

Greenhouse Effect Review

- 1) The Earth receives *SHORT WAVELENGTH* visible light from the sun.
- 2) This light passes through atmosphere and strikes earth. Our atmosphere is transparent to visible light.
- 3) Some light is reflected. Some is absorbed by the surface of the Earth.
- 4) The absorbed energy is changed to heat and the earth becomes warm.
(think of a parking lot on a hot summer day)
- 5) The warmed Earth re-radiates this energy as *LONG WAVELENGTH*, infrared waves (aka terrestrial radiation).
- 6) The infrared waves are trapped by CO₂ and water vapor in the lower atmosphere*.
(CO₂ and water vapor are NOT transparent to infra red.)
This trapped heat warms the air and the Earth below.

*CO₂ is being added to the atmosphere when we burn fossil fuels: coal/oil/natural gas. H₂O (vapor) and methane (CH₄) are also greenhouse gases. More CO₂ means more heat is trapped and the Earth gets warmer.

SUMMARY: We get SHORT W.L. VISIBLE (solar radiation).
We re-radiate LONG W.L. INFRA RED (terrestrial radiation).
CO₂ is transparent to visible light but NOT to I.R.
CO₂ traps the heat and warms the Earth.

