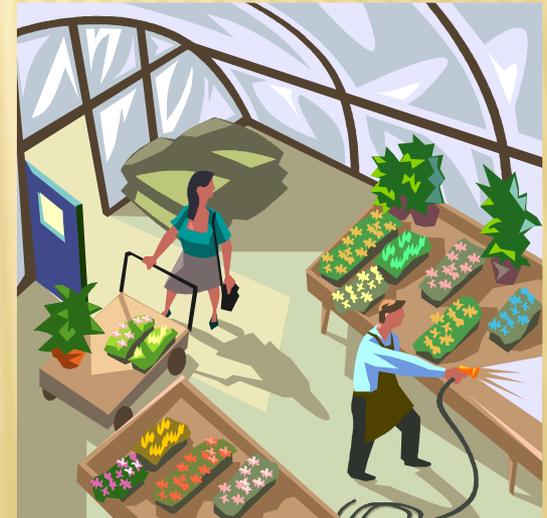
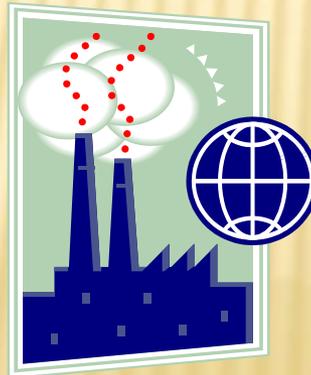
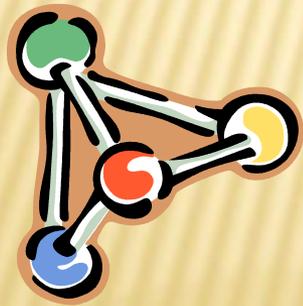
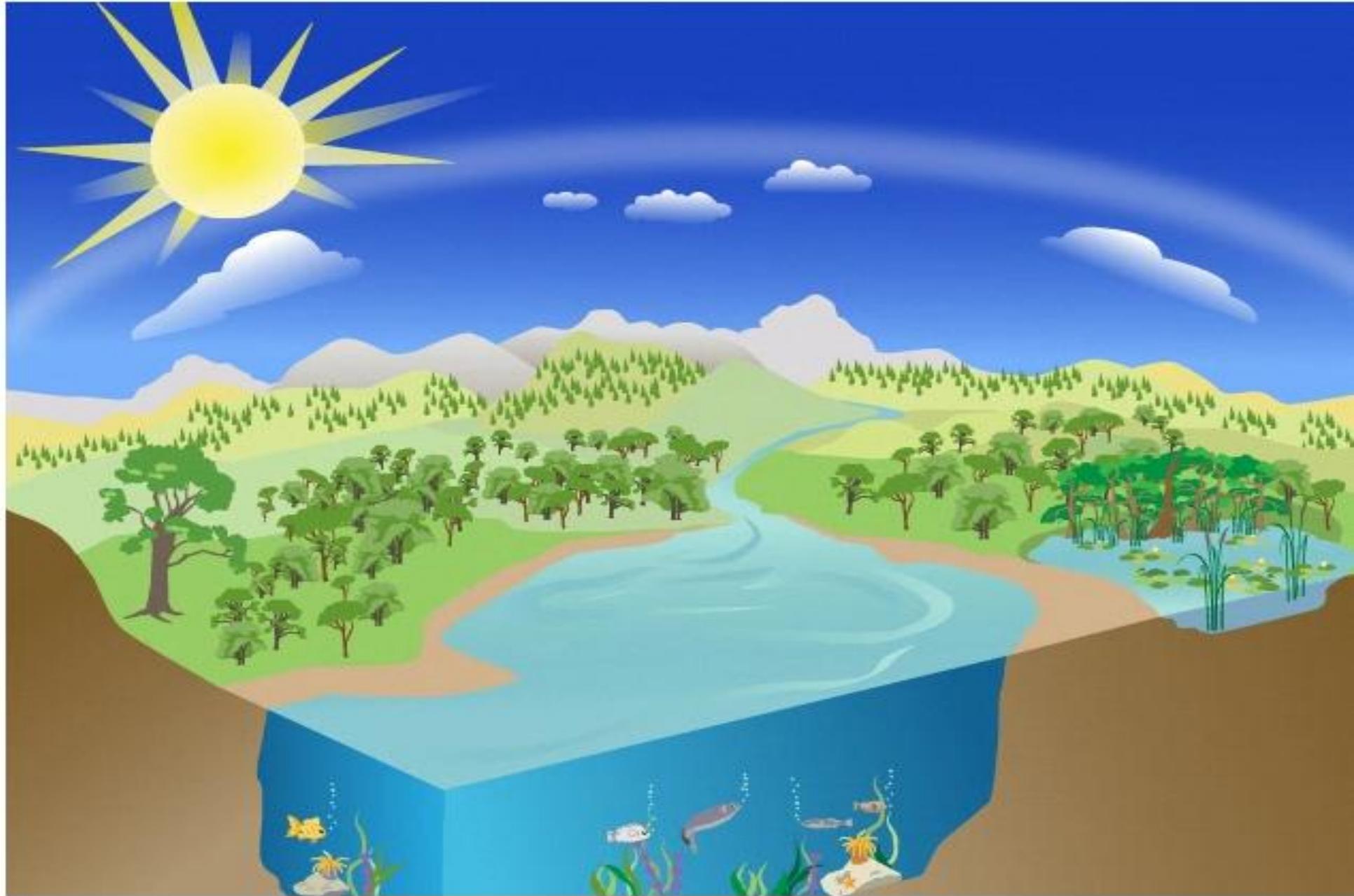


