricity uses mangrove pests. This increases earth heat.
- **Burning of agricultural waste:**The bulk of the agricultural waste comes from gases such as CO2, CH4, N2O, NOx. These also cause greenhouse gases to increase the temperature.
- **Solid Waste:**Methane gas increases in the atmosphere by processes such as waste, landfill, etc.

Effects of climate change:

- Rain fall change
- Temperature rises & Chenges in Weather.
- Ice melting
- Sea level rise
- Decrease in biodiversity
- Prevalence the Infectious Diseases
- Natural disasters (creation of natural disasters such as drought, hurricanes, floods due to increase in temperature)
- Human consciousness and physiological change

- Agriculture
- Affecting Fish Catching
- Affecting Forests and wildlife

Preventive measures:

The principal role of climate change is the increase in the temperature of the molecular molecule. To minimize the absorption, reduce the greenhouse gases in the atmosphere.

- Reduction in the use of non-renewable sources of energy (fossil fuels)
- Increased use of renewable sources like solar, wind energy etc.
- Save trees and grow more trees
- Avoid indiscriminate use of non degradable materials like plastics
- To Reduce the vehicle use.

Physical evidence for climate change:

- Historical and archaeological evidence
- Icy rivers
- Planter
- Wood Climate Study: Wood - Climate Study is the process of climate change in the past, analyzed by the analysis of the designs of woods in wood.
- Pollen analysis
- Sea level change
- Insects