

Notes: The Greenhouse Effect

Name _____ Block _____

I. The Sun's energy reaches Earth through _____.

Insolation is the _____ (energy from the sun) that reaches the Earth. It is most intense during the summer, at noon, near the _____.

The Earth's surface only absorbs _____% of incoming solar radiation (A.K.A. **INSOLATION**)

- **30% is reflected back to space and 19% is absorbed by the atmosphere**

II. Energy is transferred from the Earth's surface by **radiation, conduction, convection, radiation, evaporation, and water condensation.**

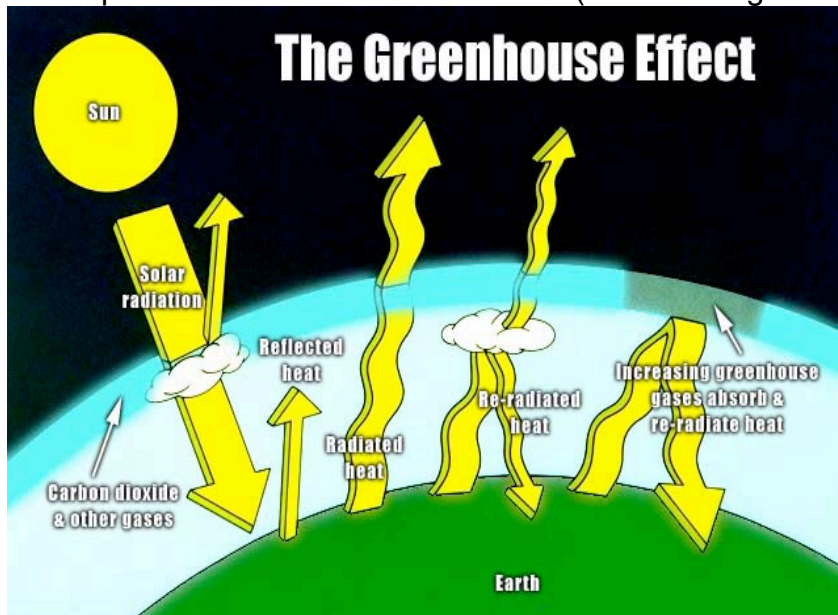
Ultimately, the Sun's heat and Earth's energy transfer is a major cause of _____.

III. **The Greenhouse Effect** is the process by which: _____

-In other words, **greenhouse gases** trap _____ and keep it close to Earth.

- 3 Main **Greenhouse Gases**: _____, _____ and _____.

IV. Explain how a Greenhouse Works: (Use the diagram to answer the question)



Explain the Greenhouse effect in your own words.

Write one question you still have?

V. **Is the Greenhouse Effect Good or Bad?**

1. It is necessary for life (good) because: _____

- **Remember how Mercury's temperature changes nearly 400° from day to night?**

2. It is bad when: _____

- **Remember how Venus has such a strong greenhouse effect that makes it too hot for liquid water and life to survive? Venus' greenhouse gasses are so thick we can barely see the surface.**

VI. **Global Warming is an increase** in average _____ (getting hotter!)
Global warming is caused by an _____ in **Greenhouse gases** in the atmosphere.

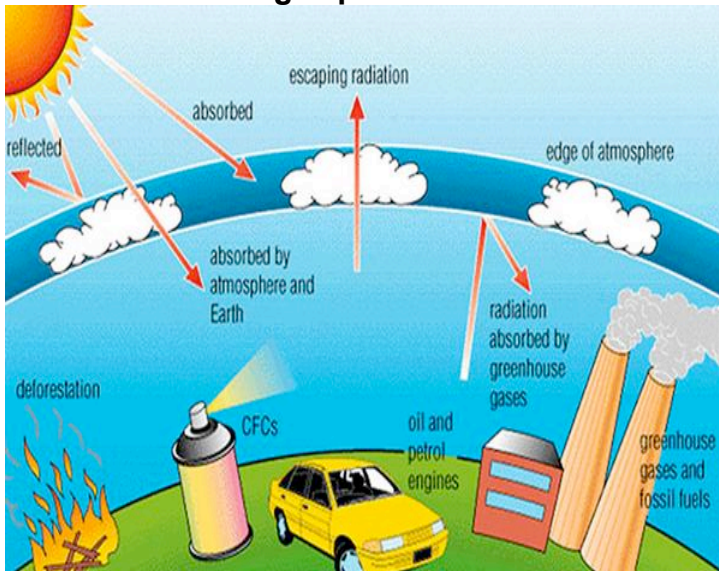
VII. **Greenhouse gases increase in the atmosphere when:**

1. _____ is added to the atmosphere when people **burn coal, oil, and natural gas** (_____) for **transportation, factories, and electricity**.
2. _____ or the **clearing of forests**, also increases the amount of **CARBON DIOXIDE (CO₂)** in the air because in photosynthesis: **plants take in carbon dioxide and remove it from the atmosphere, they make more oxygen**.
3. _____, _____, and _____ (**breathing**) also add CO₂.
4. _____ is produced when **garbage is buried in landfills**, from **animal waste** (poop), and from other natural sources.
5. As temperatures increase, **evaporation** increases which adds _____.

VIII. **Is Global Warming Happening?** Answer these questions from the slides

1. How much have global temperatures changed between 1980 and 2000? _____ °C
2. How much are global temperatures expected to change between 2000 and 2100? _____ °C
3. What percent of the polar ice caps have melted since 1979? _____ %
4. How much has sea level gone up since 1990? _____
5. _____ get their strength from _____ ocean water, so as temperatures increase, should we expect more intense storms? _____
6. Name 2 man-made greenhouse gas sources: _____ & _____
7. Where is Earth the warmest? _____ Why? _____

Greenhouse gas producers:



Insolation

