



Greenhouse Effect: Insulating You, Insulating Earth Middle School

Overview

To understand how increases in greenhouse gases in the atmosphere increase global surface temperatures, students will model the natural and enhanced greenhouse effect. Students conduct an experiment using their own body heat, thermometers, towels, and Mylar blankets.

Phenomenon

How do changes in the amount of greenhouse gases in Earth’s atmosphere affect surface temperatures on Earth?

Vocabulary

- *Greenhouse Effect* - the process by which the climate is regulated by greenhouse gases - carbon dioxide, water vapor, ozone, methane, nitrous oxide, and fluorinated gases.
- *Enhanced Greenhouse Effect* - the process by which more of the re-radiated heat from Earth is re-emitted back to the planet instead of escaping into space because of increased amounts of greenhouse gases in the atmosphere, causing global temperatures to increase.

Next Generation Science Standards

MS-ESS3-5. Ask questions and clarify evidence of the factors that have caused the rise in global temperatures over the past century.

Science and Engineering Practices	Disciplinary Core Ideas	Cross Cutting Concepts
Asking questions and defining problems	ESS3.D: Global Climate Change	Stability and change
Developing and using models		Cause and effect
Planning and carrying out investigations		Energy and matter
Analyzing and interpreting data		

Common Core State Standards

ELA-Literacy

RST.6-8.3 Follow precisely a multistep procedure when carrying out experiments, taking measurements, or performing technical tasks.

RST.6-8.4 Determine the meaning of symbols, key terms, and other domain-specific words and phrases as they are used in a specific scientific or technical context relevant to grades 6-8 texts and topics.