

SUGGESTED SKILL

 *Concept Explanation*

1.B

Explain environmental concepts and processes.



AVAILABLE RESOURCES

- Classroom Resource > [AP Environmental Science Teacher's Guide](#)
- External Resource > [Environmental Literacy Council's AP Environmental Science Course Material](#)
- External Source > [GLOBE for the Environmental Science Classroom](#)

TOPIC 9.3

The Greenhouse Effect

Required Course Content

ENDURING UNDERSTANDING

STB-4

Local and regional human activities can have impacts at the global level.

LEARNING OBJECTIVE

STB-4.C

Identify the greenhouse gases.

ESSENTIAL KNOWLEDGE

STB-4.C.1

The principal greenhouse gases are carbon dioxide, methane, water vapor, nitrous oxide, and chlorofluorocarbons (CFCs).

STB-4.C.2

While water vapor is a greenhouse gas, it doesn't contribute significantly to global climate change because it has a short residence time in the atmosphere.

STB-4.C.3

The greenhouse effect results in the surface temperature necessary for life on Earth to exist.

STB-4.D

Identify the sources and potency of the greenhouse gases.

STB-4.D.1

Carbon dioxide, which has a global warming potential (GWP) of 1, is used as a reference point for the comparison of different greenhouse gases and their impacts on global climate change. Chlorofluorocarbons (CFCs) have the highest GWP, followed by nitrous oxide, then methane.