# LEARN THE BASICS - GREENHOUSE EFFECT



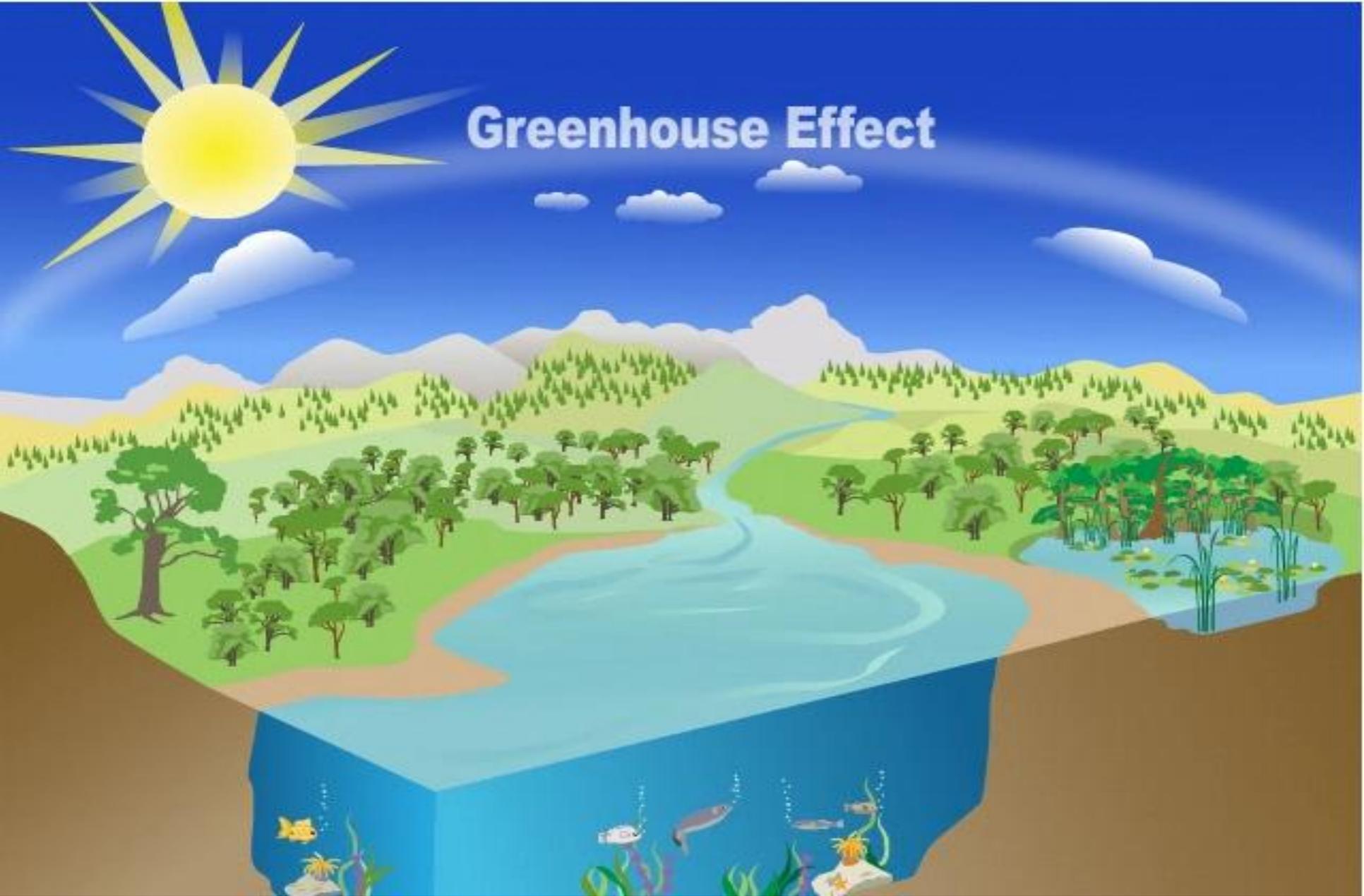


It is all about energy. The earth's atmosphere helps control the earth's temperature.



Different gasses (like carbon dioxide) trap heat in the atmosphere and warm the earth.

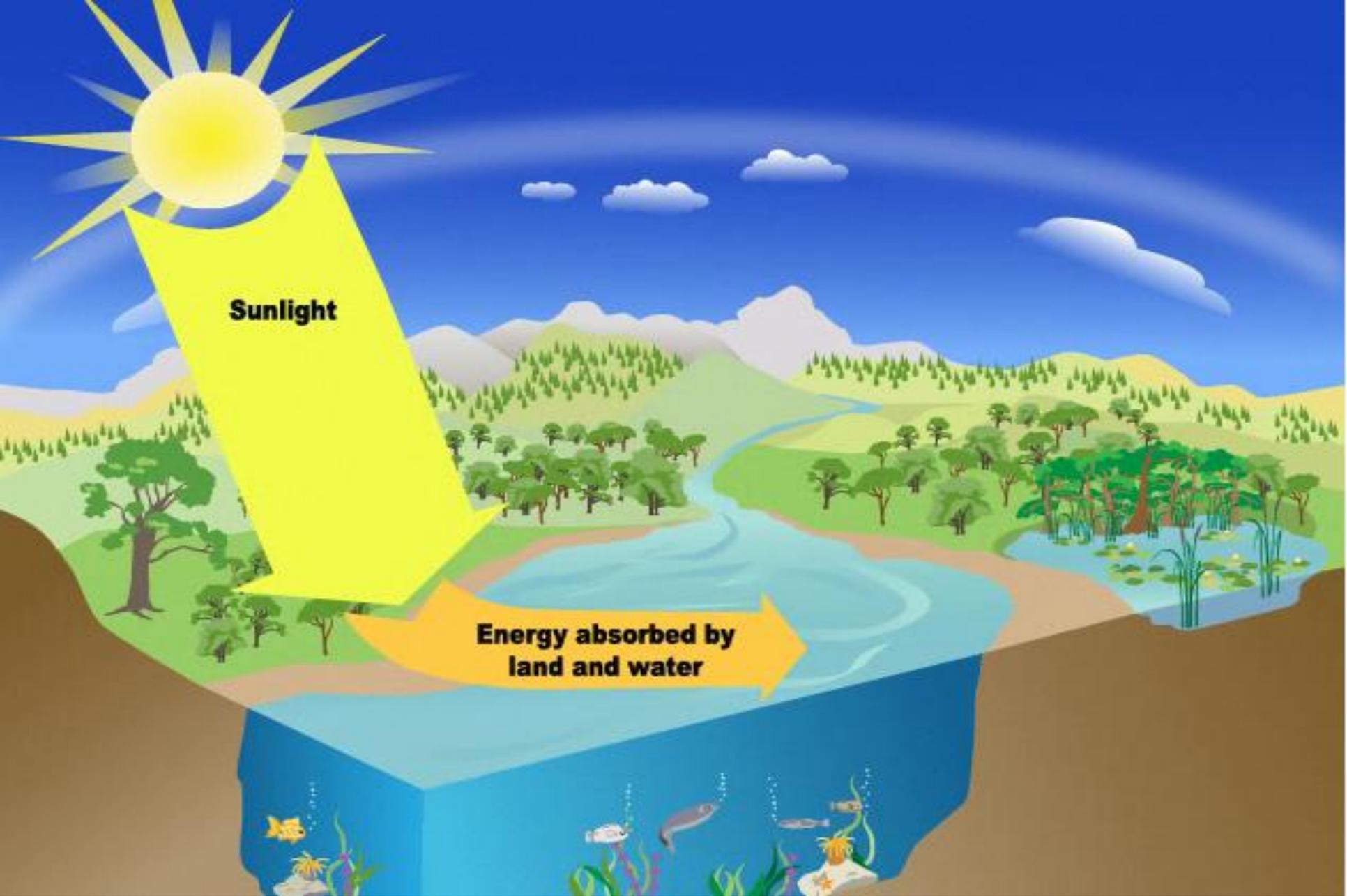
# Greenhouse Effect



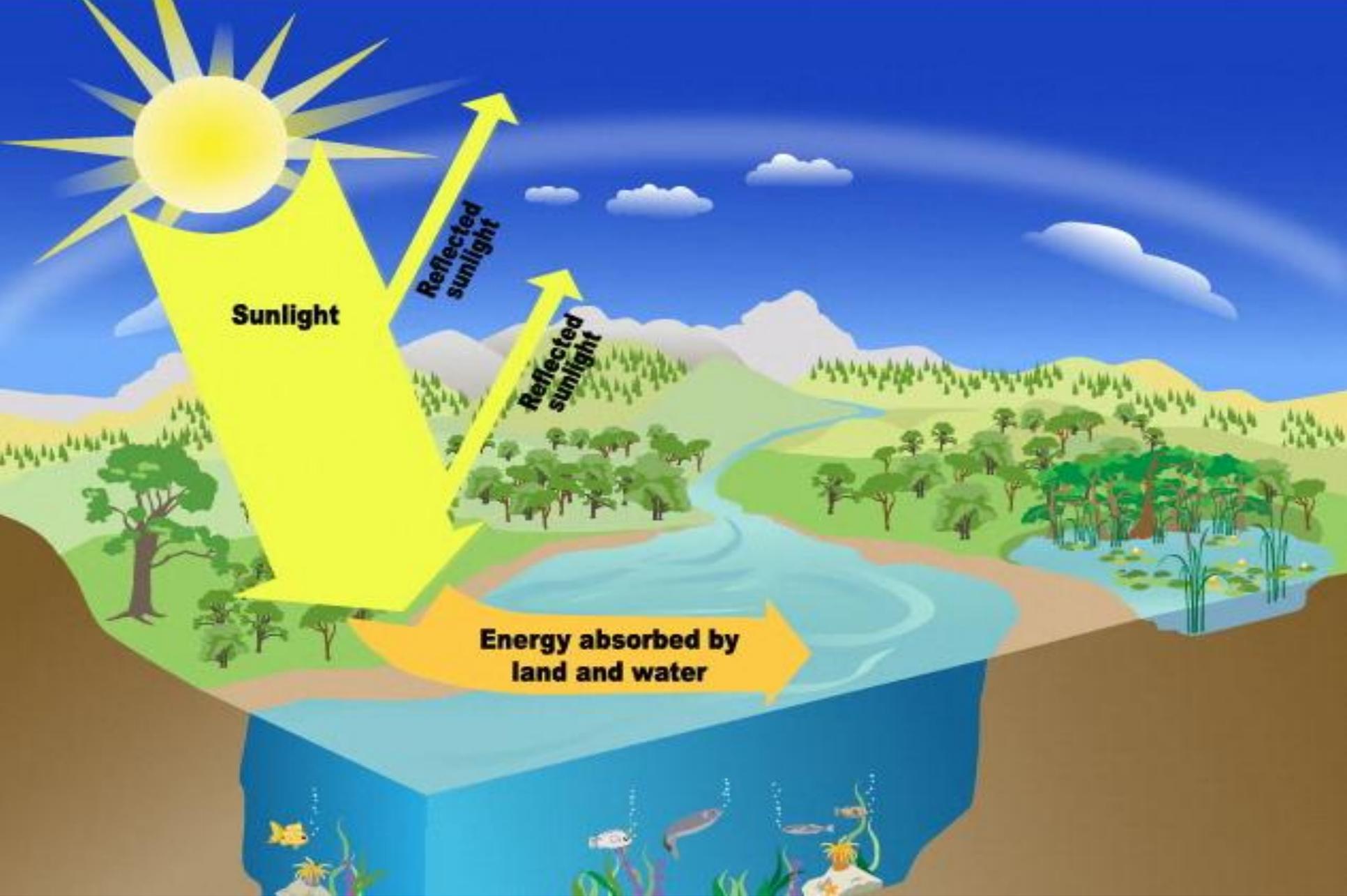
This is called the **Greenhouse Effect**.



