
My NASA Data - Interactive Models

The Role of Earth's Features in Earth's Energy Budget



Earth strives to maintain a balance between the overall amount of incoming and outgoing energy at the top of the atmosphere. This is called Earth's energy budget or Earth's radiation budget. Earth receives incoming energy from the Sun. Earth also emits energy back to space. For Earth's temperature to be stable over long periods of time (for the energy budget to be in balance), the amount incoming energy and outgoing energy must be equal. If incoming energy is more than outgoing energy, Earth will warm. If outgoing energy is greater than incoming energy, Earth will cool.

To learn more, visit:

- The [Earth's Energy Budget Phenomena page](#) for background information.



Virtual Teachers: Make a copy of the Google Form of your choice so that you may assign it directly from your Google Drive into your Learning Management System (e.g., Google Classroom, Canvas, Schoology, etc.). Do you need help incorporating these Google Forms into your Learning



Management System? If so, read this [Guide to Using Google Forms with My NASA Data](#).

Teachers who are interested in receiving the answer key, please complete the [Teacher Key Request and Verification Form](#). We verify that requestors are teachers prior to sending access to the answer keys as we've had many students try to pass as teachers to gain access.

Grade Band

- 6-8
- 9-12

Supported NGSS Performance Expectations

- [MS-ESS2-6: Develop and use a model to describe how unequal heating and rotation of the Earth cause patterns of atmospheric and oceanic circulation that determine regional climates.](#)
- [MS-ESS3-5: Ask questions to clarify evidence of the factors that have caused the rise in global temperatures over the past century.](#)
- [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.](#)
- [HS-ESS2-4: Use a model to describe how variations in the flow of energy into and out of Earth's systems result in changes in climate.](#)

NGSS Disciplinary Core Ideas

- ESS2A: Earth Materials and Systems
- ESS3C: Human Impacts on Earth Systems

Science and Engineering Practices

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- Developing and Using Models
 - Analyzing and Interpreting Data

Crosscutting Concepts

- Systems and System Models
- Stability and Change

Related Resources

- [The Role of Earth's Features in Earth's Energy Budget Interactive Model](#)
- [Data Literacy Cube Guide](#)