



The Ins and Outs of a Climate Feedback Loop High School

Overview

Students learn how increasing atmospheric carbon dioxide is warming Earth’s climate. They use the National Oceanic and Atmospheric Administration (NOAA) Interactive Atmospheric Data Visualization tool to investigate atmospheric carbon dioxide locally, conduct an experiment to model the greenhouse effect, and examine a positive feedback loop.

Phenomenon

Carbon dioxide in the atmosphere is affecting temperatures on Earth, resulting in several positive feedback loops.

Next Generation Science Standards Addressed

HS-ESS2-2 Analyze geoscience data to make the claim that one change to Earth’s surface can create feedbacks that cause changes to other Earth systems.

Asombro lessons are aligned with the three-dimensional learning model of the Next Generation Science Standards.

Science & Engineering Practices	Disciplinary Core Ideas	Cross Cutting Concepts
Developing and Using Models Analyzing and Interpreting Data	ESS2.A: Earth Materials and Systems ESS2.D: Weather and Climate	Stability and Change Systems and System Models

Common Core State Standards Addressed

CCSS.MATH.CONTENT.HSN.Q.A.2. Define appropriate quantities for the purpose of descriptive modeling.

CCSS.MATH.CONTENT.HSS.ID.A.2. Use statistics appropriate to the shape of the data distribution to compare center (median, mean) and spread (interquartile range, standard deviation) of two or more different data sets.

CCSS.ELA-LITERACY.W.9-10.1.E. Provide a concluding statement or section that follows from and supports the argument presented.

CCSS.ELA-LITERACY.RST.9-10.3. Follow precisely a complex multistep procedure when carrying out experiments, taking measurements, or performing technical tasks, attending to special cases or exceptions defined in the text.

CCSS.ELA-LITERACY.RST.9-10.4. 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 9-10 texts and topics*.