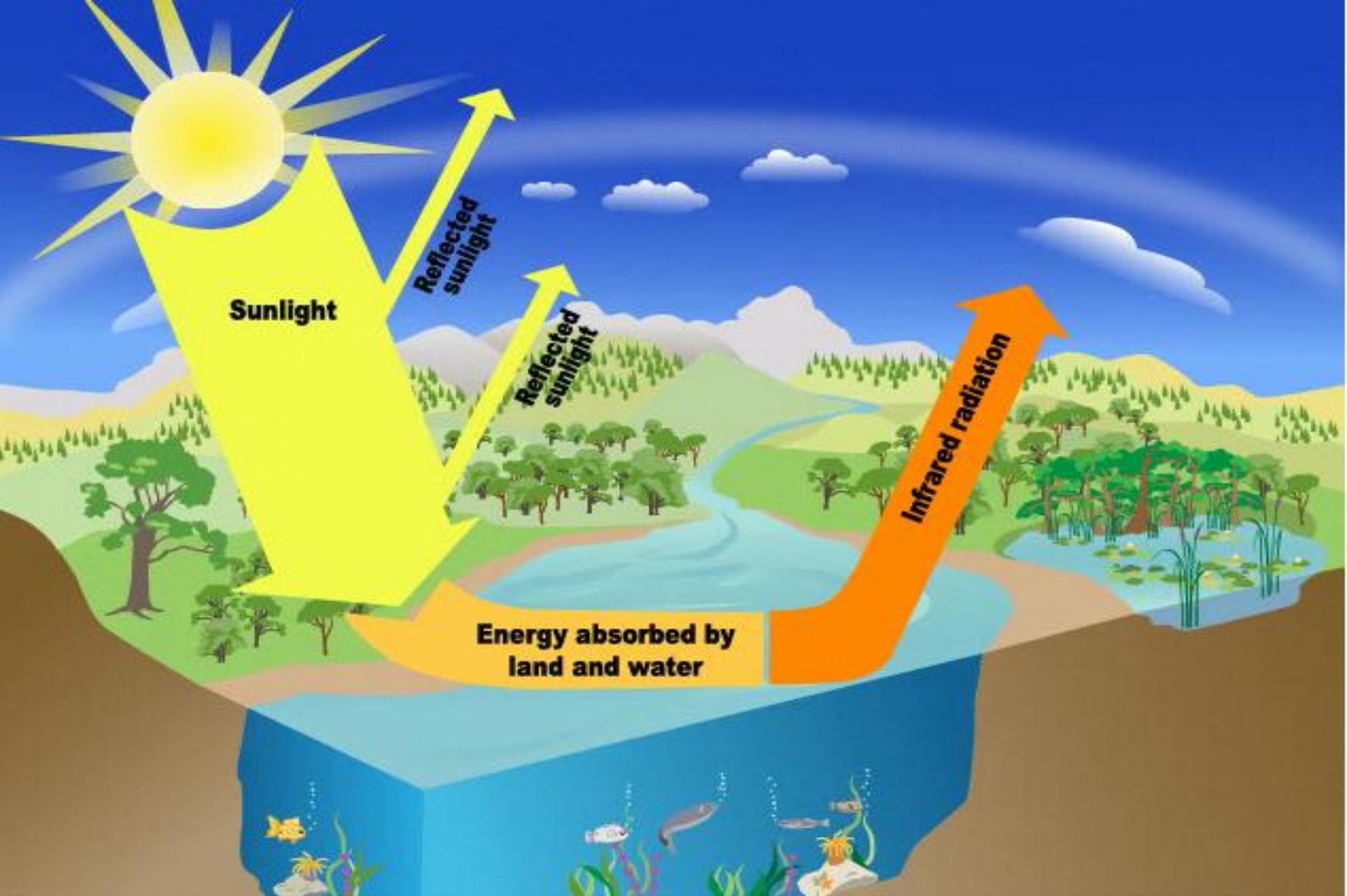
It starts with **sunlight** which is a form of **energy**.



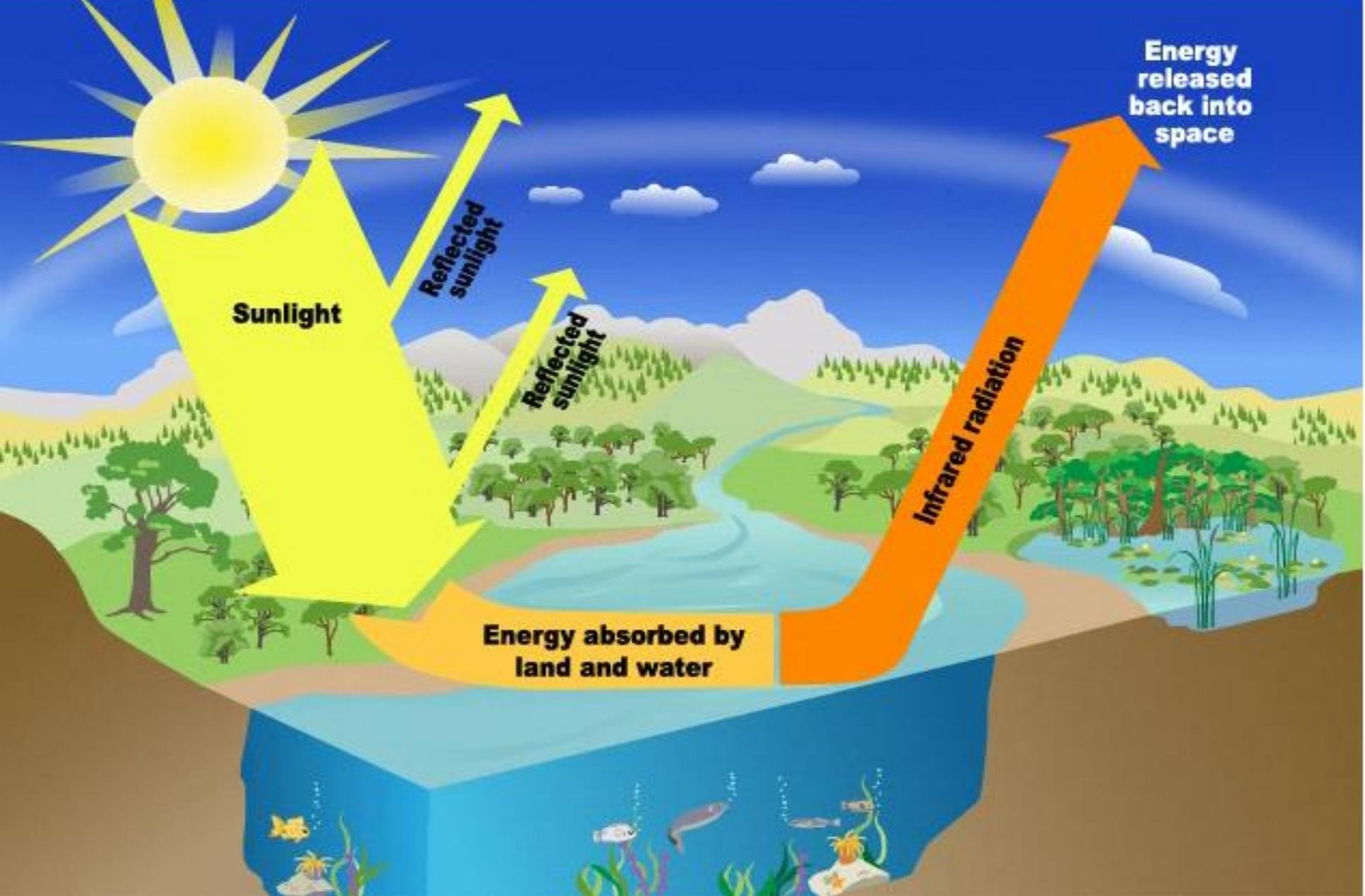
Land and water absorb most of the sunlight (energy) that reaches the earth.



