

1. Key Terms

Key Term	Definition
Impact	The effect or influence of one thing on another.
Cause	Something that makes something else happen.
Effect	The result or outcome of a particular action or event.
Greenhouse effect	The process by which gases trap heat in the Earth's atmosphere.
Deforestation	The cutting down of trees, often leading to increased CO ₂ levels.
Wildfire	An uncontrolled fire in forests or grasslands, often worsened by dry conditions.
Landfill	A site where waste is buried under the ground, producing methane gas.
Methane	A powerful greenhouse gas released by animals and waste.
Greenhouse gas	Gases in the atmosphere that trap heat and contribute to global warming.
Sunspots	Dark spots on the Sun that can affect the Earth's climate.
Milankovitch cycles	Natural changes in Earth's orbit and tilt that affect climate over thousands of years.

2. Weather and Climate

- Weather is what's happening in the air right now (like rain, sun, or wind).
- Climate is the average weather over a long time (usually 30 years).
- Climate tells us what the weather is usually like in a place.
- Climate change means a significant change in the Earth's average weather conditions. Earth's climate is getting warmer over time.
- It causes more extreme weather, like heatwaves and floods.
- Scientists say climate change is happening faster now because of human activity.

3. Natural Causes of Climate Change

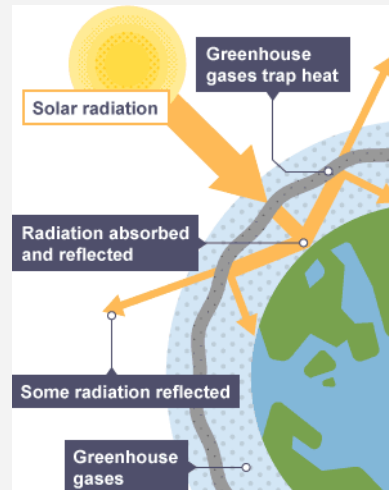
- Volcanic eruptions release ash and gases that can cool the Earth.
- Solar activity (sunspots) can make Earth warmer or cooler.
- Earth's orbit changes slightly over thousands of years, affecting climate.
- Ocean currents can shift and change global temperatures.
- Natural greenhouse gases like CO₂ and methane trap heat.
- These changes happen slowly over thousands of years.

4. Human Causes of Climate Change

- Burning fossil fuels (coal, oil, gas) for energy releases CO₂.
- Deforestation (cutting down trees) means less CO₂ is absorbed.
- Factories and transport release greenhouse gases.
- Farming produces methane from cows and rice fields.
- Waste in landfills gives off methane gas.
- These human actions are causing the Earth to warm faster.

5. The Enhanced Greenhouse Effect

- The natural greenhouse effect keeps Earth warm enough for life.
- Greenhouse gases trap heat from the Sun in the atmosphere.
- Humans are adding extra gases like CO₂ and methane.
- This traps too much heat, causing the planet to warm.
- This is called the enhanced greenhouse effect.
- This is the main cause of global warming today.



6. Impacts of Climate Change

Social (people):

- More heatwaves can cause health problems.
- Flooding can destroy homes and schools.
- People may have to migrate from unsafe areas.

Economic (money/jobs):

- Farming may suffer from droughts or floods.
- Tourism may drop in places affected by extreme weather.
- Countries may spend more on disaster recovery.

Environmental (nature):

- Ice caps are melting, raising sea levels.
- Animals may lose their habitats (like polar bears).
- Coral reefs are dying due to warmer oceans.

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