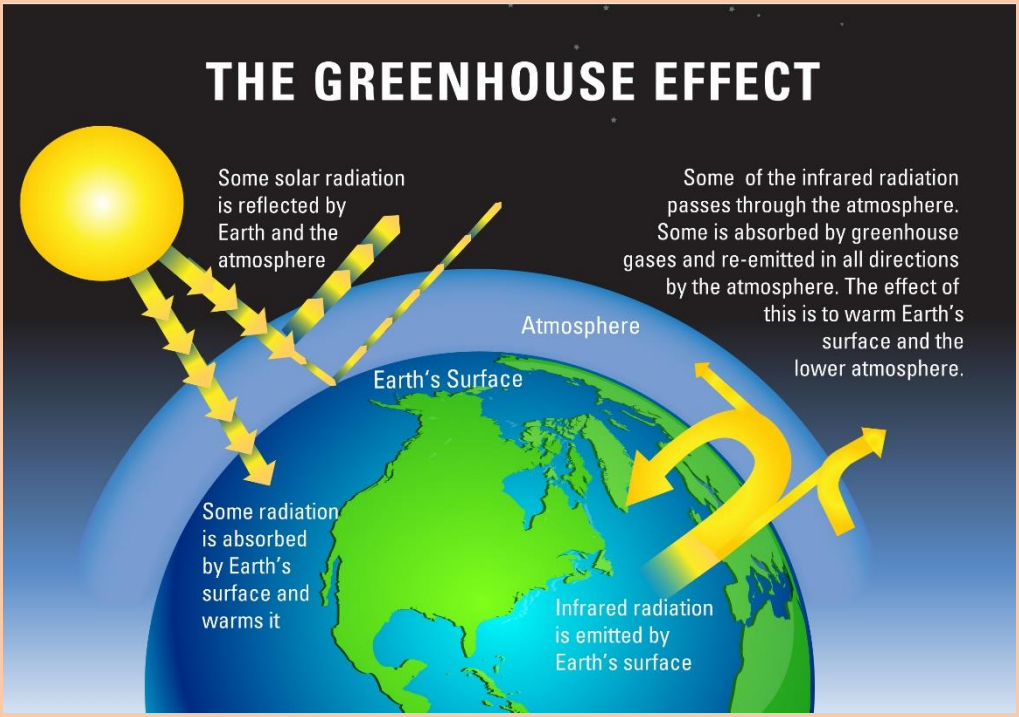
What is the mechanism behind Global Warming?

1. Frequencies of visible light and ultraviolet light that reach the Earth surface (from solar radiation). The Earth's surface absorbs these frequencies.
2. It then emits frequencies in the infrared radiation region.
3. Carbon dioxide I the troposphere (and stratosphere) absorbs infrared radiation causing vibrational energy changes in the molecules.
4. The energy is converted into a vibrational change (kinetic energy) of the CO2 molecules. This increases atmospheric temperatures. The excess energy is later re-emitted as infrared radiation.
5. When there is more carbon dioxide more infrared is absorbed and the effect worsens.
6. This results in global warming.

This is also described as the greenhouse effect. Greenhouses use this method to a warm microclimate to grow plants in. Vegetation grows best in warmer conditions since photosynthesis is sped up.



This ability to absorb and re-emit infrared energy is what makes CO2 an effective heat-trapping greenhouse gas. CO2 molecules can vibrate in ways that simpler nitrogen and oxygen molecules cannot, which allows CO2 molecules to capture the IR photons.

Greenhouse gases play an important role in our atmosphere. Without them, the Earth would have temperatures so low that life would cease to exist. Gases such as CO2 and Methane are the main contributors to the greenhouse effect.

Other significant greenhouse gases include water vapour (H2O), methane (CH4), nitrous oxide (N2O) and ozone (O3).

However, excess emissions of carbon dioxide and other greenhouse gases from human activities (such as cattle farming, burning fossil fuels and deforestation) have begun to warm Earth's climate at a problematic rate.