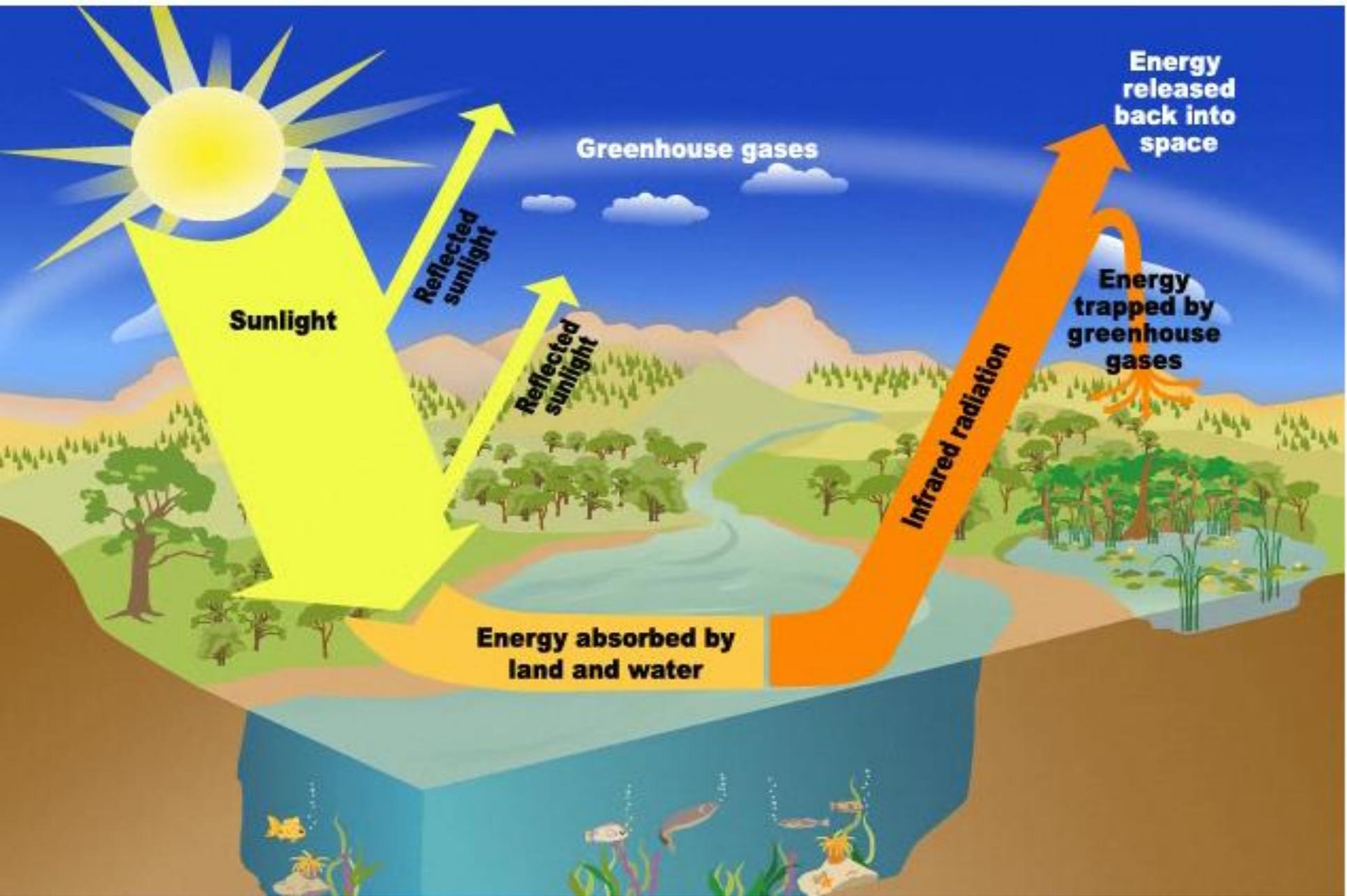
The rest of the sunlight and energy is reflected back to space.



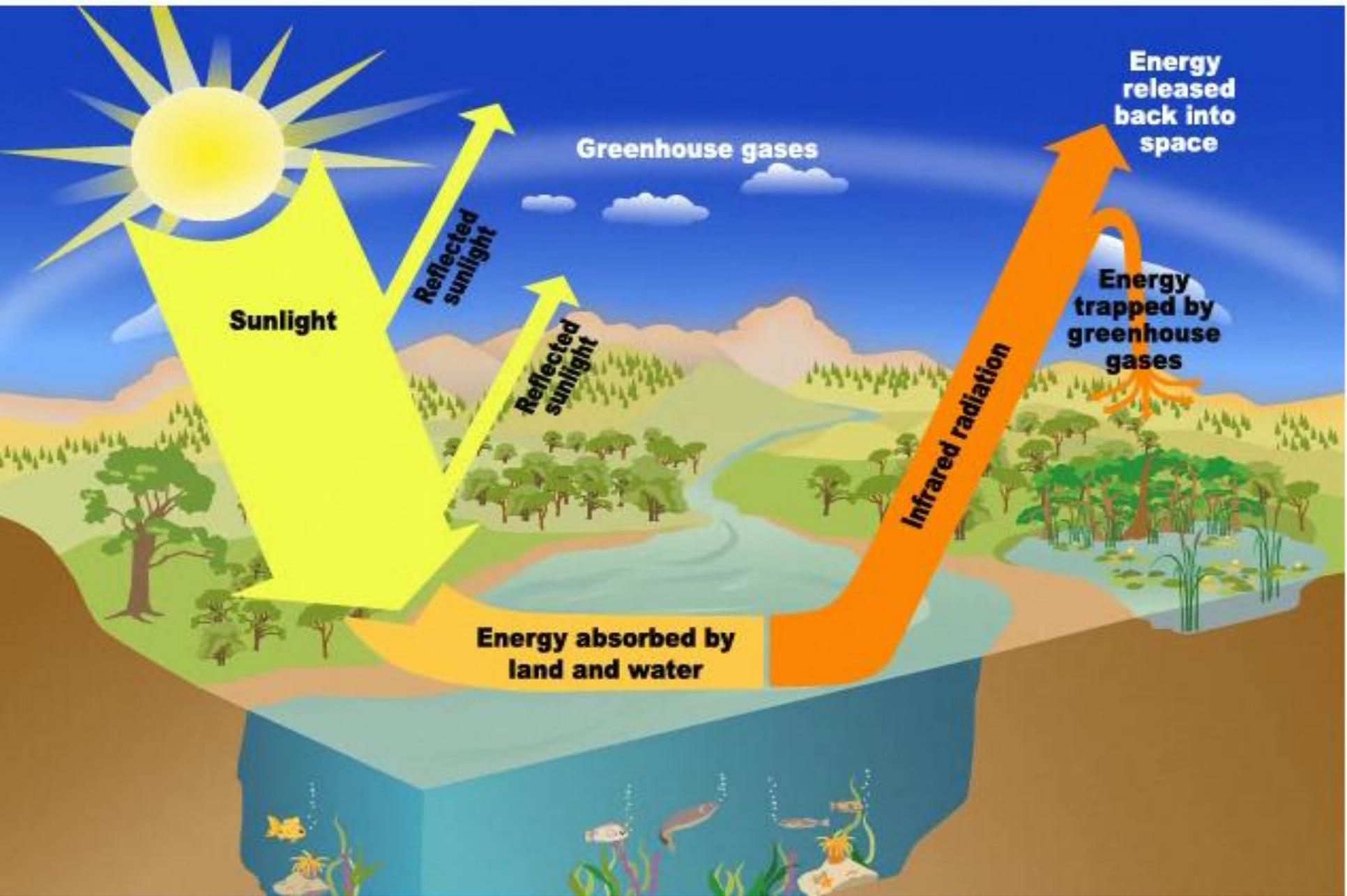
The earth's surface warms up and reflects energy as Infrared Radiation.



Most of the Infrared Radiation travels back to outer space.



Greenhouse gasses trap some of the Infrared Radiation before it escapes.



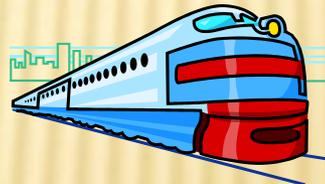
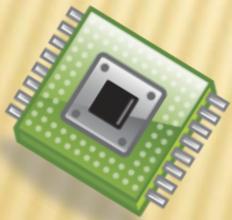
This trapped energy makes the earth's atmosphere warmer.



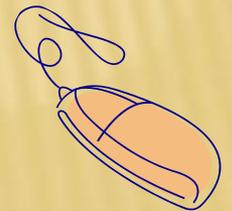
We need some green house gasses – without it, our planet would be **too cold** for life.

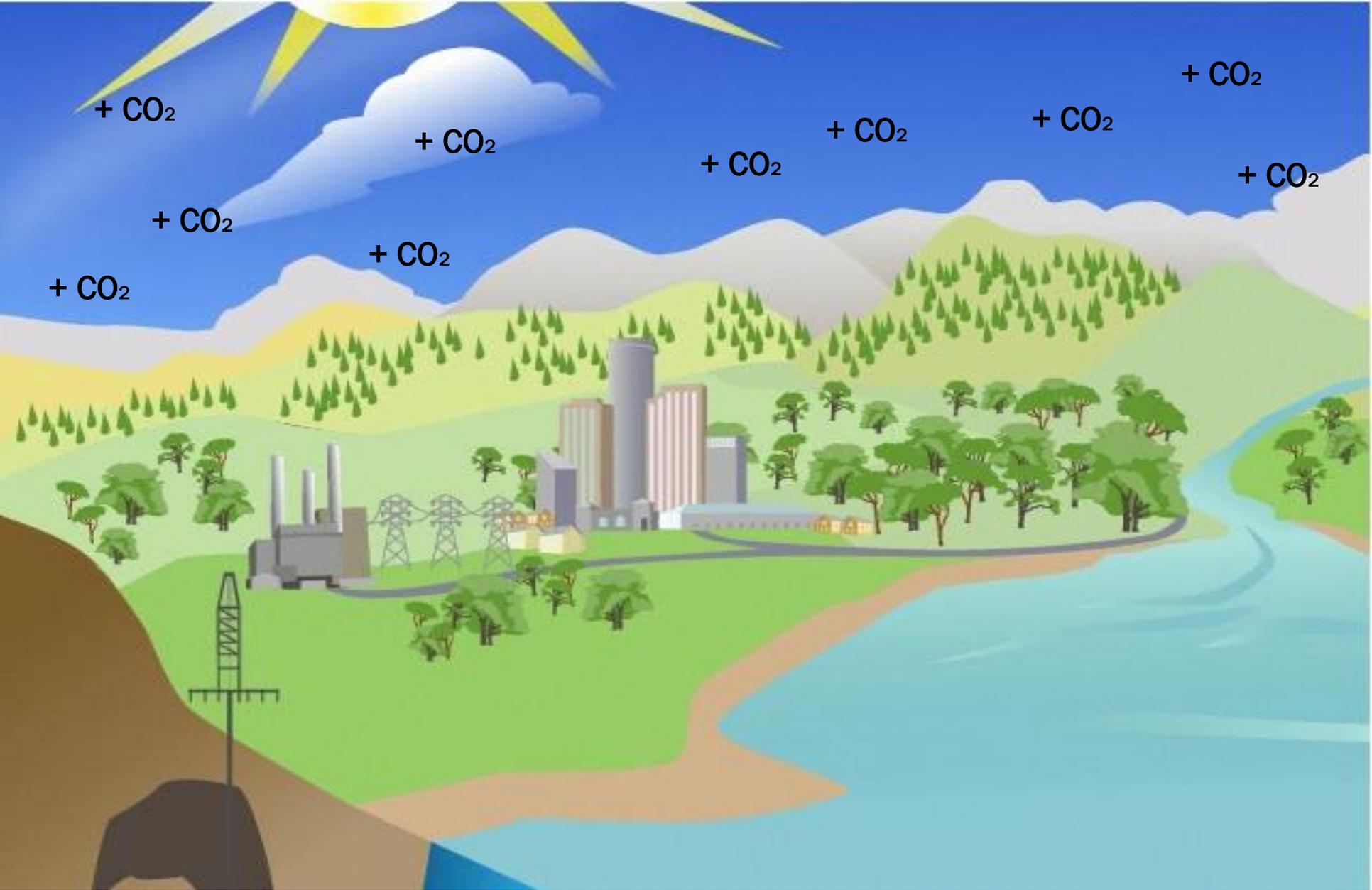


The earth's atmosphere is **thin** and **complex**. In 200 years, humans have changed it.

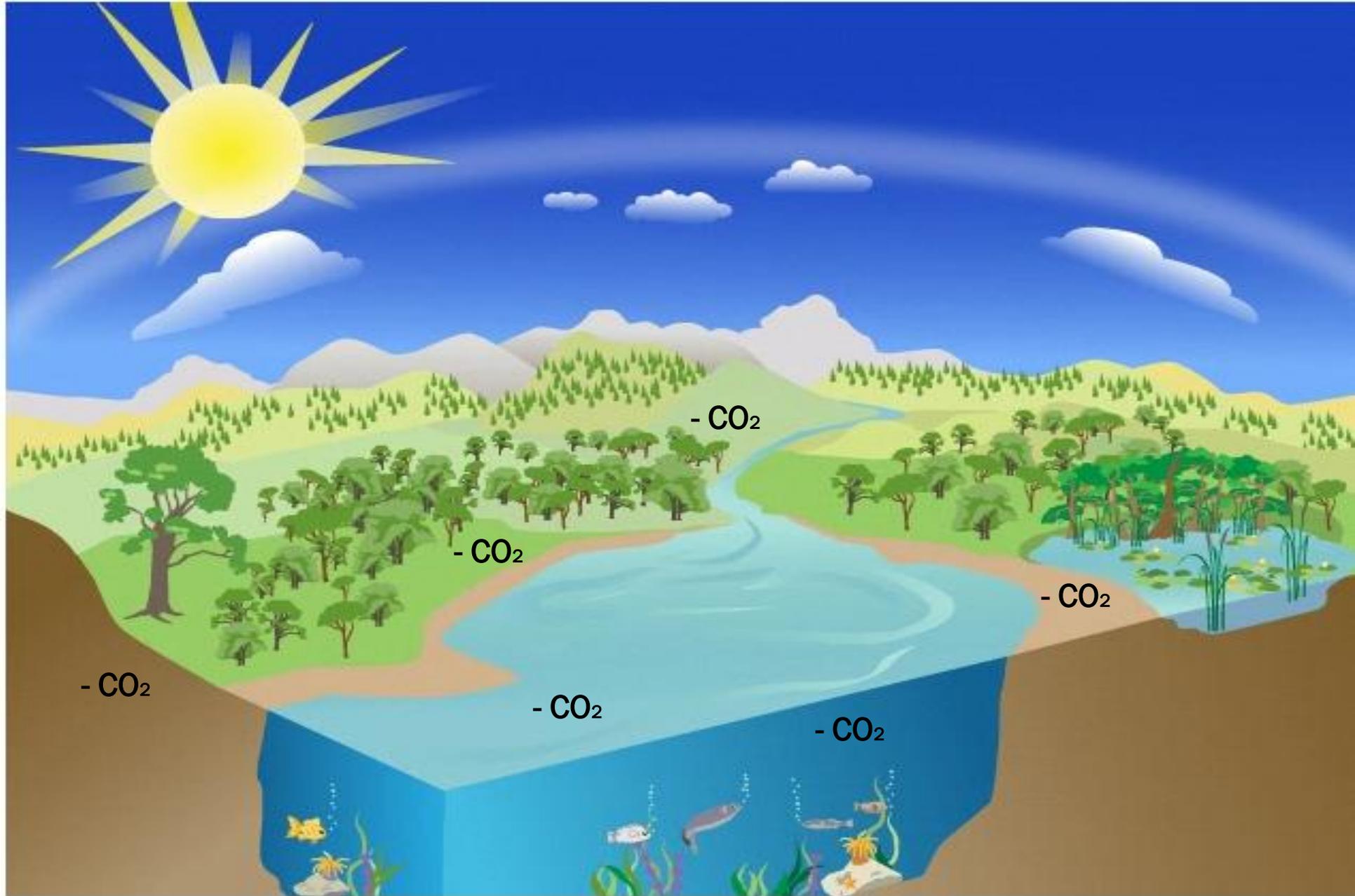


Our lifestyles require a lot of energy from **fossil fuels** like coal, oil , gas and wood.





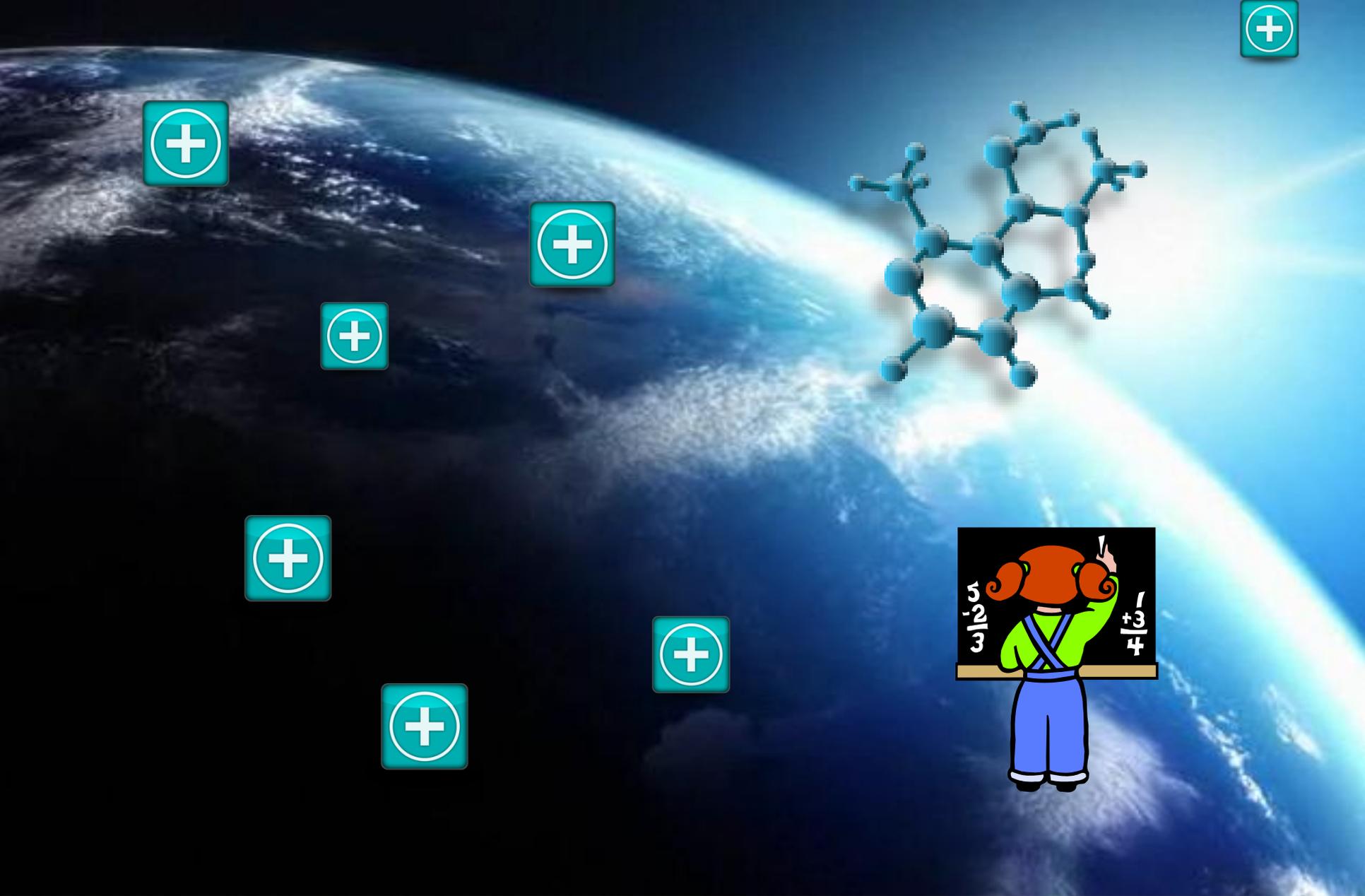
Human activities that burn fossil fuels for energy, or cut down forests for the land, release CO<sub>2</sub> that was once trapped.



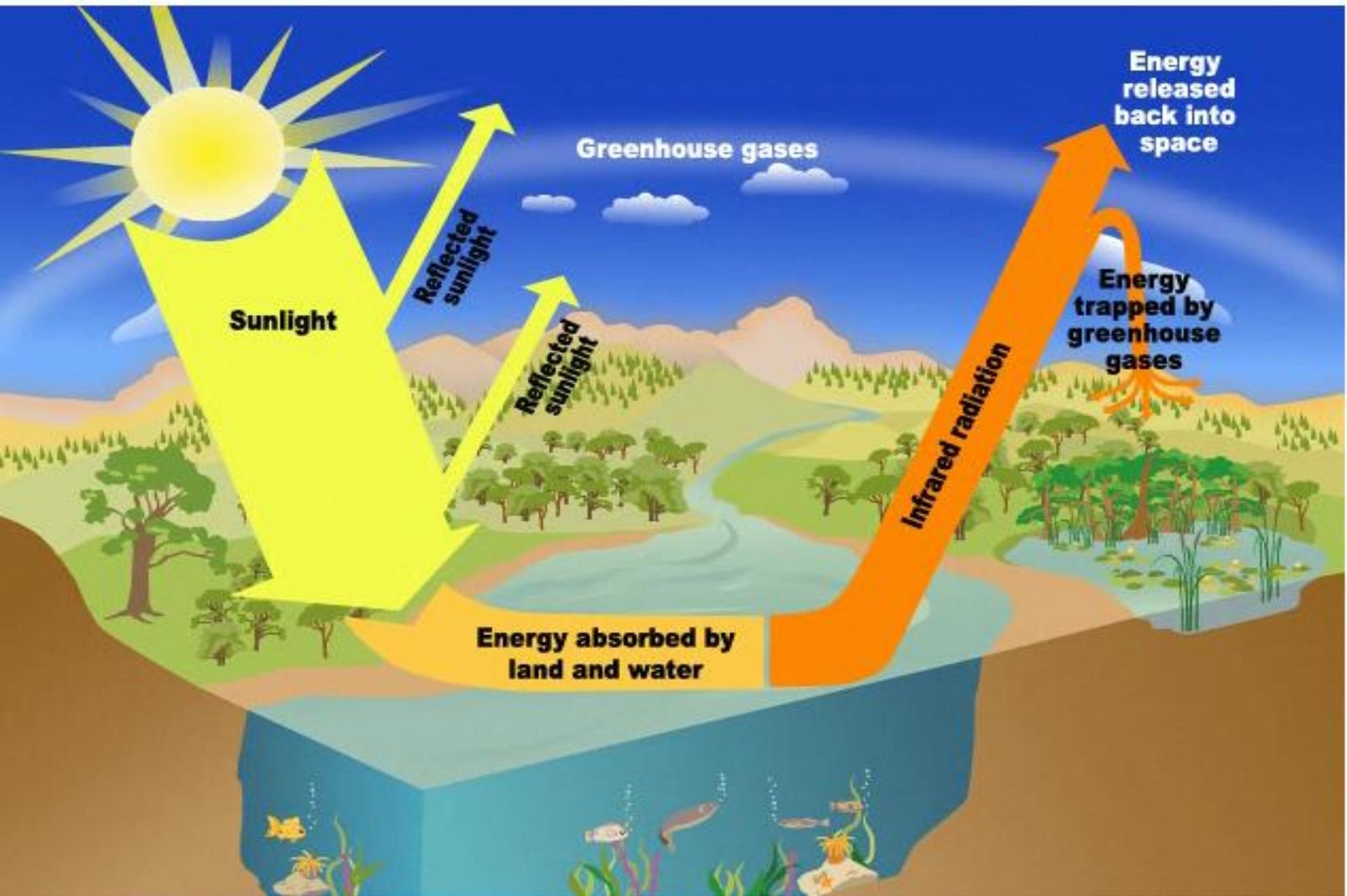
Photosynthesis, plants, growing skeletons, and plankton take in  $\text{CO}_2$  and removes it from atmosphere.



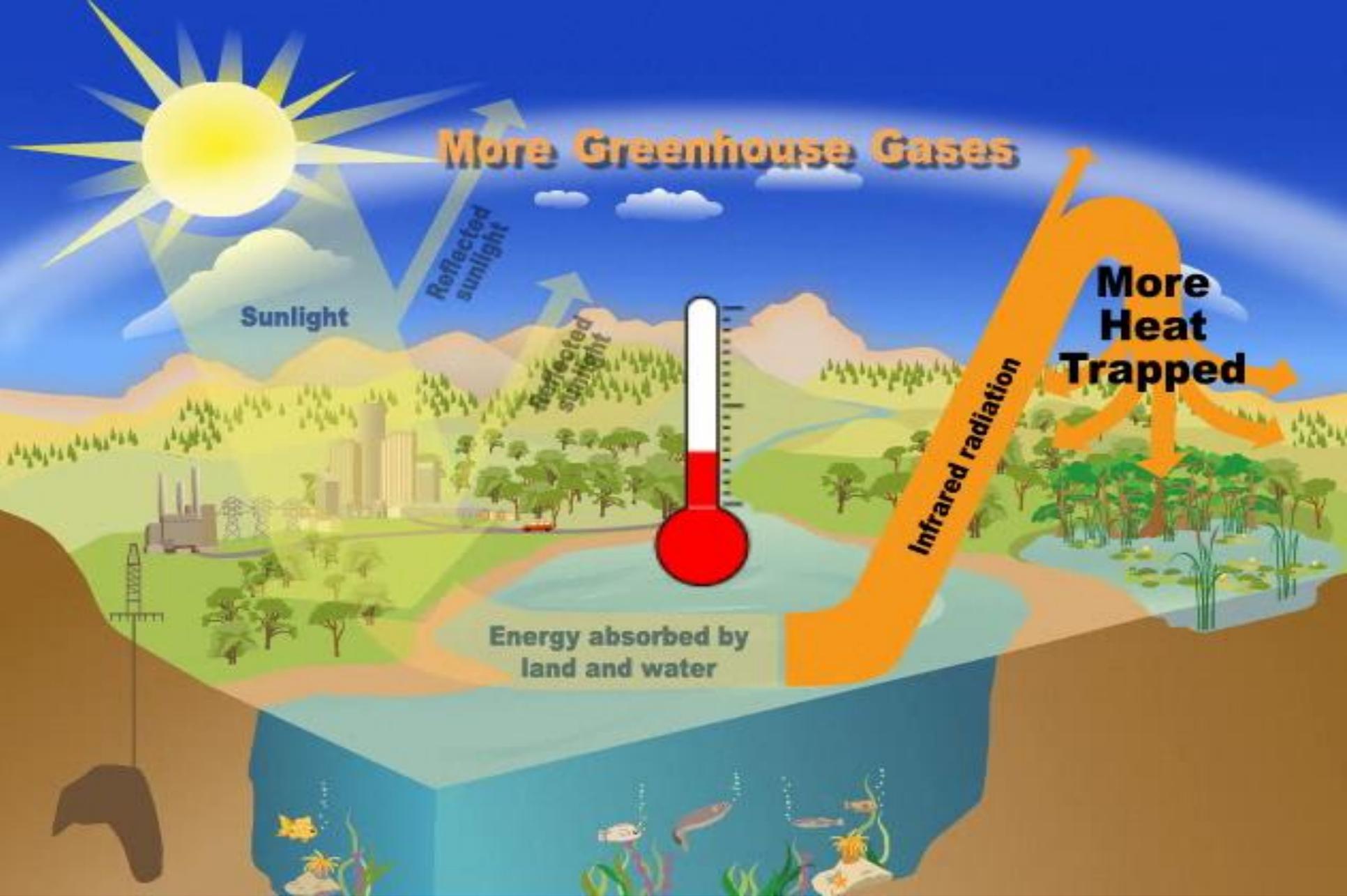
The math is simple – each year **billions of tons more CO<sub>2</sub>** is added in the atmosphere by human activities, than is removed by nature.



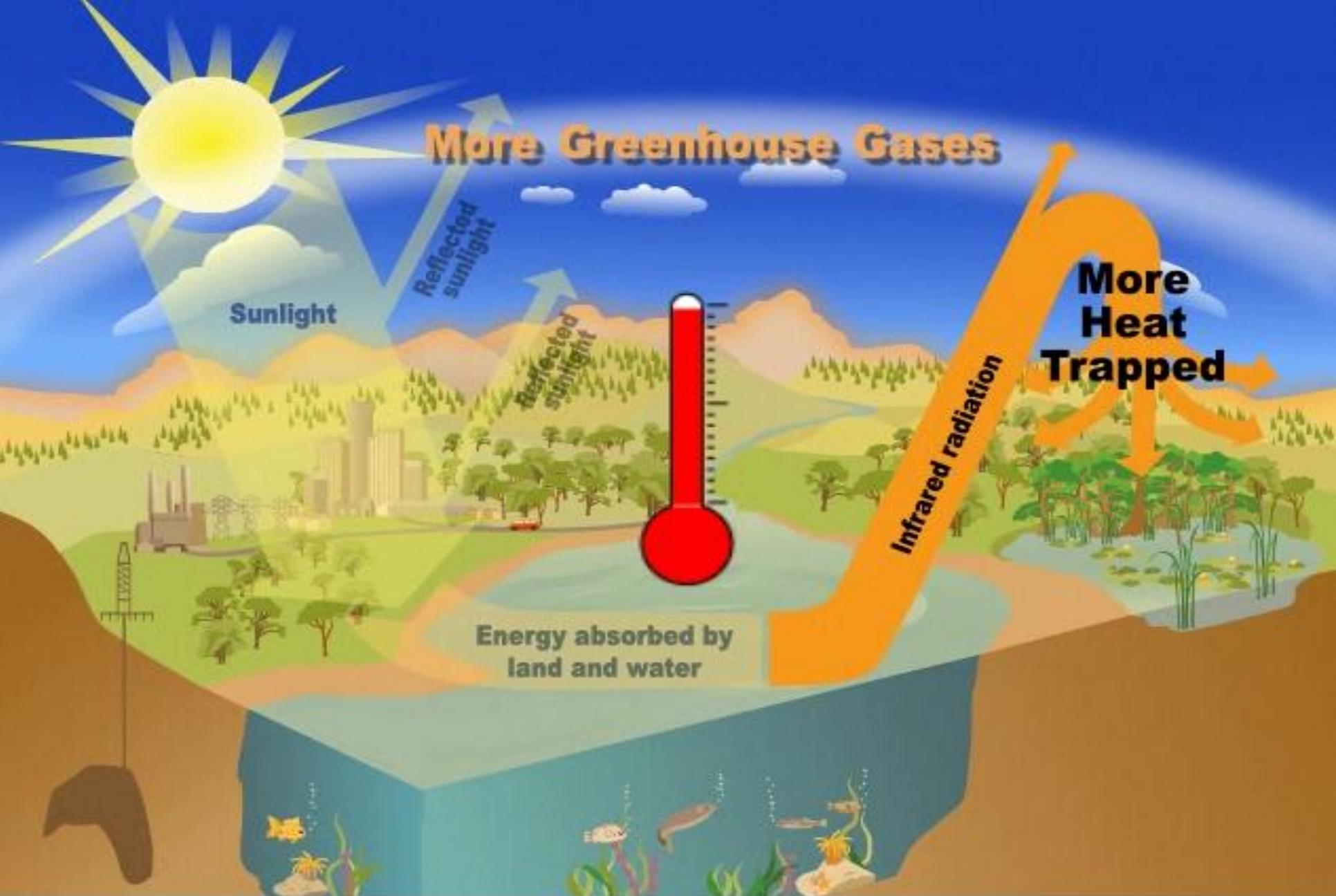
The extra billions of tons of carbon dioxide builds up in the atmosphere.



How do you think the extra greenhouse gasses will effect the atmosphere ?



Yes, it means more trapped heat.

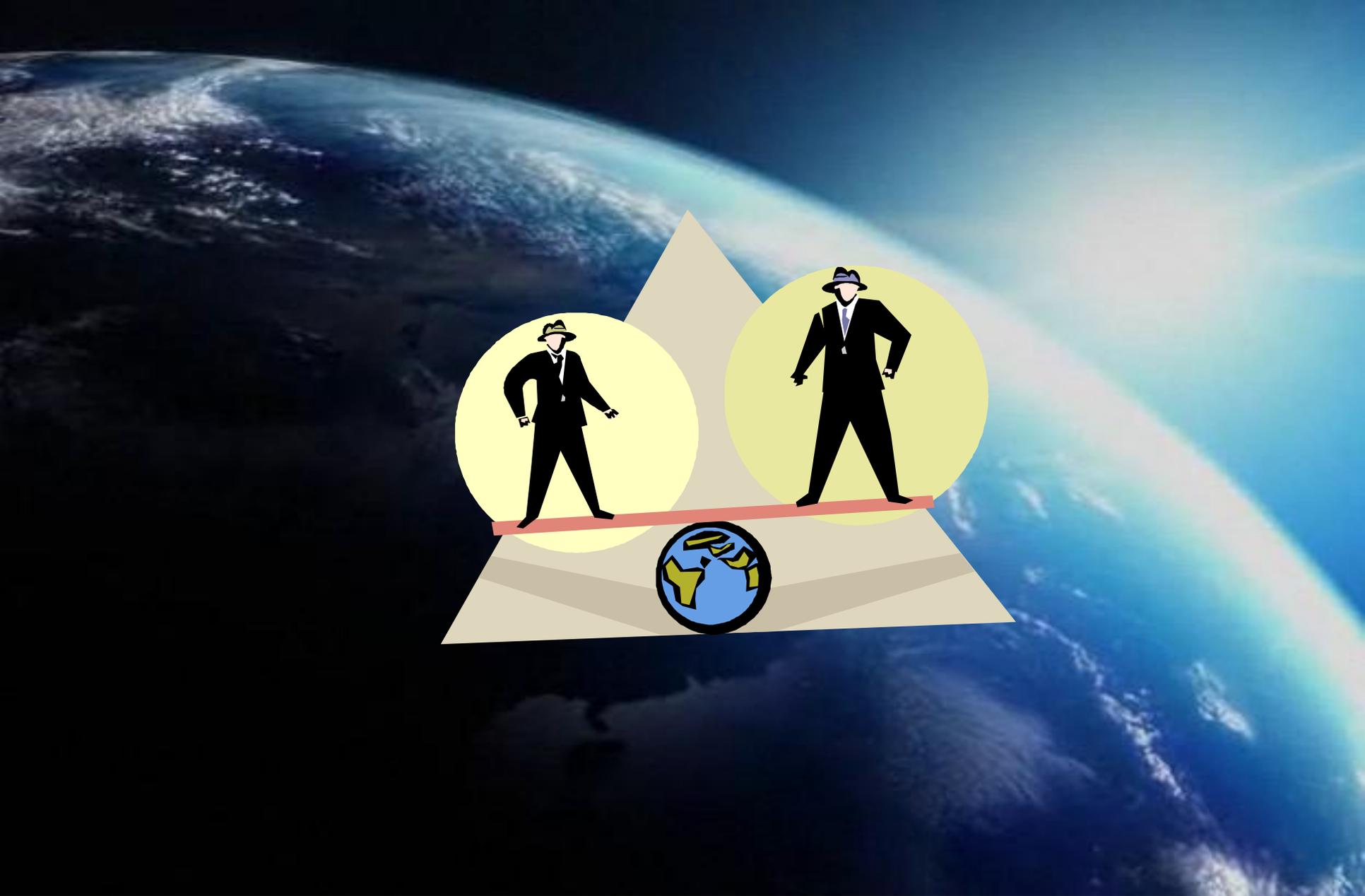


This extra heat will make the earth and oceans warmer.

# More Greenhouse Gases



A warmer planet will lead to new rain and snow patterns, and changes in sea level.



By making the greenhouse effect stronger, humans are quickly upsetting the natural balance. We are now seeing the effects of this.



Yes, the planet Earth has been through warming and cooling periods before.



This time though, you and seven billion others call earth home.

# LEARN THE BASICS- GREENHOUSE EFFECT

- ✘ Produced by Greg Litten – Everglades National Park. February 2012
- ✘ Aim: Audience of 5<sup>th</sup> grade students.
- ✘ Most graphics derived from EPA “*Learn the Basics: Greenhouse Effect*” video
- ✘ <http://www.epa.gov/climatechange/kids/>
- ✘ 2008 Carbon budget information from IPCC report and Dr Patrick Gonzalez.  
<http://www.youtube.com/watch?v=S9GRSLORwko>

